IELTS READING (ACADEMIC)

Actual Tests With Answers

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Preface

As far as you know, IELTS candidates will have only 60 minutes for this IELTS Reading part with a total of 40 questions. Therefore, it is absolutely necessary that you invest time in practicing the real IELTS reading tests for this module.

Besides Cambridge IELTS Practice Tests series published by Oxford University Press, IELTS Reading Recent Actual Tests with Answers aims to develop both test-taking skills and language proficiency to help you achieve a high IELTS Reading score. It contains IELTS Reading Tests in the chronological order starting from the recent tests and an Answer Key. Each test contains three reading passages which cover a rich variety of topics and give a lot of practice for a wide range of question types used in the IELTS Exam such as multiple-choice questions, short- answer questions, sentence completion, summary completion, classification, matching lists / phrases, matching paragraph headings, identification of information – True/False/Not Given, etc. When studying IELTS with this e-book, you can evaluate at the nearest possibility how difficult the IELTS Reading Section is in the real exam, and what the top most common traps are. Moreover, these tests are extracted from authentic IELTS bank source; therefore, you are in all probability to take these tests in your real examinations.

The authors are convinced that you will find IELTS Reading Recent Actual Tests extremely helpful on your path to success with the International English Language Testing System.

Don’t just trust luck in your IELTS exam – the key is practice!

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Table of Contents

IELTS Reading Test 1	1
IELTS Reading Test 2	21
IELTS Reading Test 3	38
IELTS Reading Test 4	56
IELTS Reading Test 5	73
IELTS Reading Test 6	90
IELTS Reading Test 7	109
IELTS Reading Test 8	127
IELTS Reading Test 9	146
IELTS Reading Test 10	167
IELTS Reading Test 11	185
IELTS Reading Test 12	202
IELTS Reading Test 13	222
IELTS Reading Test 14	244
IELTS Reading Test 15	260
IELTS Reading Test 16	276
IELTS Reading Test 17	294
IELTS Reading Test 18	310
IELTS Reading Test 19	326
IELTS Reading Test 20	345
IELTS Reading Test 21	364
IELTS Reading Test 22	383
IELTS Reading Test 23	398
IELTS Reading Test 24	419
IELTS Reading Test 25	436
Answer Keys	454

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IELTS Reading Test 1

Section 1

Instructions to follow

- You should spend 20 minutes on Questions 1-14 which are based on Reading Passage 1

Tikopia

A. There are still debates about the origins of Polynesian culture, but one thing we can ensure is that Polynesia is not a single tribe but a complex one. Polynesians, which includes Marquesan , Samoans, Niueans, Tongans, Cook Islanders, Hawaiians, Tahitians, and Maori, are genetically linked to indigenous peoples of parts of Southeast Asia. It's a sub-region of Oceania, comprising a large grouping of over 1 ,000 islands scattered over the central and southern Pacific Ocean, within a triangle that has New Zealand, Hawaii and Easter Island as its corners.

B. Polynesian history has fascinated the western world since Pacific cultures were first contacted by European explorers in the late 18th century. The small island of Tikopia, for many people - even for many Solomon Islanders-- is so far away that it seems like a mythical land; a place like Namia that magical land in C. S. Lewis, classic, 'The Chronicles of Namia." Maybe because of it — Tikopia, its people, and their cultures have long fascinated scholars, travelers, and casual observers. Like the pioneers Peter Dillion, Dumoni D' Urville and John Colleridge Patterson who visited and wrote about the island in the 1800s, Raymond Firth is one of those people captured by the alluring attraction of Tikopia. As a result, he had made a number of trips to the island since the 1920s and recorded his experiences, observations and reflections on Tikopia, its people, cultures and

the changes that have occurred.

C. While engaged in study of the kinship and religious life of the people of Tikopia, Firth made a few observations on their tattooing. Brief though these notes are, they may be worth putting on record as an indication of the sociological setting of the practice in this primitive Polynesian community. The origin of the English word ‘tattoo' actually comes from the Tikopia word 'tatau1. The word for tattoo marks in general is tau, and the operation of tattooing is known as ta tau, ta being the generic term for the act of striking.

D. The technique of tattooing was similar throughout Polynesia. Traditional tattoo artists create their indelible tattoos using pigment made from the candlenut or kukui nut. First, they bum the nut inside a bowl made of half a coconut shell. They then scrape out the soot and use a pestle to mix it with liquid. Bluing is sometimes added to counteract the reddish hue of the carbon-based pigment. It also makes the outline of the inscribed designs bolder on the dark skin of tattooing subjects.

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E. For the instruments used when tattooing, specialists used a range of chisels made from albatross wing bone which were hafted onto a handle which was made from the heartwood of the bush and struck with a mallet. The tattooer began by sketching with charcoal a design on the supine subject, whose skin at that location was stretched taut by one more apprentice. The tattooer then dipped the appropriate points - either a single one or a whole comb into the ink (usually contained in a coconut-shell cup) and tapped it into the subject's skin, holding the blade handle in one hand and tapping it with the other. The blood that usually trickled from the punctures was wiped away either by the tattooer or his apprentice, the latter having also served by restraining a pain-wracked subject from moving, for the operation was inevitably painful a test of fortitude that tattooers sought to shorten by working as fast as possible. In fact, tattoos nearly always festered and often led to sickness - and in some cases death.

F. In ancient Polynesian society, nearly everyone was tattooed. It was an integral part of ancient culture and was much more than a body ornament. Tattooing indicated ones genealogy and/or rank in society. It was a sign of wealth, of strength and of the ability to endure pain. Those who went without them were seen as persons of lower social status. As such, chiefs and warriors generally had the most elaborate tattoos. Tattooing was generally begun at adolescence and would often not be completed for a number of years. Receiving a tattoo constituted an important milestone between childhood and adulthood, and was accompanied by many rites and rituals. Apart from signaling status and rank, another reason for the practice in traditional times was to make a person more attractive to the opposite sex.

G. The male facial tattoo is generally divided into eight sections of the face. The center of the forehead designated a person's general rank. The area around the brows designated his position. The area around the eyes and the nose designated his hapu, or sub-tribe rank. The area around the temples served to detail ms marital status, like the number of marriages. The area under the nose displayed his signature. This signature was once memorized by tribal chiefs who used it when buying property, signing deeds, and officiating orders. The cheek area designated the nature of the person's work. The chin area showed the person's mana. Lastly, the jaw area designated a person's birth status.

H. A person's ancestry is indicated on each side of the face. The left side is generally the father's side, and the right side was the mother's. The manutahi design is worked on the men’s back. It consists of two vertical lines drawn down the spine, with short vertical lines between them. When a man had the manutahi on his back, he took pride in himself. At gatherings of the people he could stand forth in their midst and display his tattoo designs with songs. And rows of triangles design on the men's chest indicate his bravery.

I. The tattoo was a way of delivering information of its owner. It's also a traditional method to fetch spiritual power, protection and strength. The Polynesians use this as a sign of character, position and levels in a hierarchy. Polynesian peoples believe that a person's mana, their spiritual power or life force, is displayed through their tattoo.

Questions 1-4

Instructions to follow

- Do the following statements agree with the information given in the text? Write
  TRUE if the statement agrees with the information
  FALSE if the statement contradicts the information
  NOT GIVEN if there is no information on this

1. Scientists like to do research in Tikopia because this tiny place is of great remoteness.
2. Firth was the first scholar to study on Tikopia.
3. Firth studied the culture differences on Tikopia as well as on some other islands of Pacific.
4. The English word 'tattoo' is evolved from the local language of the island.

Questions 5-9

Instructions to follow

- Label the diagram below.
- Choose NO MORE THAN TWO WORDS from the passage for each answer.

bowl made of 5 .....
burn the material inside to get 6 ....,
and stir in the 7 .....

produced from 8 ..... of small trees

produced from 9 .....of seabird

Questions 10-14

Instructions to follow

- Complete the table below. Choose NO MORE THAN TWO WORDS from the passage for each answer.

LOCATION ON THE BODY	SIGNIFICANCE	GEOMETRIC PATTERNS
10 _____ of male face	general rank	
11 _____ of male face	prestige	
Female's right side of the face	12 _____	
Male back	Sense of pride	13 _____
Male chest	bravery	14 _____

Section 2

Instructions to follow

- You should spend 20 minutes on Questions 14-27 which are based on Reading Passage 2

Brand Loyalty Runs Deep

A. At almost any supermarket in Sydney, Australia, food from all over the world fills the shelves. Perhaps you fancy some Tick Tock Rooibos tea made in South Africa, or some Maharaja's Choice Rogan Josh sauce from India. Alongside local Foster's beer, Chinese Tsingtao and Indonesian Bintang are both to be found. For homesick Britons, the confectionary aisle is stocked with Mars Bars and Bountys, while for pining Poles sweets manufactured by firms like Wawel or Solidarnosc are available. Restaurants in Sydney range from Afghan to Zambian, catering for different ethnic groups as well as the rest of the curious general public.

B. All of this variety is a result of population movement and changes in global trade, and, to a lesser extent, reduced production and transportation costs. While Australia can claim around 40% of its population as the first generation, other countries, like Switzerland, may have fewer international migrants, but still, have people who move from city to city in search of work. Even since the 1990s, taxes or tariffs on imported goods have decreased dramatically. The World Trade Organisation, for example, has promulgated the idea of zero tariffs, which has been adopted into legislation by many member states. It is estimated that within a century, agriculture worldwide has increased its efficiency five-fold. Faster and better-integrated road and rail services, containerisation, and the ubiquitous aeroplane have sped up transport immeasurably.

C. Even with this rise in the availability of non-local products, recent studies suggest that supermarkets should do more to increase their number to match more closely the proportion of shoppers from those countries or regions. Thus, if 10% of a supermarket's customers originate in Vietnam, there ought to be 10% Vietnamese products in store. If Americans from southern states dominate in one northern neighbourhood, southern brands should also be conspicuous. Admittedly, there are already specialist shops that cater to minority groups, but minorities do frequent supermarkets.

D. Two separate studies by Americans Bart Bronnenberg and David Atkin have found that brand loyalty (choosing Maharaja's Choice over Patak's, or Cadbury's over Nestlé) is not only determined by advertising, but also by a consumer's past. If a product featured in a person's early life in one place, then, as a migrant, he or she is likely to buy that same product even though it is more expensive than an otherwise identical locally-produced one.

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E. In the US context, between 2006 and 2008, Bronnenberg analysed data from 38,000 families who had bought 238 different kinds of packaged goods. Although the same brands could be found across America, there were clear differences in what people purchased. In general, there were two leading brands in each kind of packaged goods, but there were smaller brands that assumed a greater proportion of consumers' purchases than was statistically likely. One explanation for this is that 16% of people surveyed came from interstate, and these people preferred products from their home states. Over time, they did buy more products from their adopted state, but, surprisingly, it took two decades for their brand loyalty to halve. Even people who had moved interstate 50 years previously maintained a preference for home-state brands. It seems the habits of food buying change more slowly than we think.

F. Bronnenberg's findings were confirmed by Atkin's in India although there was something more unexpected that Atkin discovered. Firstly, during the period of his survey, the cost of all consumables rose considerably in India. As a result, families reduced their spending on food, and their caloric intake fell accordingly. It is also worth noting that although India is one country, states impose tariffs or taxes on products from other Indian states, ensuring that locally-produced goods remain cheaper. As in the US, internal migrants bought food from their native place even when it was considerably more expensive than local alternatives, and at a time when you might expect families to be economising. This element made the brand-loyalty theory even more convincing.

G. There is one downside to these findings. In relatively closed economies, such as India's, people develop tastes that they take with them wherever they go; in a more globalised economy, such as America's, what people eat may be more varied, but still dependent on early exposure to brands. Therefore, according to both researchers, more advertising may now be directed at minors since brand loyalty is established in childhood and lasts a lifetime. In a media-driven world where children are already bombarded with information, their parents may not consider it appropriate yet more advertising is hardly welcome.

H. For supermarkets, this means that wherever there are large communities of expatriates or immigrants, it is essential to calculate the demographics carefully in order to supply those shoppers with their favourite brands as in light of Atkin and Bronnenberg's research, advertising and price are not the sole motivating factors for purchase as was previously thought.

Questions 15-19

Instructions to follow

- Choose the correct letter A, B, C or D. Write the correct letter in boxes 15-19 on your answer sheet.

15 In this article, the writer refers to food products that are sold

A ○ at markets.
B ○ wholesale.
C ○ online.
D ○ retail.

16 In Sydney, shoppers can buy beer from

A ○ China and Indonesia.
B ○ India and South Africa.
C ○ Poland.
D ○ Vietnam.

17 The greater variety of goods and brands now available is mainly due to:

A ○ cheaper production and more migration.
B ○ changes in migration and international trade.
C ○ cheaper production and transport.
D ○ changes in migration and transport.

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18 The writer thinks supermarkets …… should change their products slightly.

A in Australia

B in India and the US

C in Switzerland

D worldwide

19 The writer suggests that:

A the quality of products at specialist shops will always be better than at supermarkets.

B specialist shops will close down because supermarkets will be cheaper.

C specialist shops already supply minority groups, so supermarkets shouldn't bother.

D specialist shops already supply minority groups, yet supermarkets should compete with them.

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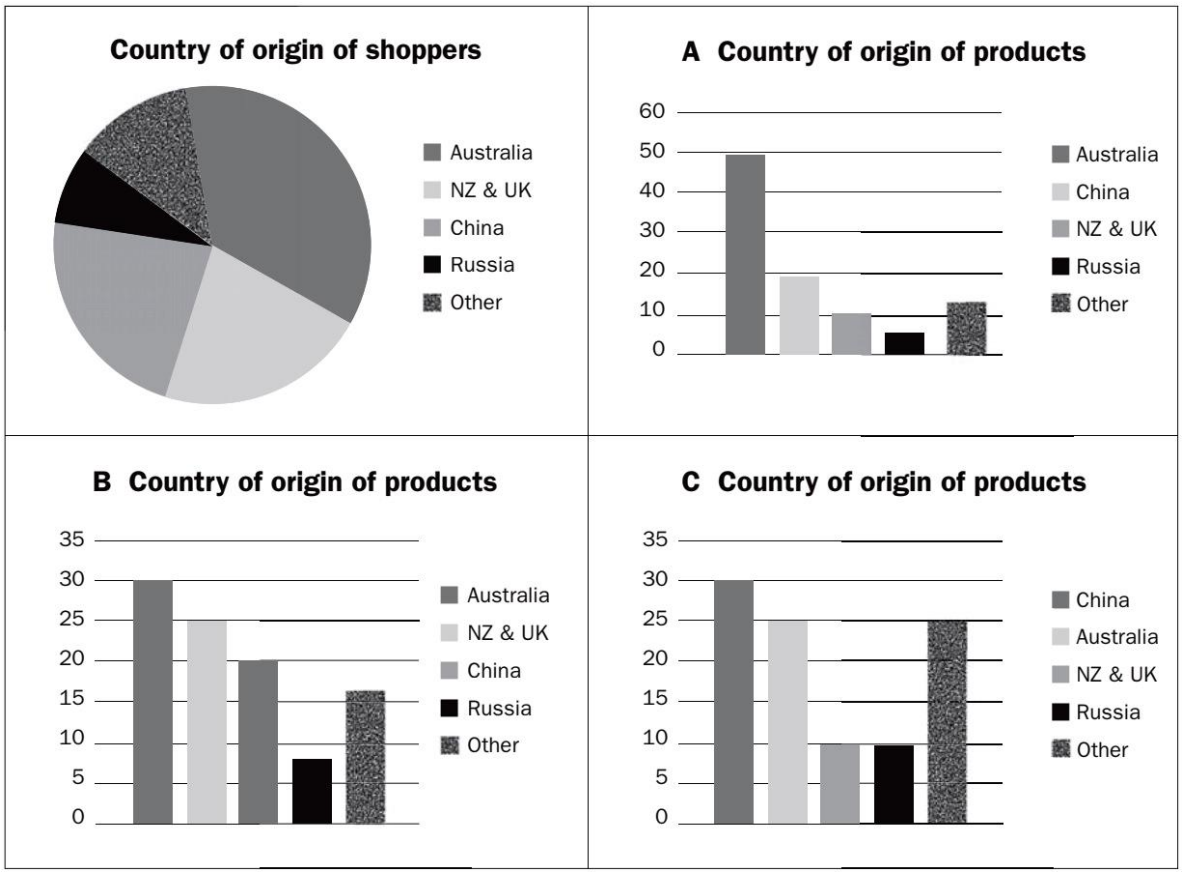
Question 20

Instructions to follow

- Write chart below – A, B or C – best describes the relationship between shoppers at one Sydney supermarket, and what research suggests that same supermarket should sell?
- Write your answer in box 20 on your answer sheet.



Questions 21-27

Instructions to follow

- Which study/studies do the following statements relate to? In boxes 21-27 on your answer sheet, write:

A if the information relates only to Atkin's study

B if the information relates only to Bronnenberg's study

C if the information relates to both Atkin's and Bronnenberg's studies

21 There was a correlation between brands a shopper used in childhood, and his or her preferences as an adult.

A ○ B ○ C ○

22 One reason for the popularity of smaller brands was that many people surveyed came from another state where those brands were bigger.

A ○ B ○ C ○

23 Even living in a new state for a very long time did not mean that shoppers chose new brands.

A ○ B ○ C ○

24 In general, food became more expensive during the time of the study. Despite this, families bought favourite brands and ate less.

A ○ B ○ C ○

25 Taxes on products from other states also increased the cost of food. This did not stop migrants from buying what they were used to.

A ○ B ○ C ○

26 Children may be the target of more food advertising now.

A ○ B ○ C ○

27 Advertising and price were once thought to be the main reasons for buying products. This theory has been modified now.

A ○ B ○ C ○

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Section 3

Instructions to follow

- You should spend 20 minutes on Questions 28-40 which are based on Reading Passage 3

Animal Personhood

A. Aristotle, a 4th-century-BC Greek philosopher, created the Great Chain of Being, in which animals, lacking reason, ranked below humans. The Frenchman, Rene Descartes, in the 17th century AD, considered animals as more complex creatures; however, without souls, they were mere automatons. One hundred years later, the German, Immanuel Kant, proposed animals are treated less cruelly, which might seem an improvement, but Kant believed this principally because he thought acts of cruelty affect their human perpetrators detrimentally. The mid-19th century saw the Englishman, Jeremy Bentham, questioning not their rationality or spirituality, but whether animals could suffer irrespective of the damage done to their victimisers; he concluded they could; and, in 1824, the first large organisation for animal welfare, the Royal Society for the Prevention of Cruelty to Animals, was founded in England. In 1977, the Australian, Peter Singer, wrote the highly influential book Animal liberation, in which he debated the ethics of meat-eating and factory farming, and raised awareness about inhumane captivity and experimentation. Singer's title deliberately evoked other liberation movements, like those for women, which had developed in the post-war period.

B. More recently, an interest in the cognitive abilities of animals has resurfaced. It has been known since the 1960s that chimpanzees have sophisticated tool use and social interactions, but research from the last two decades has revealed they are also capable

of empathy and grief, and they possess self-awareness and self-determination. Other primates, dolphins, whales, elephants, and African grey parrots are highly intelligent too. It would seem that with each new proof of animals' abilities, questions are being posed as to whether creatures so similar to humans should endure the physical pain or psychological trauma associated with habitat loss, captivity, or experimentation. While there may be more laws protecting animals than 30 years ago, in the eyes of the law, no matter how smart or sentient an animal may be, it still has a lesser status than a human being.

C. Steven Wise, an American legal academic, has been campaigning to change this. He believes animals, like those listed above, are autonomous - they can control their actions, or rather, their actions are not caused purely by reflex or from innateness. He wants these animals categorized legally as nonhuman persons because he believes existing animal-protection laws are weak and poorly enforced. He famously quipped that an aquarium may be fined for cruel treatment of its dolphins but, currently, the dolphins can't sue the aquarium.

D. While teaching at Vermont Law School in the 1990s, Wise presented his students with a dilemma: should an anencephalic baby be treated as a legal person? (Anencephaly is a condition where a person is born with a partial brain and can breathe and digest, due to reflex, but otherwise is barely alert, and not autonomous.) Overwhelmingly, Wise's students would say 'Yes'. He posed another question: could the same baby be killed and eaten by humans? Overwhelmingly, his students said 'No' His third question, always harder to answer, was: why is an anencephalic baby legally a person yet not so a fully functioning bonobo chimp?

E. Wise draws another analogy: between captive animals and slaves. Under slavery in England, a human was a chattel, and if a slave were stolen or injured, the thief or violator

could be convicted of a crime, and compensation paid to the slave's owner though not to the slave. It was only in 1772 that the chief justice of the King's Bench, Lord Mansfield, ruled that a slave could apply for habeas corpus, Latin for: '"You must have the body', as few men and women had done since ancient times. Habeas corpus does not establish innocence or guilt; rather, it means a detainee can be represented in court by a proxy. Once slaves had been granted habeas corpus, they existed as more than chattels within the legal system although it was another 61 years before slavery was abolished in England. Aside from slaves, Wise has studied numerous cases in which a writ of habeas corpus had been filed on behalf of those unable to appear in court, like children, patients, prisoners, or the severely intellectually impaired. In addition, Wise notes there are entities that are not living people that have legally become non-human persons, including ships, corporations, partnerships, states, a Sikh holy book, some Hindu idols and the 'Wanganui River in New Zealand.

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F. In conjunction with an organisation called the Non-human Rights Project (NhRP), Wise has been representing captive animals in US courts in an effort to have their legal status reassigned. Thereafter, the NhRP plans to apply, under habeas corpus, to represent the animals in other cases. Wise and the NhRP believe a new status will discourage animal owners or nation-states from neglect or abuse, which current laws fail to do. Richard Epstein, a professor of law at New York University, is a critic of Wise's. His concern is that if animals are treated as independent holders of rights there would be little left of human society, in particular, in the food and agricultural industries. Epstein agrees some current legislation concerning animal protection may need overhauling, but he sees no underlying problem.

G. Other detractors say that the push for personhood misses the point: it focuses on animals that are similar to humans without addressing the fundamental issue that all species have

an equal right to exist. Thomas Berry, of the Gaia Foundation, declares that rights do not emanate from humans but from the universe itself, and, as such, all species have the right to existence, habitat, and role (be that predator, plant, or decomposer). Dramatically changing human behaviour towards other species is necessary for their survival - and that doesn't mean declaring animals as non-human persons.

H. To date, the NhRP has not succeeded in its applications to have the legal status of chimpanzees in New York State changed, but the NhRP considers it some kind of victory that the cases have been heard. Now, the NhRP can proceed to the Court of Appeals, where many emotive cases are decided, and where much common law is formulated.

I. Despite setbacks, Wise doggedly continues to expose brutality towards animals. Thousands of years of perceptions may have to be changed in this process. He may have lost the battle, but he doesn't believe he's lost the war.

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Questions 28-33

Instructions to follow

- Choose the correct letter A, B, C or D.
- Write the correct letter in boxes 28-33 on your answer sheet.

28 Why did Aristotle place animals below human beings?

A He doubted they behaved rationally.

B He thought them less intelligent.

C He considered them physically weaker.

D He believed they did not have souls.

29 Why did Kant think humans should not treat animals cruelly?

A Animals were important in agriculture.

B Animals were used by the military.

C Animals experience pain in the same way humans do.

D Humans' exposure to cruelty was damaging to themselves.

30 What concept of animals did Bentham develop?

A The existence of their suffering

B The magnitude of their suffering

C Their surprising brutality

D Their surprising spirituality

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31 Where and when was the RSPCA founded?

A In Australia in 1977

B In England in 1824

C In Germany in 1977

D In the US in 1824

32 Why might Singer have chosen the title Animal Liberation for his book?

A He was a committed vegetarian.

B He was concerned about endangered species.

C He was comparing animals to other subjugated groups.

D He was defending animals against powerful lobby groups.

33 What has recent research shown about chimpanzees?

A ○ They have equal intelligence to dolphins.

B ○ They have superior cognitive abilities to most animals.

C ○ They are rapidly losing their natural habitat.

D ○ They are far better protected now than 30 years ago.

Questions 34-40

Instructions to follow

- Complete the summary below. Choose NO MORE THAN TWO WORDS from the passage for each answer.
- Write your answer in boxes 34-40 on your answer sheet.

A new legal status for animals	
Arguments for:	Steven Wise believes some highly intelligent animals that are 34..... should have a new legal status. While animals are not humans, the law has a status for 35..... already applied to ships, companies, and a river in New Zealand. If the legal status of animals were changed, Wise and the NhRP could file for 36....., where a detainee is represented by someone else. Then, they could take more effective action against animal abusers.
Arguments against	Richard Epstein believes the 37..... of animals is important, but if animals had rights, the cost to human society would be too great. Others, like Thomas Berry, argue that rights are bestowed by the universe

	and not by humans. Furthermore, 38..... species have an equal right to exist.
Current situation in US	Although the NhRP has not 39.....in having the legal status of any animals altered, it continues its struggle. Changing two millennia's worth of 40..... could prove difficult.

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IELTS Reading Test 2

Section 1

Instructions to follow

- You should spend 20 minutes on Questions 1-13 which are based on Reading Passage 1

Networking

Networking as a concept has acquired what is in all truth an unjustified air of modernity. It is considered in the corporate world as an essential tool for the modern businessperson, as they trot round the globe drumming up business for themselves or a corporation. The concept is worn like a badge of distinction, and not just in the business world.

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People can be divided basically into those who keep knowledge and their personal contacts to themselves, and those who are prepared to share what they know and indeed their friends with others. A person who is insecure, for example, someone who finds it difficult to share information with others and who is unable to bring people, including friends, together does not make a good networker. The classic networker is someone who is strong enough within themselves to connect different people including close friends with each other. For example, a businessman or an academic may meet someone who is likely to be a valuable contact in the future, but at the moment that person may benefit from meeting another associate or friend.

It takes quite a secure person to bring these people together and allow a relationship to develop independently of himself. From the non-networker's point of view, such a development may be intolerable, especially if it is happening outside their control. The

unfortunate thing here is that the initiator of the contact if he did but know it, would be the one to benefit most. And why?

Because all things being equal, people move within circles and that person has the potential of being sucked into ever-growing spheres of new contacts. It is said that, if you know eight people, you are in touch with everyone in the world. It does not take much common sense to realize the potential for any kind of venture as one is able to draw on the experience of more and more people.

Unfortunately, making new contacts, business or otherwise, while it brings success, does cause problems. It enlarges the individual's world. This is in truth not altogether a bad thing, but it puts more pressure on the networker through his having to maintain an ever-larger circle of people. The most convenient way out is, perhaps, to cull old contacts, but this would be anathema to our networker as it would defeat the whole purpose of networking. Another problem is the reaction of friends and associates. Spreading oneself thinly gives one less time for others who were perhaps closer to one in the past. In the workplace, this can cause tension with jealous colleagues, and even with superiors who might be tempted to rein in a more successful inferior. Jealousy and envy can prove to be very detrimental if one is faced with a very insecure manager, as this person may seek to stifle someone's career or even block it completely.

The answer here is to let one's superiors share in the glory; to throw them a few crumbs of comfort. It is called leadership from the bottom. In the present business climate, companies and enterprises need to co-operate with each other in order to expand. As globalization grows apace, companies need to be able to span not just countries but continents. Whilst people may rail against this development it is for the moment here to stay. Without cooperation and contacts, specialist companies will not survive for long.

Computer components, for example, need to be compatible with the various machines on the market and to achieve this, firms need to work in conjunction with others. No business or institution can afford to be an island in today's environment. In the not very distant past, it was possible for companies to go it alone, but it is now more difficult to do so.

The same applies in the academic world, where ideas have been jealously guarded. The opening-up of universities and colleges to the outside world in recent years has been of enormous benefit to industry and educational institutions. The stereotypical academic is one who moves in a rarefied atmosphere living a life of sometimes splendid isolation, a prisoner of their own genius. This sort of person does not fit easily into the mould of the modern networker. Yet even this insular world is changing. The ivory towers are being left ever more frequently as educational experts forge links with other bodies; sometimes to stunning effect as in Silicon Valley in America and around Cambridge in England, which now has one of the most concentrated clusters of high-tech companies in Europe.

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It is the networkers, the wheeler-dealers, the movers and shakers, call them what you will, that carry the world along. The world of the Neanderthals was shaken between 35,000 and 40,000 BC; they were superseded by Homo Sapiens with the very 'networking' skills that separate us from other animals: understanding thought abstraction and culture, which are inextricably linked to planning survival and productivity in humans. It is said the meek will inherit the earth. But will they?

Questions 1-5

Instructions to follow

- Do the following statements agree with the information given in Reading Passage 1? In boxes 1-5 on your answer sheet, write:
  YES if the statement agrees with the writer's claims
  NO if the statement contradicts the writer's claims
  NOT GIVEN if it is impossible to say what the writer thinks about this

Example	Answer
Networking is a concept	Yes

1. Networking is not a modern idea.
2. Networking is worn like a badge exclusively in the business world.
3. People fall into two basic categories.
4. A person who shares knowledge and friends makes a better networker than one who does not.
5. The classic networker is physically strong and generally in good health.

Questions 6-10

Instructions to follow

- Using NO MORE THAN THREE WORDS from the passage, complete the sentences below.

6. Making new acquaintances ..... but also has its disadvantages.
7. At work, problems can be caused if the manager is .....
8. A manager can suppress, or even totally ..... the career of an

employee.

9 In business today, working together is necessary in order for .....
to grow.

10 Businesses that specialize will not last for long without .....

Questions 11-13

Instructions to follow

- Using NO MORE THAN THREE WORDS from the passage, complete the sentences below.

11 In which sphere of life have ideas been protected jealously? .....

12 Which type of individual does not easily become a modern networker?
.....

13 Where is one of the greatest concentrations of high-tech companies in Europe?
.....

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Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-27, which are based on Reading Passage 2.

Money As The Unit Of Account

A. The most difficult aspect of money to understand is its function as a unit of account. In linear measurement we find the definition of a yard, or a metre, easy to accept. In former times these lengths were defined in terms of fine lines etched onto brass rods maintained in standard laboratories at constant temperatures. Money, however, is much more difficult to define because the value of anything is ultimately in the mind of the observer, and such values will change with time and circumstance.

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Sir Isaac Newton, as Master of the Royal Mint, defined the pound sterling (£) in 1717 as 113 grains of pure gold. This took Britain off silver and onto gold as defining the unit of account. The pound was 113 grains of pure gold, the shilling was 1/20 of that, and the penny 1/240 of it.

By the end of the 19th century, the gold standard had spread around most of the trading world, with the result that there was a single world money. It was called by different names in different countries, but all these supposedly different currencies were rigidly interconnected through their particular definition in terms of a quantity of gold.

B. In economic life the prices of different commodities and services are always changing with respect to each other. If the potato crop, for example, is ruined by frost or flood, then the

price of potatoes will go up. The consequences of that particular price increase will be complex and unpredictable. Because of the high price of potatoes, prices of other things will decline, as demand for them declines. Similarly, the argument that the Middle East crisis following the Iraqi annexation of Kuwait would, because of increased oil prices, have led to sustained general inflation is, although widely accepted, entirely without foundation. With sound money (money whose purchasing power does not decline over time) a sudden price shock in any one commodity will not lead to a general price increase, but to changes in relative prices throughout the economy. As oil increases, other goods and services will drop in price, and oil substitutes will rise in price, as the consequences of the oil price increase work their unpredictable and complex way through the economy.

The use of gold as the unit of account during the days of the gold standard meant that the price of all other commodities and services would swing up and down with reference to the price of gold, which was fixed. If gold supplies diminished, as they did when the 1850s gold rushes in California and Australia were finishing, then deflation (a general price level decrease] would set in. When new gold rushes followed in South Africa and again in Australia, in the 1880s and 1890s, the general price level increased, gently, around the world, as there was more money in circulation.

C. The end of the gold standard began with the introduction of the Bretton-Woods Agreement in 1946. This fixed the value of all world currencies relative to the US dollar, which in turn was fixed to a specific value of gold (US$0.35/oz). However, in 1971 the US government finally refused to exchange US dollars for gold, and other countries soon followed. Governments printed as much paper money or coinage as they wanted, and the more that was printed, the less each unit of currency was worth.

The key problem with these government 'fiat' currencies is that their value is not defined;

such value is subject to how much money a government cares to print. Their future value is unpredictable, depending as it does on political chance. In past economic calculations of the Australian Institute for Public Policy, incomes and expenditures were automatically converted to dollars of a particular year, using CPI deflators, which are stored in the Institute's computers. When the Institute performs economic calculations into the future, it guesses at inflation rates and includes these guesses in its figures. The guesses are entirely based on past experience. In Australia most current calculations assume a three to four per cent inflation rate.

D. The great advantage of the 19th century gold standard was not just that it defined the unit of account, but that it operated throughout almost the entire world. Anthony Trollope tells us in his diaries about his Australian travels in 1872 that a pound of meat, selling in Australia for twopence, would have cost tenpence or even a shilling in the UK. It was this price difference which drove investment and effort into the development of shipboard refrigeration, and opening up of major new markets for Australian meat, at great benefit to the British public.

Today we can determine price differences between countries by considering the exchange rate of the day. In twelve months' time, even a month's time, however, a totally different situation may prevail, and investments of time and money made on the basis of an opportunity at an exchange rate of the day, may actually perform poorly because of subsequent exchange rate movements.

The great advantage of having a single stable world currency is that such currency would have very high information content. It tells people where to invest their time, energy and capital, all around the world, with much greater accuracy and predictability than would otherwise be possible.

Questions 14-17

Instructions to follow

- Reading Passage 2 has four sections, A-D.
- Choose the correct heading for each section from the list of headings below.
- Write the correct number, i-vii, in boxes 14-17 on your answer sheet.

List of Headings

i The effects of inflation

ii The notion of money and its expression

iii The rise of problematic modern currencies

iv Stable money compared to modern 'fiat' currencies

v The function of money

vi The interrelationship of prices

vii Stability of modern currencies

14 ..... SECTION A

15 ..... SECTION B

16 ..... SECTION C

17 ..... SECTION D

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Questions 18-22

Instructions to follow

- Look at the following causes and the list of results below.
- Match each cause with the appropriate result.
- Write the correct letter, A-I, in boxes 18-22 on your answer sheet.

18 Oil prices rise. .....

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

19 The price of potatoes goes up. .....

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

20 Gold was the unit of account. .....

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

21 The amount of gold available went down. .....

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

22 Meat in Australia was cheaper than elsewhere. .....

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

List of Results

A The price of goods fluctuated in relation to a fixed gold price

B People developed techniques of transporting it to other places.

C Oil substitutes become more expensive

D More people went to live in Australia

E The price of other things goes down, because fewer people could afford to buy them

F The price of commodities remained fixed

G There is no observable effect.

H All prices went down,everywhere.

I Oil substitutes drop in price

Questions 23-27

Instructions to follow

- Write the appropriate letter, A, B, or C in boxes 23-27 on your answer sheet.
- Classify the following characteristics as belonging to

A Money based on a gold standard

B Government 'fiat' monopoly currencies

C Both money based on a gold standard and 'fiat' currencies

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23 it has a clearly defined value

A ○ B ○ C ○

24 its value by definition varies over time

A ○ B ○ C ○

25 its future value is predictable

A ○ B ○ C ○

26 its past value can be calculated

A ○ B ○ C ○

27 it makes international investment easier

A ○ B ○ C ○

Section 3

Instructions to follow

- You should spend 20 minutes on Questions 28-40 which are based on Reading Passage 3

Walking on water

The availability of groundwater has always been taken for granted by Australians. Groundwater supplies have in prior times been perceived as a resource of infinite bounds – the prevailing mindset was “out of sight out of mind”. This has all changed with the modern epoch. Persistent neglect has resulted in numerous complications for groundwater users and many interest groups have great stake in its management and allocation. Over-allocation of surface water and persistent water shortages mean that reliance of groundwater supplies is expected to swell.

The main point of concern now is whether or not a groundwater source can deliver a sustainable yield. This relies on a proper management of discharge (outflow) and recharge (inflow) rates. Discharge occurs when humans extract water as well as through vegetation and evaporation into the atmosphere. Sustainable use therefore depends on more than keeping within the recharge rate: if humans use water at precisely the recharge rate, discharge through other ways can be adversely affected.

Queensland has been one of the most active states in managing groundwater supplies. This is because the territory sits atop the Great Artesian Basin (GAB) an expansive underwater aquifer that covers nearly one-fifth of the Australian continent. This resource has long been used by indigenous people and outback communities, particularly in times

of drought (when surface water could dry up for hundreds of kilometres on end). Since farmers at Kerribee pioneered the use of bores in the country, the number has spiralled beyond sustainable levels and caused water pressure and flow rates across the region to decline. Furthermore, estimates indicate that 80% of GAB outflow is wasted because of inefficient and out-dated delivery systems. Open drains used to keep livestock hydrated are a particular scourge – much water is lost due to seepage and evaporation.

A number of initiatives have been undertaken to help stem this problem. The Queensland government declared in 2005 a moratorium on issuing new licences for water extraction from GAB. A strategy group known as the Great Artesian Basin Consultative Council has also published a management plan that involved capping some bores (to prevent further declines in pressure) and rehabilitating hundreds of other bores and bore drains with troughs and polyester piping (to prevent water seeping into the earth).

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It is now also apparent that corruption of groundwater supplies by humans is going to be an issue to contend with. In 2006, thousands of Sydney residents had their groundwater usage curtailed due to industrial pollution of the Botany Stands aquifer. Bore water for any domestic purposes has since been off limits due to chemical seepage from an estimated 8 industrial sites.

Nevertheless, groundwater plans continue apace. Development of a controversial desalination plant has been postponed indefinitely while the feasibility of exploiting two aquifers near Sydney is explored. Authorities intend to use the aquifers to provide up to 30 gigalitres of water a year during dry spells and then leave them alone to replenish during higher rainfall years. But the proposed scheme it riddled with difficulties: low flow rates are hampering extraction: replenishment rates are lower than expected, and salinity imbalances caused by the procedure could wreak havoc on efforts to preserve wetland

flora and fauna ecosystems that rely on a plentiful, clean and steady supply of water from the aquifers.

It is not too late to turn groundwater into a sustainable resource. Groundwater is renewable through surface runoff (and, at a much slower rate, in organic springs where it is literally drip fed through rock on its way to aquifers). At present however, experts believe excessive amounts of groundwater are being squandered on aesthetic projects such as keeping parks, gardens and golf courses green.

Aside from more judicious use of groundwater, many experts also believe that we need to look at harnessing other potential sources in order to meet our water needs. During rainy seasons for example urban areas are inundated with storm water and flash flooding that can bring cities to a standstill. Better storm water control mechanisms could potentially capture and preserve this rainwater for use at a later date.

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Questions 28-31

Instructions to follow

- Choose FOUR letter A-J. Write the correct letters A-J in boxes 28-31 on your answer sheet.
- The Writer mentions a number of uses of groundwater in Australia. Which FOUR of the following uses are mentioned by the writer of the test?

A maintaining recreational areas

B helping sewer systems function

C providing opportunities for underground adventure sports

D supporting wildlife habitats

E storing excess amounts of surface water in cities

F naturally removing salt content from water

G personal household use

H forming hot springs for bathing

I providing water for animals

J dumping toxic waste products

28 .....

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○ J ○

29 .....

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○ J ○

30 .....

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○ J ○

31 .....

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○ J ○

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Questions 32-35

Instructions to follow

- Do the following statements agree with the information given in the text? Write
  TRUE if the statement agrees with the information
  FALSE if the statement contradicts the information
  NOT GIVEN if there is no information on this

32 Australians have always seen groundwater as a precious resource.

33 Use of groundwater is predicted to increase.

34 Humans cannot alter the recharge rate of groundwater.

35 Using water at the recharge rate or lower will ensure sustainable use.

Questions 36-40

Instructions to follow

- Complete each sentence with the correct ending A-I below.

36 Outback communities

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○ J ○

37 Farmers at Kerribee station

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○ J ○

38 In 2005, Queensland authorities

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○ J ○

39 The Great Artesian Basin Consultative Committee

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○ J ○

40 Some residents in Sydney

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

J ○

A took action to stop more people from being able to use groundwater.

B released a plan to improve bores and lessen wasted water.

C used groundwater to create artificial rivers.

D began a formal register to control access to groundwater.

E decreased the amount of water in movement.

F used their bore holes to dispose of waste products.

H were prevented from using ground water due to contamination.

I relied on ground water during long periods of dry weather.

J were the first to use a bore in Australia.

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IELTS Reading Test 3

Section 1

Instructions to follow

- You should spend 20 minutes on Questions 1-13 which are based on Reading Passage 1

Preserving Britain's cultural heritage: to restore a legendary theatrical dress

An astonishingly intricate project is being undertaken to restore a legendary theatrical dress, Angela Wintle explains.

On December 28th, 1888, the curtain rose on a daring new stage revival of Shakespeare's Macbeth at the Lyceum Theatre in London. Topping the bill, playing Lady Macbeth, a main character in the play, was Ellen Terry. She was the greatest and most adored English actress of the age. But she didn't achieve this devotion through her acting ability alone, She knew the power of presentation and carefully cultivated her image. That first night was no exception. When she walked on stage for the famous banqueting scene, her appearance drew a collective gasp from the audience.

She was dressed in the most extraordinary clothes ever to have graced a British stage: a long, emerald and sea-green gown with tapering sleeves, surmounted by a velvet cloak, which glistened and sparkled eerily in the limelight. Yet this was no mere stage trickery. The effect had been achieved using hundreds of wings from beetles. The gown - later named the 'Beetlewing dress' became one of the most iconic and celebrated costumes of the age.

Terry was every bit as remarkable as her costumes. At 31, she became a leading lady at the Lyceum Theatre and for two decades, she set about bringing culture to the masses.

The productions she worked on were extravagant and daring. Shakespeare's plays were staged alongside blood-and-thunder melodramas and their texts were ruthlessly cut. Some people were critical, but they missed the point. The innovations sold tickets and brought new audiences to see masterpieces that they would never otherwise have seen.

However, it was a painter who immortalised her. John Singer Sargent had been so struck by Terry's appearance at that first performance that he asked her to model for him, and his famous portrait of 1889, now at the Tate Gallery in London, showed her with a glint in her eye, holding a crown over her flame-red hair. But while the painting remains almost as fresh as the day it was painted, the years have not been so kind to the dress. Its delicate structure, combined with the cumulative effects of time, has meant it is now in an extremely fragile condition. Thus, two years ago, a fundraising project was launched by Britain's National Trust[1] to pay for its conservation.

It turned to textile conservator Zenzie Tinker to do the job. Zenzie loves historical dress because of the link with the past. 'Working on costumes like the Beetlewing dress gives you a real sense of the people who wore them; you can see the sweat stains and wear marks. But it's quite unusual to know who actually wore a garment. That's the thing that makes the Beetlewing project so special.'

Before any of Zenzie's conservation work can begin, she and her team will conduct a thorough investigation to help determine what changes have been made to the dress and when. This will involve close examination of the dress for signs of damage and wear, and

will be aided by comparing it with John Singer Sargent's painting and contemporary photographs. Then Zenzie and the National Trust will decide how far back to take the reconstruction, as some members feel that even the most recent changes are now part of the history of the dress.

The first stages in the actual restoration will involve delicate surface cleaning, using a small vacuum suction device. Once the level of reconstruction has been determined, the original crocheted[2] overdress will be stitched onto a dyed net support before repairs begin. It's going to be extraordinarily difficult, because the original doth is quite stretchy, so we've deliberately chosen net because that has a certain amount of flexibility in it too,' says Zenzie. When the dress is displayed, none of our work will be noticeable, but we'll retain all the evidence on the reverse so that future experts will be able to see exactly what we've done - and I'll produce a detailed report.'

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Zenzie has estimated that the project, costing about £30,000, will require more than 700 hours' work. 'It will be a huge undertaking and I don't think the Trust has ever spent quite as much on a costume before,' she says. 'But this dress is unique. It's very unusual to see this level of workmanship on a theatrical costume, and it must have looked spectacular on stage.' If Terry was alive today, there's no doubt she would be delighted. Unlike many other actresses, she valued her costumes because she kept and reused them time and time again. 'I'd like to think she'd see our contribution as part of the ongoing history of the dress,' says Zenzie.

[1] A conservation organisation whose work includes the funding of projects designed to protect and preserve Britain's cultural heritage

[2] Produced using wool and a special needle with a hook at the end

Questions 1-6

Instructions to follow

- Choose the correct letter A, B, C or D.

1 What do you learn about Ellen Terry in the first paragraph?

A Lady Macbeth was her first leading role.

B The Lyceum was her favourite theatre.

C She tried hard to look good on stage.

D She wanted to look young for her audience.

2 What is the writer's purpose in paragraph 2?

A to describe different responses to the Beetlewing dress

B to explain why the Beetlewing dress had such a big impact

C to consider the suitability of the Beetlewing dress for the play

D to compare the look of the Beetlewing dress on and off the stage

3 According to the writer, the main effect of the Lyceum productions was to

A expose more people to Shakespeare's plays.

B reduce the interest in other types of production.

C raise the cost of going to the theatre.

D encourage writers to produce more plays.

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4 In the fourth paragraph, what comparison does the writer make between Sargent's portrait and the Beetlewing dress?

- A The dress has attracted more attention than the painting.
- B The dress is worth more money than the painting.
- C The painting took longer to produce.
- D The painting looks newer.

5 Zenzie says the Beetlewing project is particularly special because

- A the dress is very old.
- B people know who wore the dress.
- C the dress was designed by someone famous.
- D there is evidence that the dress has been used

6 Which of the following is the most suitable title for the passage?

- A A lesson from the past
- B A challenging task
- C An unusual fashion show
- D An unexpected discovery

Questions 7-10

Instructions to follow

- Do the following statements agree with the views of the writer in the reading passage? Write
  YES if the statement agrees with the views of the writer
  NO if the statement contradicts the views of the writer
  NOT GIVEN if it is impossible to say what the writer thinks about this

7 The National Trust conducted useful research to assist Zenzie's plans for the dress.

8 There will be some discussion over the changes that Zenzie's team should make to the dress.

9 Zenzie's estimate for the timing of the project is realistic.

10 Ellen Terry's attitude towards her dresses was typical of her time.

Questions 11-13

Instructions to follow

- Complete each sentence with the correct ending, A-F, below.

11 Pictures will be used

A ○ B ○ C ○ D ○ E ○ F ○

12 A special machine will be used

A ○ B ○ C ○ D ○ E ○ F ○

13 A net material has been selected

A ○ B ○ C ○ D ○ E ○ F ○

A	to show how the team did the repairs on the dress.
B	to reduce the time taken to repair the dress.
C	to remove the dirt from the top layer of the dress.
D	to demonstrate the quality of the team's work on the dress.
E	to match a quality of the original fabric used in the dress.
F	to help show where the dress needs repair work.

Section 2

Instructions to follow

- You should spend 20 minutes on Questions 14-26 which are based on Reading Passage 2

Recruitment (Why some women cross the finish line ahead of men)

The course is tougher but women are staying the distance, reports Andrew Crisp.

A. Women who apply for jobs in middle or senior management have a higher success rate than men, according to an employment survey. But of course, far fewer of them apply for these positions. The study, by recruitment consultants NB Selection, shows that while one in six men who appear on interview shortlists get jobs, the figure rises to one in four for women.

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B. The study concentrated on applications for management positions in the $45,000 to $110,000 salary range and found that women are more successful than men in both the private and public sectors Dr Elisabeth Marx from London-based NB Selection described the findings as encouraging for women, in that they send a positive message to them to apply for interesting management positions. But she added, “We should not lose sight of the fact that significantly fewer women apply for senior positions in comparison with men.”

C. Reasons for higher success rates among women are difficult to isolate. One explanation suggested is that if a woman candidate manages to get on a shortlist, then she has probably already proved herself to be an exceptional candidate. Dr. Marx said that when

women apply for positions, they tend to be better qualified than their male counterparts but are more selective and conservative in their job search. Women tend to research thoroughly before applying for positions or attending interviews. Men, on the other hand, seem to rely on their ability to sell themselves and to convince employers that any shortcomings they have will not prevent them from doing a good job.

D. Managerial and executive progress made by women is confirmed by the annual survey of boards of directors carried out by Korn/Ferry/Carre/ Orban International. This year the survey shows a doubling of the number of women serving as non-executive directors compared with the previous year. However, progress remains painfully slow and there were still only 18 posts filled by women out of a total of 354 nonexecutive positions surveyed. Hilary Sears, a partner with Korn/Ferry, said, "Women have raised the level of grades we are employed in but we have still not broken through barriers to the top."

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E. In Europe a recent feature of corporate life in the recession has been the delayering of management structures. Sears said that this has halted progress for women in as much as de-layering has taken place either where women are working or in layers they aspire to. Sears also noted a positive trend from the recession, which has been the growing number of women who have started up on their own.

F. In business as a whole, there are a number of factors encouraging the prospect of greater equality in the workforce. Demographic trends suggest that the number of women going into employment is steadily increasing. In addition, a far greater number of women are now passing through higher education, making them better qualified to move into management positions.

G. Organisations such as the European Women's Management Development Network

provide a range of opportunities for women to enhance their skills and contacts. Through a series of both pan-European and national workshops and conferences the barriers to women in employment are being broken down. However, Ariane Berthoin Antal, director of the International Institute for Organisational Change of Archamps in France, said that there is only anecdotal evidence of changes in recruitment patterns. And she said, 'It's still so hard for women to even get on to shortlists -there are so many hurdles and barriers.' Antal agreed that there have been some positive signs but said "Until there is a belief among employers until they value the difference, nothing will change."

Questions 14-19

Instructions to follow

- Reading passage 2 has 7 paragraphs (A-G). State which paragraph discusses each of the points below.
- Write the appropriate letter (A-G) in boxes 14-19 on your answer sheet.

Example	Answer
The salary range studied in the select survey.	B

14 The drawbacks of current company restructuring patterns.

A ○ B ○ C ○ D ○ E ○ F ○ G ○

15 Associations that provide support for professional women.

A ○ B ○ C ○ D ○ E ○ F ○ G ○

16 The success rate of female job applicants for management positions.

A ○ B ○ C ○ D ○ E ○ F ○ G ○

17 Male and female approaches to job applications.

A ○ B ○ C ○ D ○ E ○ F ○ G ○

18 Reasons why more women are being employed in the business sector.

A ○ B ○ C ○ D ○ E ○ F ○ G ○

19 The improvement in female numbers on company management structure.

A ○ B ○ C ○ D ○ E ○ F ○ G ○

Questions 20-23

Instructions to follow

- The author makes references to three consultants in the Reading Passage.
- Which of the list of points below do these consultants make? In boxes 20-23 write

M if the point is made by Dr Marx

S if the point is made by Hilary Sears

A if the point is made by Ariane Berthoin Antal

20 Selection procedures do not favour women.

M ○ S ○ A ○

21 The number of female-run businesses is increasing.

M ○ S ○ A ○

22 Male applicants exceed female applicants for top posts.

M ○ S ○ A ○

23 Women hold higher positions now than they used to.

M ○ S ○ A ○

Questions 24-26

Instructions to follow

- Using NO MORE THAN THREE WORDS answer the following questions.
- Write your answers in boxes 24-26 on your answer sheet.

24 What change has there been in the number of women in top management positions detailed in the annual survey?

25 What aspect of company structuring has disadvantaged women?

26 What information tells us that more women are working nowadays?

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Section 3

Instructions to follow

- You should spend 20 minutes on Questions 27-40 which are based on Reading Passage 3

Nature Works For PLA

A. A dozen years ago, scientists at Cargill got the idea of converting lactic acid made from corn into plastic while examining possible new uses for materials produced from corn wet milling processes. In the past, several efforts had been made to develop plastics from lactic acid, but with limited success. Achieving this technological breakthrough didn't come easily, but in time the efforts did succeed. A fermentation and distillation process using com was designed to create a polymer suitable for a broad variety of applications.

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B. As an agricultural-based firm, Cargill had taken this product as far as it could by 1997. The company needed a partner with access to plastics markets and polymerization capabilities and began discussions with The Dow Chemical Company. The next step was the formation of the joint venture that created Cargill Dow LLC. Cargill Dow's product is the world's first commercially available plastic made from annually renewable resources such as com:

Nature Works™ PLA is a family of packaging polymers (carbon-based molecules) made from non-petroleum-based resources. Ingeo is a family of polymers for fibers made in a similar manner.

C. By applying their unique technology to the processing of natural plant sugars, Cargill Dow has created a more environmentally friendly material that reaches the consumer in clothes, cups, packaging and other products. While Cargill Dow is a stand-alone business,

it continues to leverage the agricultural processing, manufacturing and polymer expertise of the two parent companies in order to bring the best possible products to market.

D. The basic raw materials for PLA are carbon dioxide and water. Growing plants, like com, take these building blocks from the atmosphere and the soil. They are combined in the plant to make carbohydrates (sucrose and starch) through a process driven by photosynthesis. The process for making Nature Works PLA begins when a renewable resource such as corn is milled, separating starch from the raw material. Unrefined dextrose, in turn, is processed from the starch.

E. Cargill Dow turns the unrefined dextrose into lactic acid using a fermentation process similar to that used by beer and wine producers. This is the same lactic acid that is used as a food additive and is found in muscle tissue in the human body. Through a special condensation process, a lactide is formed. This lactide is purified through vacuum distillation and becomes a polymer (the base for NatureWorks PLA) that is ready for use through a solvent-free melt process. Development of this new technology allows the company to “harvest” the carbon that living plants remove from the air through photosynthesis. Carbon is stored in plant starches, which can be broken down into natural plant sugars. The carbon and other elements in these natural sugars are then used to make NatureWorks PLA.

F. Nature Works PLA fits all disposal systems and is fully compostable in commercial composting facilities. With the proper infrastructure, products made from this polymer can be recycled back to a monomer and re-used as a polymer. Thus, at the end of its life cycle, a product made from Nature Works PLA can be broken down into its simplest parts so that no sign of it remains.

G. PLA is now actively competing with traditional materials in packaging and fiber applications throughout the world; based on the technology's success and promise, Cargill Dow is quickly becoming a premier player in the polymers market. This new polymer now competes for head-on with petroleum-based materials like polyester. A wide range of products that vary in molecular weight and crystallinity can be produced, and the blend of physical properties of PLA makes it suited for a broad range of fiber and packaging applications. Fiber and non-woven applications include clothing, fiberfill, blankets and wipes. Packaging applications include packaging films and food and beverage containers.

H. As Nature Works PLA polymers are more oil- and grease-resistant and provide a better flavor and aroma barrier than existing petroleum-based polymers, grocery retailers are increasingly using this packaging for their fresh foods. As companies begin to explore this family of polymers, more potential applications are being identified. For example, PLA possess two properties that are particularly useful for drape fabrics and window furnishings. Their resistance to ultraviolet light is particularly appealing as this reduces the amount of fading in such fabrics, and their refractive index is low, which means fabrics constructed from these polymers can be made with deep colors without requiring large amounts of dye. In addition, sportswear makers have been drawn to the product as it has an inherent ability to take moisture away from the skin and when blended with cotton and wool, the result is garments that are lighter and better at absorbing moisture.

I. PLA combines inexpensive large-scale fermentation with chemical processing to produce a value-added polymer product that improves the environment as well. The source material for PLA is a natural sugar found in plants such as com and using such renewable feedstock presents several environmental benefits. As an alternative to traditional petroleum-based polymers, the production of PLA uses 20%-50% less fossil fuel and

releases a lower amount of greenhouse gasses than comparable petroleum-based plastic; carbon dioxide in the atmosphere is removed when the feedstock is grown and is returned to the earth when the polymer is degraded. Because the company is using raw materials that can be regenerated year after year, it is both cost-competitive and environmentally responsible.

Questions 27-30

Instructions to follow

- Write the letter A-F in boxes 27-30 on your answer sheet.

27 scientists manage to

A ○ B ○ C ○ D ○ E ○ F ○

28 Cargill needs to have contacts with

A ○ B ○ C ○ D ○ E ○ F ○

29 Nature work is used for

A ○ B ○ C ○ D ○ E ○ F ○

30 Ingeo is used to

A ○ B ○ C ○ D ○ E ○ F ○

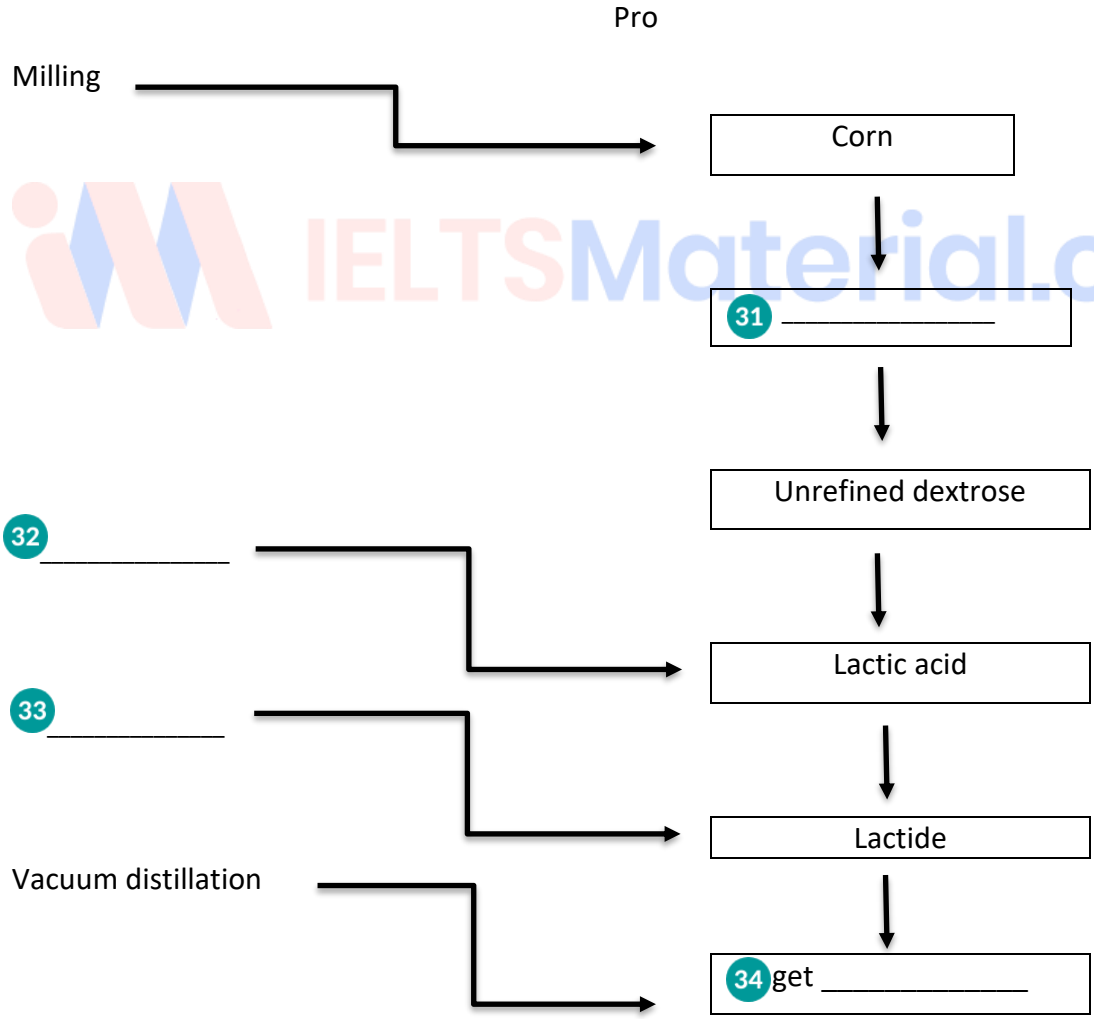
A make things like clothes
B produce plastic from plant
C selling plastic in market
D fermentation process
E drape fabrics
F wrapping products

Questions 31-34

Instructions to follow

- Complete the following summary of the paragraphs of Reading Passage.
- Write NO MORE THAN TWO WORDS from the Reading Passage for each answer.
- Write your answer in boxes 31-34 on your answer sheet.

Process: The Production of PLA



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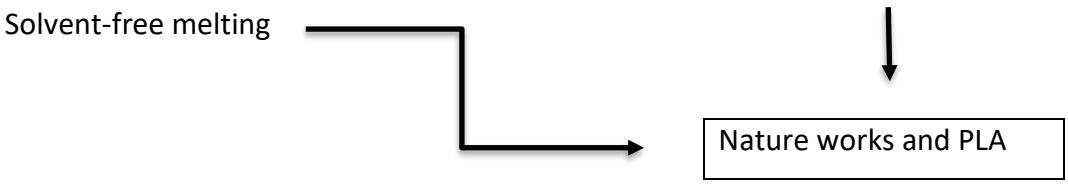

Questions 35-36

Instructions to follow

- Choose the correct letter, A, B, C or D.
- Write your answers in boxes 35-36 on your answer sheet.

35 Why choose the PLA as a material for food packaging?

A It smells good
B It can save food freshness
C It can be used on other materials
D Some other things need to be revised about it.

36 What is PLA packaging is used for?

A absorbing moisture
B composting facilities
C Packaging fresh food
D manufacturing

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Questions 37-38

Instructions to follow

- Which two features of PLA are correct?

A ◯ It takes in moisture of skin
B ◯ It is waterproof
C ◯ comfortable sportswear
D ◯ It's fading under the sun
E ◯ It is only made in deep color

Questions 39-40

Instructions to follow

- Which two features of PLA are correct?

A ◯ It is made of renewable raw materials
B ◯ It involves the removal of carbon dioxide
C ◯ It is no use of fossil fuel product
D ◯ It uses renewable raw resources
E ◯ It is sustenance which can absorb the CO2 in the atmosphere

IELTS Reading Test 4

Section 1

Instructions to follow

- You should spend 20 minutes on Questions 1-13 which are based on Reading Passage 1

Bondi Beach

A. Bondi Beach, Australia's most famous beach, is located in the suburb of Bondi, in the Local Government Area of Waverley, seven kilometers from the centre of Sydney. "Bondi" or "Boondi" is an Aboriginal word meaning water breaking over rocks or the sound of breaking waves. The Australian Museum records that Bondi means a place where a flight of nullas took place. There are Aboriginal Rock carvings on the northern end of the beach at Ben Buckler and south of Bondi Beach near McKenzies Beach on the coastal walk.

B. The indigenous people of the area at the time of European settlement have generally been welcomed as the Sydney people or the Eora (Eora means "the people"). One theory describes the Eora as a sub-group of the Darug language group which occupied the Cumberland Plain west to the Blue Mountains. However, another theory suggests that they were a distinct language group of their own. There is no clear evidence for the name or names of the particular band(s) of the Eora that roamed what is now the Waverley area. A number of place names within Waverley, most famously Bondi, have been based on words derived from Aboriginal languages of the Sydney region.

C. From the mid-1800s Bondi Beach was a favourite location for family outings and picnics.

The beginnings of the suburb go back to 1809, when the early road builder, William Roberts, received from Governor Bligh a grant of 81 hectares of what is now most of the business and residential area of Bondi Beach. In 1851, Edward Smith Hall and Francis O'Brien purchased 200 acres of the Bondi area that embraced almost the whole frontage of Bondi Beach, and it was named the "The Bondi Estate." Between 1855 and 1877 O'Brien purchased Hall's share of the land, renamed the land the "O'Brien Estate," and made the beach and the surrounding land available to the public as a picnic ground and amusement resort. As the beach became increasingly popular, O'Brien threatened to stop public beach access. However, the Municipal Council believed that the Government needed to intervene to make the beach a public reserve.

D. During the 1900s beach became associated with health, leisure and democracy – a playground everyone could enjoy equally. Bondi Beach was a working-class suburb throughout most of the twentieth century with migrant people from New Zealand comprising the majority of the local population. The first tramway reached the beach in 1884. Following this, the tram became the first public transportation in Bondi. As an alternative, this action changed the rule that only rich people can enjoy the beach. By the 1930s Bondi was drawing not only local visitors but also people from elsewhere in Australia and overseas. Advertising at the time referred to Bondi Beach as the "Playground of the Pacific".

E. There is a growing trend that people prefer having to relax near the seaside instead of living unhealthily in cities. The increasing popularity of sea bathing during the late 1800s and early 1900s raised concerns about public safety and how to prevent people from drowning. In response, the world's first formally documented surf lifesaving club, the Bondi Surf Bathers' Life Saving Club, was formed in 1907. This was powerfully reinforced by the dramatic events of "Black Sunday" at Bondi in 1938. Some 35,000 people were on

the beach and a large group of lifesavers were about to start a surf race when three freak waves hit the beach, sweeping hundreds of people out to sea. Lifesavers rescued 300 people. The largest mass rescue in the history of surf bathing, it confirmed the place of the lifesaver in the national imagination.

F. Bondi Beach is the endpoint of the City to Surf Fun Run which is held each year in August. Australian surf carnivals further instilled this image. A Royal Surf Carnival was held at Bondi Beach for Queen Elizabeth II during her first visit to Australia in 1954. Since 1867, there have been over fifty visits by a member of the British Royal Family to Australia. In addition to many activities, the Bondi Beach Markets are open every Sunday. Many wealthy people spend Christmas Day at the beach. However, the shortage of houses occurs when lots of people are crushed to the seaside. Manly is the seashore town which solved this problem. However, people still choose Bondi as the satisfied destination rather than Manly.

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G. Bondi Beach has a commercial area along Campbell Parade and adjacent side streets, featuring many popular cafes, restaurants, and hotels, with views of the contemporary beach. It is depicted as wholly modern and European. In the last decade, Bondi Beaches' unique position has seen a dramatic rise in svelte houses and apartments to take advantage of the views and scent of the sea. The valley running down to the beach is famous world-over for its view of distinctive red-tiled roofs. Those architectures are deeply influenced by British coastal town.

H. Bondi Beach hosted the beach volleyball competition at the 2000 Summer Olympics. A temporary 10,000-seat stadium, a much smaller stadium, 2 warm-up courts, and 3 training courts were set up to host the tournament. The Bondi Beach Volleyball Stadium was constructed for it and stood for just six weeks. Campaigners oppose both the social

and environmental consequences of the development. The stadium will divide the beach in two and seriously restrict public access for swimming, walking, and other forms of outdoor recreation. People protest for their human rights of having a pure seaside and argue for healthy life in Bondi.

I. "They're prepared to risk lives and risk the Bondi beach environment for the sake of eight days of volleyball", said Stephen Uniacke, a construction lawyer involved in the campaign. Other environmental concerns include the possibility that soil dredged up from below the sand will acidify when brought to the surface.

Questions 1-5

Instructions to follow

- Do the following statements agree with the information given in Reading Passage? In boxes 1-5 on your answer sheet, write

TRUE	if the statement agrees with the information
FALSE	if the statement contradicts with the information
NOT GIVEN	if there is no information on this

1. The name of the Bondi beach is first called by the British settlers.
2. The aboriginal culture in Australia is different when compared with European culture.
3. Bondi beach area holds many contemporary hotels
4. The seaside town in Bondi is affected by British culture for its characteristic red color
5. Living near Bondi seashore is not beneficial for health.

Questions 6-9

Instructions to follow

- Answer the question below using NO MORE THAN TWO WORDS AND/OR NUMBERS from the passage for each answer.
- Write your answers in boxes 6-9 on your answer sheet.

6 At the end of the 19th century, which public transport did people use to go to Bondi?

7 When did the British Royalty first visit Bondi?

8 Which Olympic event did Bondi hold in the 2000 Sydney Olympic games?

9 What would be damaged if the stadium was built for that Olympic event?

Questions 10-13

Instructions to follow

- Complete the following summary of the paragraphs of Reading Passage, using NO MORE THAN TWO WORDS from the Reading Passage for each answer.
- Write your answers in boxes 10-13 on your answer sheet.

Summary:

Bondi beach holds the feature sports activities every year, which attracts lots of 10 ..... Choosing to live at this place during the holidays. But local accommodation cannot meet with the expanding population, a nearby town of 11 ..... is the first suburb site to support the solution, yet people prefer 12 ..... as their best choice. Its seaside buildings are well-known in the world for the special scenic colored 13 ..... on buildings and the joyful smell from the sea.

Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26 which are based on Reading Passage 2.

Back To The Future Of Skyscraper Design

Answers to the problem of excessive electricity use by skyscrapers and large public buildings can be found in ingenious but forgotten architectural designs of the 19th and early-20th centuries

A. The Recovery of Natural Environments in Architecture by Professor Alan Short is the culmination of 30 years of research and award-winning green building design by Short and colleagues in Architecture, Engineering, Applied Maths and Earth Sciences at the University of Cambridge.

'The crisis in building design is already here,' said Short. 'Policy makers think you can solve energy and building problems with gadgets. You can't. As global temperatures continue to rise, we are going to continue to squander more and more energy on keeping our buildings mechanically cool until we have run out of capacity.'

B. Short is calling for a sweeping reinvention of how skyscrapers and major public buildings are designed – to end the reliance on sealed buildings which exist solely via the 'life support' system of vast air conditioning units.

Instead, he shows it is entirely possible to accommodate natural ventilation and cooling in large buildings by looking into the past, before the widespread introduction of air

conditioning systems, which were 'relentlessly and aggressively marketed' by their inventors.

C. Short points out that to make most contemporary buildings habitable, they have to be sealed and air conditioned. The energy use and carbon emissions this generates is spectacular and largely unnecessary. Buildings in the West account for 40-50% of electricity usage, generating substantial carbon emissions, and the rest of the world is catching up at a frightening rate. Short regards glass, steel and air-conditioned skyscrapers as symbols of status, rather than practical ways of meeting our requirements.

D. Short's book highlights a developing and sophisticated art and science of ventilating buildings through the 19th and earlier-20th centuries, including the design of ingeniously ventilated hospitals. Of particular interest were those built to the designs of John Shaw Billings, including the first Johns Hopkins Hospital in the US city of Baltimore (1873-1889).

'We spent three years digitally modelling Billings' final designs,' says Short. 'We put pathogens* in the airstreams, modelled for someone with tuberculosis (TB) coughing in the wards and we found the ventilation systems in the room would have kept other patients safe from harm.

————-

* Pathogens: microorganisms that can cause disease

E. 'We discovered that 19th-century hospital wards could generate up to 24 air changes an hour – that's similar to the performance of a modern-day, computer-controlled operating theatre. We believe you could build wards based on these principles now.

Single rooms are not appropriate for all patients. Communal wards appropriate for certain patients – older people with dementia, for example – would work just as well in today's

hospitals, at a fraction of the energy cost.' Professor Short contends the mindset and skill-sets behind these designs have been completely lost, lamenting the disappearance of expertly designed theatres, opera houses, and other buildings where up to half the volume of the building was given over to ensuring everyone got fresh air.

F. Much of the ingenuity present in 19th-century hospital and building design was driven by a panicked public clamouring for buildings that could protect against what was thought to be the lethal threat of miasmas – toxic air that spread disease. Miasmas were feared as the principal agents of disease and epidemics for centuries, and were used to explain the spread of infection from the Middle Ages right through to the cholera outbreaks in London and Paris during the 1850s. Foul air, rather than germs, was believed to be the main driver of 'hospital fever', leading to disease and frequent death. The prosperous steered clear of hospitals.

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While miasma theory has been long since disproved, Short has for the last 30 years advocated a return to some of the building design principles produced in its wake.

G. Today, huge amounts of a building's space and construction cost are given over to air conditioning. 'But I have designed and built a series of buildings over the past three decades which have tried to reinvent some of these ideas and then measure what happens.

'To go forward into our new low-energy, low-carbon future, we would be well advised to look back at design before our high-energy, high-carbon present appeared. What is surprising is what a rich legacy we have abandoned.'

H. Successful examples of Short's approach include the Queen's Building at De Montfort

University in Leicester. Containing as many as 2,000 staff and students, the entire building is naturally ventilated, passively cooled and naturally lit, including the two largest auditoriums, each seating more than 150 people. The award-winning building uses a fraction of the electricity of comparable buildings in the UK.

Short contends that glass skyscrapers in London and around the world will become a liability over the next 20 or 30 years if climate modelling predictions and energy price rises come to pass as expected.

I. He is convinced that sufficiently cooled skyscrapers using the natural environment can be produced in almost any climate. He and his team have worked on hybrid buildings in the harsh climates of Beijing and Chicago – built with natural ventilation assisted by back-up air conditioning – which, surprisingly perhaps, can be switched off more than half the time on milder days and during the spring and autumn.

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Short looks at how we might reimagine the cities, offices and homes of the future. Maybe it's time we changed our outlook.

Questions 14-19

Instructions to follow

- Reading Passage 2 has nine section, A-I. Which section contains the following information?
- Write the correct letter, A-I, in boxes 14-19 on your answer sheet.

14 why some people avoided hospitals in the 19th century

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

15 a suggestion that the popularity of tall buildings is linked to prestige

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

16 a comparison between the circulation of air in a 19th-century building and modern standards

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

17 how Short tested the circulation of air in a 19th-century building

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

18 an implication that advertising led to the large increase in the use of air conditioning

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

19 The building design crisis has already arrived.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

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Questions 20-27

Instructions to follow

- Complete the summary below. Choose ONE WORD ONLY from the passage for each answer.
- Write your answers in boxes 20-27 on your answer sheet.

Ventilation in 19th-century hospital wards

Professor Alan Short examined the work of John Shaw Billings, who influenced the architectural 20 ..... of hospitals to ensure they had good ventilation. He calculated that 21 ..... in the air coming from patients suffering from 22 ..... would not have harmed other patients. He also found that the air in 23 ..... in hospitals could change as often as in a modern operating theatre. He suggests that energy use could be reduced by locating more patients in 24 ..... areas.

A major reason for improving ventilation in 19th-century hospitals was the demand from the 25 ..... for protection against bad air, known as 26 ..... These were blamed for the spread of disease for hundreds of years, including epidemics of 27 ..... in London and Paris in the middle of the 19th century.

Section 3

Instructions to follow

- You should spend 20 minutes on Questions 28-40 which are based on Reading Passage 3

Much Ado About Almost Nothing

A. "The time for discussion of the rights and wrongs of GM crops has passed. Intense and consistent economic sabotage and intimidation are what will make the commercialisation of GM crops an unattractive option."

B. Words like these, from an article in the current edition of Earth First!, a radical environmental journal, send shivers down the spines of those involved in commercialising biotechnology. The strength of public disapproval of genetically modified organisms (GMOs) was a shock and a surprise to most of those involved. Now, some people are wondering whether nanotechnology – a term that covers the manipulation of matter at scales of a millionth of a millimetre – could be in for similar treatment and, if so, whether there are lessons that its protagonists can learn from the public backlash against biotechnology.

C. Profit of doom

In a neglected corner, amid thousands of participants at a Nanotech conference held in Boston last week, Jeffrey Matsuura, a law professor at the University of Dayton, in Ohio, stood next to his unprepossessing poster of his work. His warning, however, was pertinent to everyone there – especially the investors who were scouring the conference for opportunities. And this is that several of the factors that created a public backlash against

biotechnology are already at work within nanotechnology. Dr. Matsuura says that biotechnologists assumed that the public would quickly recognise and appreciate biotech's potential for improving the quality of life. Instead, the risks captured the attention of the media and much of the general public. Well-fed European consumers met the suggestion of cheaper food, in particular, with scepticism. Many felt that the gains would accrue to the companies which had developed GMOs, while the risks of growing and consuming the crops would be taken on by the public.

D. Dr. Matsuura believes that public perception of nanotechnology is developing along a similar track. Like those of biotechnology, the first applications of nanotechnology will bring little obvious benefit to consumers. Better, cheaper materials, and hidden manufacturing efficiencies that benefit producers first, are redolent of the 'advantages' of biotech – namely reduced applications of agricultural chemicals, which help to keep the cost down while raising yields. Obvious consumer benefits, such as improvements in medicine, are further away.

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E. This should not matter – consumers do benefit eventually, even from cost savings. And yet, in alliance with a feeling that there are hazards involved, an absence of immediate benefits could turn public opinion against nanotech quite rapidly. And potential hazards there are. Concerns over out-of-control, self- replicating 'nanobots' that would eventually consume and transform the entire planet into a 'grey goo' are absurd. And yet, it is true that novel 'nanoparticles' might have real toxicological risks.

F. Nanoparticles are so small that, if inhaled, they could become lodged in the lungs. In theory, they are small enough to enter living cells and accumulate there. And in January Ken Donaldson, a professor of respiratory toxicology at the University of Edinburgh, told a Royal Institution seminar in London that, once inhaled, ultrafine carbon particles can

move to the brain and blood.

G. There are already several products that use nanoparticles already on the market, such as sunscreen and car parts. Though all this may sound alarming, people are already exposed to nanoparticles of many different kinds, and have been throughout history. Soot, for example, is composed of carbon nanoparticles. Nevertheless, nanoparticles from sources such as diesel soot, welding fumes and photocopier toner are already associated with ill-health. The prospect of more such particles is likely to worry many. No wonder that several people at the conference in Boston mentioned the need to address public fears over nanotechnology "aggressively"

H. One of these was Clayton Teague, the director of America's National Nanotechnology Co-ordination Office. He says the American government is as sensitive to any indication of true health risk as any member of the public. Several large and well-funded studies on the environmental and health risks of nanotechnology are now under way.

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I. Dr. Teague adds that any decisions about nanotechnology will be made carefully and based on solid scientific data. But even if science gives the go-ahead, another one of Dr. Matsuura's lessons is that this might not necessarily win the day, and that fear over potential abuses and accidents may dominate the debate.

J. One piece of advice Dr. Matsuura gives is that everyone involved should have a consistent message. If investors are told a technology will change the world, someone who is concerned about the risks cannot then be told that the same technology is no big deal. It strikes a false note to say that something can be both revolutionary and nothing to worry about, he says. Such inconsistencies will breed public mistrust and fear.

K. Product placement

Donald Reed is a senior consultant with Ecos,a business-advisory firm based in Sydney, Australia, that acts as an intermediary between corporations and activists. Mr. Reed goes as far as to recommend that companies think about the early products they choose to pursue – in particular, whether they can demonstrate the "societal value" of these products. For example, it might be worth emphasising that one of the early products of nanotechnology could be cheap and efficient photovoltaic materials, which are used to generate electricity from sunlight.

Questions 28-31

Instructions to follow

- Look at the following people and the list of statements below. Match each person with the correct statement.

28 Clayton Teague

A ○ B ○ C ○ D ○ E ○ F ○ G ○

29 Ken Donaldson

A ○ B ○ C ○ D ○ E ○ F ○ G ○

30 Donald Reed

A ○ B ○ C ○ D ○ E ○ F ○ G ○

31 Jeffrey Matsuura

A ○ B ○ C ○ D ○ E ○ F ○ G ○

List of Statements

A Nanotechnology is being affected by factors that created opposition to biotechnology.

B Europeans have the most to gain from nanotechnology development.

C Sound scientific data will be the basis of any decisions about nanotechnology.

D Governments cannot shape the development of nanotechnology.

E Nanotechnology is not a cause for concern.

F Carbon nanoparticles can be breathed in and then move to the brain and blood.

G Companies should show how their early nanotechnology products can benefit society.

Questions 32-35

Instructions to follow

- Complete the sentences. Choose NO MORE THAN THREE WORDS from the passage for each answer.

32 Strong public disapproval of……..came as a shock to those working in the area.

33 Europeans reacted to the suggestion of cheaper food with……

34 Anxiety about 'nanobots' that would in time change the planet is…….

35 Nanoparticles from photocopier toner are already linked to……..

Questions 36-40

Instructions to follow

- Complete the summary using the list of words A-L below. Write your answers in boxes 36-40 on your answer sheet.

Some people believe that nanotechnology could face a 36.....fate to biotechnology. Rather than welcoming the 37....., the media and much of the general public focused their attention on the 38..... of biotechnology. So it is important to emphasize the immediate 39..... of nanotechnology; otherwise, the public could adopt a negative 40.....towards nanotech. It is therefore important for everyone involved to be consistent.

A	worse
B	greater
C	devices
D	partides
E	costs
F	latter
G	dangers
H	thoughts
I	advantages
J	former
K	attitude
L	comparable

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IELTS Reading Test 5

Section 1

Instructions to follow

- You should spend 20 minutes on Questions 1-13 which are based on Reading Passage 1

William Henry Perkin

The man who invented synthetic dyes.

A. William Henry Perkin was born on March 12,1838, in London, England. As a boy, Perkin's curiosity prompted early interests in the arts, sciences, photography, and engineering. But it was a chance stumbling upon a run-down, yet functional, laboratory in his late grandfather's home that solidified the young man's enthusiasm for chemistry.

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B. As a student at the City of London School, Perkin became immersed in the study of chemistry. His talent and devotion to the subject were perceived by his teacher, Thomas Hall, who encouraged him to attend a series of lectures given by the eminent scientist Michael Faraday at the Royal Institution. Those speeches fired the young chemist's enthusiasm further, and he later went on to attend the Royal College of Chemistry, which he succeeded in entering in 1853, at the age of 15.

C. At the time of Perkin's enrolment, the Royal College of Chemistry was headed by the noted German chemist August Wilhelm Hofmann. Perkin's scientific gifts soon caught Hofmann's attention and, within two years, he became Hofmann's youngest assistant. Not long after that, Perkin made the scientific breakthrough that would bring him both fame and fortune.

D. At the time, quinine was the only viable medical treatment for malaria. The drug is derived from the bark of the cinchona tree, native to South America, and by 1856 demand for the drug was surpassing the available supply. Thus, when Hofmann made some passing comments about the desirability of a synthetic substitute for quinine, it was unsurprising that his star pupil was moved to take up the challenge.

E. During his vacation in 1856, Perkin spent his time in the laboratory on the top floor of his family's house. He was attempting to manufacture quinine from aniline, an inexpensive and readily available coal tar waste product. Despite his best efforts, however, he did not end up with quinine. Instead, he produced a mysterious dark sludge. Luckily, Perkin's scientific training and nature prompted him to investigate the substance further. Incorporating potassium dichromate and alcohol into the aniline at various stages of the experimental process, he finally produced a deep purple solution. And, proving the truth of the famous scientist Louis Pasteur's words 'chance favours only the prepared mind', Perkin saw the potential of his unexpected find.

F. Historically, textile dyes were made from such natural sources as plants and animal excretions. Some of these, such as the glandular mucus of snails, were difficult to obtain and outrageously expensive. Indeed, the purple colour extracted from a snail was once so costly that in society at the time only the rich could afford it. Further, natural dyes tended to be muddy in hue and fade quickly. It was against this backdrop that Perkin's discovery was made.

G. Perkin quickly grasped that his purple solution could be used to colour fabric, thus making it the world's first synthetic dye. Realising the importance of this breakthrough, he lost no time in patenting it. But perhaps the most fascinating of all Perkin's reactions to his

find was his nearly instant recognition that the new dye had commercial possibilities.

H. Perkin originally named his dye Tyrian Purple, but it later became commonly known as mauve (from the French for the plant used to make the colour violet). He asked advice of Scottish dye works owner Robert Pullar, who assured him that manufacturing the dye would be well worth it if the colour remained fast (i.e. would not fade) and the cost was relatively low. So, over the fierce objections of his mentor Hofmann, he left college to give birth to the modern chemical industry.

I. With the help of his father and brother, Perkin set up a factory not far from London. Utilising the cheap and plentiful coal tar that was an almost unlimited by product of London's gas street lighting, the dye works began producing the world's first synthetically dyed material in 1857. The company received a commercial boost from the Empress Eugenie of France, when she decided the new colour flattered her. Very soon, mauve was the necessary shade for all the fashionable ladies in that country.

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J. Not to be outdone, England's Queen Victoria also appeared in public wearing a mauve gown, thus making it all the rage in England as well. The dye was bold and fast, and the public clamoured for more. Perkin went back to the drawing board.

K. Although Perkin's fame was achieved and fortune assured by his first discovery, the chemist continued his research. Among other dyes he developed and introduced were aniline red (1859) and aniline black (1863) and, in the late 1860s, Perkin's green. It is important to note that Perkin's synthetic dye discoveries had outcomes far beyond the merely decorative. The dyes also became vital to medical research in many ways. For instance, they were used to stain previously invisible microbes and bacteria, allowing researchers to identify such bacilli as tuberculosis, cholera, and anthrax. Artificial dyes

continue to play a crucial role today. And, in what would have been particularly pleasing to Perkin, their current use is in the search for a vaccine against malaria.

Question 1-7

Instructions to follow

- Do the following statements agree with the information given in Reading Passage? In boxes 1-7 on your answer sheet, write

  TRUE if the statement agrees with the information
  FALSE if the statement contradicts with the information
  NOT GIVEN if there is no information on this

1. Michael Faraday was the first person to recognise Perkin's ability as a student of chemistry.
2. Michael Faraday suggested Perkin should enrol in the Royal College of Chemistry.
3. Perkin employed August Wilhelm Hofmann as his assistant.
4. Perkin was still young when he made the discovery that made him rich and famous.
5. The trees from which quinine is derived grow only in South America.
6. Perkin hoped to manufacture a drug from a coal tar waste product.
7. Perkin was inspired by the discoveries of the famous scientist Louis Pasteur.

Questions 8-13

Instructions to follow

- Answer the questions below. Choose NO MORE THAN TWO WORDS from the passage for each answer.
- Write your answers in boxes 8-13 on your answer sheet.

8. Before Perkin's discovery, with what group in society was the colour purple associated?

9 What potential did Perkin immediately understand that his new dye had?

10 What was the name finally used to refer to the first colour Perkin invented?

11 What was the name of the person Perkin consulted before setting up his own dye works?

12 In what country did Perkin's newly invented colour first become fashionable?

13 According to the passage, which disease is now being targeted by researchers using synthetic dyes?

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Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26 which are based on Reading Passage 2 below.

Antarctica – in from the cold?

A. A little over a century ago, men of the ilk of Scott, Shackleton and Mawson battled against Antarctica's blizzards, cold and deprivation. In the name of Empire and in an age of heroic deeds they created an image of Antarctica that was to last well into the 20th century – an image of remoteness, hardship, bleakness and isolation that was the province of only the most courageous of men. The image was one of a place removed from everyday reality, of a place with no apparent value to anyone.

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B. As we enter the 21st century, our perception of Antarctica has changed. Although physically Antarctica is no closer and probably no warmer, and to spend time there still demands a dedication not seen in ordinary life, the continent and its surrounding ocean are increasingly seen to an integral part of Planet Earth, and a key component in the Earth System. Is this because the world seems a little smaller these days, shrunk by TV and tourism, or is it because Antarctica really does occupy a central spot on Earth's mantle? Scientific research during the past half-century has revealed – and continues to reveal – that Antarctica's great mass and low temperature exert a major influence on climate and ocean circulation, factors which influence the lives of millions of people all over the globe.

C. Antarctica was not always cold. The slow break-up of the super-continent Gondwana with the northward movements of Africa, South America, India and Australia eventually

created enough space around Antarctica for the development of an Antarctic Circumpolar Current (ACC), that flowed from west to east under the influence of the prevailing westerly winds. Antarctica cooled, its vegetation perished, glaciation began and the continent took on its present-day appearance. Today the ice that overlies the bedrock is up to 4km thick, and surface temperatures as low as – 89.2deg C have been recorded. The icy blast that howls over the ice cap and out to sea – the so-called katabatic wind – can reach 300 km/hr, creating fearsome wind-chill effects.

D. Out of this extreme environment come some powerful forces that reverberate around the world. The Earth's rotation, coupled to the generation of cells of low pressure off the Antarctic coast, would allow Astronauts a view of Antarctica that is as beautiful as it is awesome. Spinning away to the northeast, the cells grow and deepen, whipping up the Southern Ocean into the mountainous seas so respected by mariners. Recent work is showing that the temperature of the ocean may be a better predictor of rainfall in Australia than is the pressure difference between Darwin and Tahiti – the Southern Oscillation Index. By receiving more accurate predictions, graziers in northern Queensland are able to avoid overstocking in years when rainfall will be poor. Not only does this limit their losses but it prevents serious pasture degradation that may take decades to repair. CSIRO is developing this as a prototype forecasting system, but we can confidently predict that as we know more about the Antarctic and the Southern Ocean we will be able to enhance and extend our predictive ability.

E. The ocean's surface temperature results from the interplay between deep-water temperature, air temperature and ice. Each winter between 4 and 19 million square km of sea ice form, locking up huge quantities of heat close to the continent. Only now can we start to unravel the influence of sea ice on the weather that is experienced in southern Australia. But in another way, the extent of sea ice extends its influence far beyond

Antarctica. Antarctic krill – the small shrimp-like crustaceans that are the staple diet for baleen whales, penguins, some seals, flighted sea birds and many fish – breed well in years when sea ice is extensive and poorly when it is not. Many species of baleen whales and flighted sea birds migrate between the hemispheres and when the krill are less abundant they do not thrive.

F. The circulatory system of the world's oceans is like a huge conveyor belt, moving water and dissolved minerals and nutrients from one hemisphere to the other, and from the ocean's abyssal depths to the surface. The ACC is the longest current in the world and has the largest flow. Through it, the deep flows of the Atlantic, Indian and Pacific Oceans are joined to form part of single global thermohaline circulation. During winter, the howling katabatics sometimes scour the ice off patches of the sea's surface leaving large ice-locked lagoons, or 'polynyas'. Recent research has shown that as fresh sea ice forms, it is continuously stripped away by the wind and maybe blown up to 90km in a single day. Since only freshwater freezes into ice, the water that remains becomes increasingly salty and dense, sinking until it spills over the continental shelf. Coldwater carries more oxygen than warm water, so when it rises, well into the northern hemisphere, it reoxygenates and revitalises the ocean. The state of the northern oceans and their biological productivity owe much to what happens in the Antarctic.

Questions 14-18

Instructions to follow

- The reading passage has seven paragraphs A-F. Which paragraph contains the following information?
- Write the correct letter A-F, in boxes 14-18 on your answer sheet.

14 The example of research on weather prediction on agriculture

A ○ B ○ C ○ D ○ E ○ F ○

15 Antarctic sea ice brings life back to the world oceans' vitality.

A ○ B ○ C ○ D ○ E ○ F ○

16 A food chain that influences the animals living pattern based on Antarctic fresh sea ice

A ○ B ○ C ○ D ○ E ○ F ○

17 The explanation of how atmosphere pressure above Antarctica can impose an effect on global climate change

A ○ B ○ C ○ D ○ E ○ F ○

18 Antarctica was once thought to be a forgotten and insignificant continent

A ○ B ○ C ○ D ○ E ○ F ○

Question 19-21

Instructions to follow

- Please match the natural phenomenon with correct determined factor
- Choose the correct answer from the box
- Write the correct letter A-F, in boxes in 19-21 on your answer sheet.

Summary

19 Globally, mass Antarctica's size and …… influence climate change

A ○ B ○ C ○ D ○ E ○ F ○

20 …… contributory to western wind

A ○ B ○ C ○ D ○ E ○ F ○

21 Southern Oscillation Index based on air pressure can predict …….. in Australia

A ○ B ○ C ○ D ○ E ○ F ○

A	Antarctic Circumpolar Current (ACC)
B	katabatic winds
C	rainfall
D	temperature
E	glaciers
F	pressure

Questions 22-26

Instructions to follow

- Choose the correct letter A, B, C or D.
- Write your answer in boxes 22-26 on your answer sheet.

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22 In paragraph B, the author wants to tell which of the following truth about the Antarctic?

- A ○ To show Antarctica has been a central topic of global warming in Mass media
- B ○ To illustrate its huge sea ice brings food to million lives to places in the world
- C ○ To show it is the heart and its significance to the global climate and current
- D ○ To illustrate it locates in the central spot-on Earth geographically

23 Why do Australian farmers keep an eye on the Antarctic Ocean temperature?

- A ○ Help farmers reduce their economic or ecological losses
- B ○ Retrieve grassland decreased in the overgrazing process
- C ○ Prevent animal from dying
- D ○ A cell provides fertilizer for the grassland

24 What is the final effect of katabatic winds?

A Increase the moving speed of ocean current

B Increase salt level near the ocean surface

C Bring fresh ice into southern oceans

D Pile up the mountainous ice cap respected by mariners

25 The break of the continental shelf is due to the

A Salt and density increase

B Salt and density decrease

C global warming resulting in a rising temperature

D fresh ice melting into ocean water

26 The decrease in the number of Whales and seabirds is due to

A killers whales are more active around

B Sea birds are affected by high sea level salty

C less sea ice reduces the productivity of food source

D seals fail to reproduce babies

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Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40 which are based on Reading Passage 3 below.

Decision Making And Happiness

A. Americans today choose among more options in more parts of life than has ever been possible before. To an extent, the opportunity to choose enhances our lives. It is only logical to think that if some choices are good, more is better; people who care about having infinite options will benefit from them, and those who do not can always just ignore the 273 versions of cereal they have never tried. Yet recent research strongly suggests that, psychologically, this assumption is wrong. Although some choices are undoubtedly better than none, more is not always better than less.

B. Recent research offers insight into why many people end up unhappy rather than pleased when their options expand. We began by making a distinction between "maximizers" (those who always aim to make the best possible choice) and "satisficers" (those who aim for "good enough," whether or not better selections might be out there).

C. In particular, we composed a set of statements—the Maximization Scale—to diagnose people's propensity to maximize. Then we had several thousand people rate themselves from 1 to 7 (from "completely disagree" to "completely agree") on such statements as "I never settle for second best." We also evaluated their sense of satisfaction with their decisions. We did not define a sharp cutoff to separate maximizers from satisficers, but in general, we think of individuals whose average scores are higher than 4 (the scale's

midpoint) as maxi- misers and those whose scores are lower than the midpoint as satisficers. People who score highest on the test—the greatest maximizers—engage in more product comparisons than the lowest scorers, both before and after they make purchasing decisions, and they take longer to decide what to buy. When satisficers find an item that meets their standards, they stop looking. But maximizers exert enormous effort reading labels, checking out consumer magazines and trying new products. They also spend more time comparing their purchasing decisions with those of others.

D. We found that the greatest maximizers are the least happy with the fruits of their efforts. When they compare themselves with others, they get little pleasure from finding out that they did better and substantial dissatisfaction from finding out that they did worse. They are more prone to experiencing regret after a purchase, and if their acquisition disappoints them, their sense of well-being takes longer to recover. They also tend to brood or ruminate more than satisficers do.

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E. Does it follow that maximizers are less happy in general than satisficers? We tested this by having people fill out a variety of questionnaires known to be reliable indicators of well-being. As might be expected, individuals with high maximization scores experienced less satisfaction with life and were less happy, less optimistic and more depressed than people with low maximization scores. Indeed, those with extreme maximization ratings had depression scores that placed them in the borderline of clinical range.

F. Several factors explain why more choice is not always better than less, especially for maxi-misers. High among these are “opportunity costs.” The quality of any given option cannot be assessed in isolation from its alternatives. One of the “costs” of making a selection is losing the opportunities that a different option would have afforded. Thus, an opportunity cost of vacationing on the beach in Cape Cod might be missing the fabulous restaurants

in the Napa Valley. Early Decision Making Research by Daniel Kahneman and Amos Tversky showed that people respond much more strongly to losses than gains. If we assume that opportunity costs reduce the overall desirability of the most preferred choice, then the more alternatives there are, the deeper our sense of loss will be and the less satisfaction we will derive from our ultimate decision.

G. The problem of opportunity costs will be better for a satisficer. The latter's "good enough" philosophy can survive thoughts about opportunity costs. In addition, the "good enough" standard leads to much less searching and inspection of alternatives than the maximizer's "best" standard. With fewer choices under consideration, a person will have fewer opportunity costs to subtract.

H. Just as people feel sorrow about the opportunities they have forgone, they may also suffer regret about the option they settled on. My colleagues and I devised a scale to measure proneness to feeling regret, and we found that people with high sensitivity to regret are less happy, less satisfied with life, less optimistic and more depressed than those with low sensitivity. Not surprisingly, we also found that people with high regret sensitivity tend to be maximizers. Indeed, we think that worry over future regret is a major reason that individuals become maximizers. The only way to be sure you will not regret a decision is by making the best possible one. Unfortunately, the more options you have and the more opportunity costs you incur, the more likely you are to experience regret.

I. In a classic demonstration of the power of sunk costs, people were offered season subscriptions to a local theatre company. Some were offered the tickets at full price and others at a discount. Then the researchers simply kept track of how often the ticket purchasers actually attended the plays over the course of the season. Full-price payers

were more likely to show up at performances than discount payers. The reason for this, the investigators argued, was that the full-price payers would experience more regret if they did not use the tickets because not using the more costly tickets would constitute a bigger loss. To increase the sense of happiness, we can decide to restrict our options when the decision is not crucial. For example, make a rule to visit no more than two stores when shopping for clothing.

Questions 27-31

Instructions to follow

- Use the information in the passage to match the category (listed A-D) with descriptions or deeds below.
- Write the correct letter, A-D, in boxes 27-31 on your answer sheet.

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A "maximizers"
B "satisficers"
C both
D neither of them

27 rated to the Maximization Scale of making choice

A ○ B ○ C ○ D ○

28 finish transaction when the items match their expectation

A ○ B ○ C ○ D ○

29 buy the most expensive things when shopping

A ○ B ○ C ○ D ○

30 consider repeatedly until they make a final decision

A ○ B ○ C ○ D ○

31 participate in the questionnaire of the author

A ○ B ○ C ○ D ○

Questions 32-36

Instructions to follow

- Do the following statements agree with the information given in Reading Passage 3?
  In boxes 32-36 on your answer sheet, write
  TRUE if the statement is true
  FALSE if the statement is false
  NOT GIVEN if the information is not given in the passage

32 With society's advancement, more chances make our lives better and happier.

33 There is a difference of findings by different gender classification.

34 The feeling of loss is greater than that of acquisition.

35 'Good enough' plays a more significant role in pursuing 'best' standards of the maximisers

36 There are certain correlations between the "regret" people and the maximisers.

Questions 37-40

Instructions to follow

- Choose the correct letter A, B, C or D.
- Write your answers in boxes 37-40 on your answer sheet.

37 What is the subject of this passage?

A regret makes people less happy
B choices and Well-being
C an interesting phenomenon
D advices on shopping

38 According to the conclusion of questionnaires, which of the following statement is correct?

A maximisers are less happy
B state of being optimistic is important
C uncertain results are found.
D maximisers tend to cross the bottom line

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39 The experimental on theater tickets suggested:

A sales are different according to each season
B people like to spend on the most expensive items
C people feel depressed if they spend their vouchers
D people will feel regret more when they fail to use a higher-priced purchase

40 What is the author's suggestion on how to increase happiness:

A focus on the final decision
B be sensitive and smart
C reduce the choice or option
D read the label carefully

IELTS Reading Test 6

Section 1

Instructions to follow

- You should spend 20 minutes on Questions 1-13 which are based on Reading Passage 1

Painters of time

'The world's fascination with the mystique of Australian Aboriginal art.'

Emmanuel de Roux

A. The works of Aboriginal artists are now much in demand throughout the world, and not just in Australia, where they are already fully recognised: the National Museum of Australia, which opened in Canberra in 2001, designated 40% of its exhibition space to works by Aborigines. In Europe their art is being exhibited at a museum in Lyon. France, while the future Quai Branly museum in Paris which will be devoted to arts and civilisations of Africa. Asia, Oceania and the Americas plans to commission frescoes by artists from Australia.

B. Their artistic movement began about 30 years ago. But its roots go back to time immemorial. All the works refer to the founding myth of the Aboriginal culture, 'the Dreaming'. That internal geography, which is rendered with a brush and colours, is also the expression of the Aborigines' long quest to regain the land which was stolen from them when Europeans arrived in the nineteenth century. 'Painting is nothing without history.' says one such artist- Michael Nelson Tjakamarra.

C. There are now fewer than 400,000 Aborigines living in Australia. They have been swamped by the country's 17.5 million immigrants. These original ‘natives' have been living in Australia for 50,000 years, but they were undoubtedly maltreated by the newcomers. Driven back to the most barren lands or crammed into slums on the outskirts of cities, the Aborigines were subjected to a policy of ‘assimilation’, which involved kidnapping children to make them better ‘integrated' into European society, and herding the nomadic Aborigines by force into settled communities.

D. It was in one such community, Papunya, near Alice Springs, in the central desert, that Aboriginal painting first came into its own. In 1971, a white school teacher. Geoffrey Bardon, suggested to a group of Aborigines that they should decorate the school walls with ritual motifs, so as to pass on to the younger generation the myths that were starting to fade from their collective memory. Lie gave them brushes, colours and surfaces to paint on cardboard and canvases. He was astounded by the result. But their art did not come like a bolt from the blue: for thousands of years Aborigines had been ‘painting' on the ground using sands of different colours, and on rock faces. They had also been decorating their bodies for ceremonial purposes. So there existed a formal vocabulary.

E. This had already been noted by Europeans. In the early twentieth century, Aboriginal communities brought together by missionaries in northern Australia had been encouraged to reproduce on tree bark the motifs found on rock faces. Artists turned out a steady stream of works, supported by the churches, which helped to sell them to the public, and between 1950 and I960 Aboriginal paintings began to reach overseas museums. Painting on bark persisted in the north, whereas the communities in the central desert increasingly used acrylic paint, and elsewhere in Western Australia women explored the possibilities of wax painting and dyeing processes, known as

'batik'.

F. What Aborigines depict are always elements of the Dreaming, the collective history that each community is both part of and guardian of. I Dreaming is the story of their origins, of their 'Great Ancestors', who passed on their knowledge, their art and their skills (hunting, medicine, painting, music and dance) to man. 'The Dreaming is not synonymous with the moment when the world was created.' says Stephane Jacob, one of the organisers of the Lyon exhibition. 'For Aborigines, that moment has never ceased to exist. It is perpetuated by the cycle of the seasons and the religious ceremonies which the Aborigines organise. Indeed the aim of those ceremonies is also to ensure the permanence of that golden age. The central function of Aboriginal painting, even in its contemporary manifestations, is to guarantee the survival of this world. The Dreaming is both past, present and future.'

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G. Each work is created individually, with a form peculiar to each artist, but it is created within and on behalf of a community who must approve it. An artist cannot use a 'dream' that does not belong to his or her community, since each community is the owner of its dreams, just as it is anchored to a territory marked out by its ancestors, so each painting can be interpreted as a kind of spiritual road map for that community.

H. Nowadays, each community is organised as a cooperative and draws on the services of an art adviser, a government-employed agent who provides the artists with materials, deals with galleries and museums and redistributes the proceeds from sales among the artists.

I. Today, Aboriginal painting has become a great success. Some works sell for more than $25,000, and exceptional items may fetch as much as $180,000 in Australia.

'By exporting their paintings as though they were surfaces of their territory, by accompanying them to the temples of western art the Aborigines have redrawn the map of their country, into whose depths they were exiled,* says Yves Le Fur of the Quai Branly museum. 'Masterpieces have been created. Their undeniable power prompts a dialogue that has proved all too rare in the history of contacts between the two cultures'.

Questions 1-8

Instructions to follow

- The reading Passage has nine paragraphs A-I.
- Choose the most suitable heading for paragraphs A-F from the list of headings below.
- Write the correct number (i-viii) in boxes 1-8 on your answer sheet.

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List of headings

i Amazing results from a project
ii New religious ceremonies
iii Community art centres
iv Early painting techniques and marketing systems
v Mythology and history combined
vi The increasing acclaim for Aboriginal art
vii Belief in continuity
viii Oppression of a minority people

1. Paragraph A
2. Paragraph B
3. Paragraph C
4. Paragraph D
5. Paragraph E

6 Paragraph F

Questions 7-10

Instructions to follow

- Complete the flow chart below
- Choose NO MORE THAN THREE WORDS from the passage for each answer.
- Write your answer in boxes 7-10 from the passage for each answer.

For 7_____ , Aborigines produced ground and rock paintings.

Early twentieth century: churches first promoted the use of 8_____ for paintings.

Mid-twentieth century: Aboriginal paintings were seen in 9_____

Early 1970s: Aboriginal painted traditional patterns on 10_____ in one commodity

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Questions 11 - 13

Instructions to follow

- Choose the correct answer, A, B, C or D
- Write your answers in boxes 11-13 on your answer sheet

11 In Paragraph G, the writer suggests that an important feature of Aboriginal art is

A its historical context.
B its significance to the group.
C its religious content.
D its message about the environment.

12 In Aboriginal beliefs, there is a significant relationship between

A communities and lifestyles.
B images and techniques.
C culture and form.
D ancestors and territory.

13 In Paragraph I. the writer suggests that Aboriginal art invites Westerners to engage with

A the Australian land.
B their own art.
C Aboriginal culture.
D their own history.

Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26 which are based on Reading Passage 2

Ancient Storytelling

A. It was told, we suppose, to people crouched around a fire: a tale of adventure, most likely-relating some close encounter with death; a remarkable hunt, an escape from mortal danger; a vision, or something else out of the ordinary. Whatever its thread, the weaving of this story was done with a prime purpose. The listeners must keep listening. They must not fall asleep. So, as the story went on, its audience should be sustained by one question above all. What happens next?

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B. The first fireside stories in human history can never be known. They were kept in the heads of those who told them. This method of storage is not necessarily inefficient. From documented oral traditions in Australia, the Balkans and other parts of the world we know that specialised storytellers and poets can recite from memory literally thousands of lines, in verse or prose, verbatim-word for word. But while memory is rightly considered an art in itself, it is clear that a primary purpose of making symbols is to have a system of reminders or mnemonic cues – signs that assist us to recall certain information in the mind's eye.

C. In some Polynesian communities, a notched memory stick may help to guide a storyteller through successive stages of recitation. But in other parts of the world, the activity of storytelling historically resulted in the development or even the invention of writing

systems. One theory about the arrival of literacy in ancient Greece, for example, argues that the epic tales about the Trojan War and the wanderings of Odysseus – traditionally attributed to Homer – were just so enchanting to hear that they had to be preserved. So the Greeks, c.750-700 BC, borrowed an alphabet from their neighbors in the eastern Mediterranean, the Phoenicians.

D. The custom of recording stories on parchment and other materials can be traced in many manifestations around the world, from the priestly papyrus archives of ancient Egypt to the birch-bark scrolls on which the North American Ojibway Indians set down their creation-myth. It is a well-tried and universal practice: so much so that to this day storytime is probably most often associated with words on paper. The formal practice of narrating a story aloud would seem-so we assume-to have given way to newspapers, novels and comic strips. This, however, is not the case. Statistically, it is doubtful that the majority of humans currently rely upon the written word to get access to stories. So what is the alternative source?

E. Each year, over 7 billion people will go to watch the latest offering from Hollywood, Bollywood and beyond. The supreme storyteller of today is cinema. The movies, as distinct from still photography, seem to be an essential modem phenomenon. This is an illusion, for there are, as we shall see, certain ways in which the medium of film is indebted to very old precedents of arranging 'sequences' of images. But any account of visual storytelling must be with the recognition that all storytelling beats with a deeply atavistic pulse: that is, a 'good story' relies upon formal patterns of plot and characterisation that have been embedded in the practice of storytelling over many generations.

F. Thousands of scripts arrive every week at the offices of the major film studios. But aspiring

screenwriters really need to look no further for essential advice than the fourth-century BC Greek Philosopher Aristotle. He left some incomplete lecture notes on the art of telling stories in various literary and dramatic modes, a slim volume known as The Poetics. Though he can never have envisaged the popcorn-fuelled actuality of a multiplex cinema, Aristotle is almost prescient about the key elements required to get the crowds flocking to such a cultural hub. He analyzed the process with cool rationalism. When a story enchants us, we lose the sense of where we are; we are drawn into the story so thoroughly that we forget it is a story being told. This is, in Aristotle's phrase, 'the suspension of disbelief.

G. We know the feeling. If ever we have stayed in our seats, stunned with grief, as the credits roll by, or for days after seeing that vivid evocation of horror have been nervous about taking a shower at home, then we have suspended disbelief. We have been caught, or captivated, in the storyteller's web. Did it all really happen? We really thought so-for a while. Aristotle must have witnessed often enough this suspension of disbelief. He taught at Athens, the city where theater developed as a primary form of civic ritual and recreation. Two theatrical types of storytelling, tragedy and comedy, caused Athenian audiences to lose themselves in sadness and laughter respectively. Tragedy, for Aristotle, was particularly potent in its capacity to enlist and then purge the emotions of those watching the story unfold on the stage, so he tried to identify those factors in the storyteller's art that brought about such engagement. He had, as an obvious sample for analysis, not only the fifth-century BC masterpieces of Classical Greek tragedy written by Aeschylus, Sophocles and Euripides. Beyond them stood Homer, whose stories even then had canonical status: The Iliad and The Odyssey were already considered literary landmarks-stories by which all other stories should be measured. So what was the secret of Homer's narrative art?

H. It was not hard to find. Homer created credible heroes. His heroes belonged to the past, they were mighty and magnificent, yet they were not, in the end, fantasy figures. He made his heroes sulk, bicker, cheat and cry. They were, in short, characters – protagonists of a story that an audience would care about, would want to follow, would want to know what happens next. As Aristotle saw, the hero who shows a human side-some flaw or weakness to which mortals are prone-is intrinsically dramatic.d by logging.

Questions 14-18

Instructions to follow

- The Reading passage has eight paragraph A-H.
- Which paragraph contains the following information?

14 A misunderstanding of a modern way for telling stories

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

15 The typical forms mentioned for telling stories

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

16 The fundamental aim of storytelling

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

17 A description of reciting stories without any assistance

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

18 How to make story characters attractive

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

Questions 19-22

Instructions to follow

- Classify the following information as referring to

A adopted the writing system from another country

B used organic materials to record stories

C used tools to help to tell stories

19 Egyptians

A ○ B ○ C ○

20 Ojibway

A ○ B ○ C ○

21 Polynesians

A ○ B ○ C ○

22 Greek

A ○ B ○ C ○

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Questions 23-26

Instructions to follow

- Complete the sentences below with ONE WORD ONLY from the passage.

23 Aristotle wrote a book on the art of storytelling called

24 Aristotle believed the most powerful type of story to move listeners is

25 Aristotle viewed Homer's works as

26 Aristotle believed attractive heroes should have some

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Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40 which are based on Reading Passage 3

Musical Maladies

Norman M. Weinberger reviews the latest work of Oliver Sacks on music.

Music and the brain are both endlessly fascinating subjects, and as a neuroscientist specialising in auditory learning and memory, I find them especially intriguing. So I had high expectations of Musicophilia, the latest offering from neurologist and prolific author Oliver Sacks. And I confess to feeling a little guilty reporting that my reactions to the book are mixed.

Sacks himself is the best part of Musicophilia. He richly documents his own life in the book and reveals highly personal experiences. The photograph of him on the cover of the book— which shows him wearing headphones, eyes closed, clearly enchanted as he listens to Alfred Brendel perform Beethoven's Pathétique Sonata—makes a positive impression that is borne out by the contents of the book. Sacks's voice throughout is steady and erudite but never pontifical. He is neither self-conscious nor self-promoting.

The preface gives a good idea of what the book will deliver. In it Sacks explains that he wants to convey the insights gleaned from the "enormous and rapidly growing body of work on the neural underpinnings of musical perception and imagery, and the complex and often bizarre disorders to which these are prone " He also stresses the importance of

"the simple art of observation" and "the richness of the human context." He wants to combine "observation and description with the latest in technology," he says, and to imaginatively enter into the experience of his patients and subjects. The reader can see that Sacks, who has been practicing neurology for 40 years, is torn between the "old-fashioned" path of observation and the new-fangled, high-tech approach: He knows that he needs to take heed of the latter, but his heart lies with the former.

The book consists mainly of detailed descriptions of cases, most of them involving patients whom Sacks has seen in his practice. Brief discussions of contemporary neuroscientific reports are sprinkled liberally throughout the text. Part I, "Haunted by Music," begins with the strange case of Tony Cicoria, a nonmusical, middle-aged surgeon who was consumed by a love of music after being hit by lightning. He suddenly began to crave listening to piano music, which he had never cared for in the past. He started to play the piano and then to compose music, which arose spontaneously in his mind in a "torrent" of notes. How could this happen? Was the cause psychological? (He had had a near-death experience when the lightning struck him.) Or was it the direct result of a change in the auditory regions of his cerebral cortex? Electro-encephalography (EEG) showed his brain waves to be normal in the mid-1990s, just after his trauma and subsequent "conversion" to music. There are now more sensitive tests, but Cicoria has declined to undergo them; he does not want to delve into the causes of his musicality. What a shame!

Part II, "A Range of Musicality," covers a wider variety of topics, but unfortunately, some of the chapters offer little or nothing that is new. For example, chapter 13, which is five pages long, merely notes that the blind often have better hearing than the sighted. The most interesting chapters are those that present the strangest cases. Chapter 8 is about "amusia," an inability to hear sounds as music, and "dysharmonia," a highly specific

impairment of the ability to hear harmony, with the ability to understand melody left intact. Such specific “dissociations” are found throughout the cases Sacks recounts.

To Sacks’s credit, part III, “Memory, Movement and Music,” brings us into the underappreciated realm of music therapy. Chapter 16 explains how “melodic intonation therapy” is being used to help expressive aphasia patients (those unable to express their thoughts verbally following a stroke or other cerebral incident) once again become capable of fluent speech. In chapter 20, Sacks demonstrates the near-miraculous power of music to animate Parkinson’s patients and other people with severe movement disorders, even those who are frozen into odd postures. Scientists cannot yet explain how music achieves this effect.

To readers who are unfamiliar with neuroscience and music behavior, Musicophilia may be something of a revelation. But the book will not satisfy those seeking the causes and implications of the phenomena Sacks describes. For one thing, Sacks appears to be more at ease discussing patients than discussing experiments. And he tends to be rather uncritical in accepting scientific findings and theories.

It’s true that the causes of music-brain oddities remain poorly understood. However, Sacks could have done more to draw out some of the implications of the careful observations that he and other neurologists have made and of the treatments that have been successful. For example, he might have noted that the many specific dissociations among components of music comprehension, such as loss of the ability to perceive harmony but not melody, indicate that there is no music center in the brain. Because many people who read the book are likely to believe in the brain localisation of all mental functions, this was a missed educational opportunity.

Another conclusion one could draw is that there seem to be no “cures” for neurological problems involving music. A drug can alleviate a symptom in one patient and aggravate it in another, or can have both positive and negative effects in the same patient. Treatments mentioned seem to be almost exclusively antiepileptic medications, which “damp down” the excitability of the brain in general; their effectiveness varies widely.

Finally, in many of the cases described here the patient with music-brain symptoms is reported to have “normal” EEG results. Although Sacks recognizes the existence of new technologies, among them far more sensitive ways to analyze brain waves than the standard neurological EEG test, he doesn't call for their use. In fact, although he exhibits the greatest com-passion for patients, he conveys no sense of urgency about the pursuit of new avenues in the diagnosis and treatment of music-brain disorders. This absence echoes the hook’s preface, in which Sacks expresses fear that “the simple art of observation may be lost” if we rely too much on new technologies. He does call for both approaches, though, and we can only hope that the neurological community will respond.

Questions 27-30

Instructions to follow

- Choose the correct letter A, B, C or D.
- Write the correct letter in boxes 27-30 on your answer sheet.

27 Why does the writer have mixed feelings about the book?

A The guilty feeling made him so.

B The writer expected it to be better than it was.

C Sacks failed to include his personal stories in the book.

D This is the only book written by Sacks.

28 What is the best part of the book?

A the photo of Sacks listening to music

B the tone of voice of the book

C the autobiographical description in the book

D the description of Sacks's wealth

29 In the preface, what did Sacks try to achieve?

A make terms with the new technologies

B give detailed description of various musical disorders

C explain how people understand music

D explain why he needs to do away with simple observation

30 What is disappointing about Tony Cicoria's case?

A ○ He refuses to have further tests.

B ○ He can't determine the cause of his sudden musicality.

C ○ He nearly died because of the lightning.

D ○ His brain waves were too normal to show anything.

Questions 31-36

Instructions to follow

- Do the following statements agree with the views of the writer in Reading Passage 3?
- In boxes 31-36 on your answer sheet, write

YES If the statement agrees with the views of the writer
NO If the statement contradicts the views of the writer
NOT GIVEN If it impossible to say what the writer thinks about this

31 It is difficult to give a well-reputable writer a less than favorable review.

32 Beethoven's Pathétique Sonata is a good treatment for musical disorders.

33 Sacks believes technological methods are not important compared with observation when studying his patients.

34 It is difficult to understand why music therapy is undervalued.

35 Sacks should have more skepticism about other theories and findings.

36 A sack is impatient to use new testing methods.

Questions 37-40

Instructions to follow

- Complete each sentence with the correct ending, A-F, below.
- Write the correct letter, A-F, in boxes 37-40 on your answer sheet.

37 The dissociations between harmony and melody

A ○ B ○ C ○ D ○ E ○ F ○

38 The study of treating musical disorders

A ○ B ○ C ○ D ○ E ○ F ○

39 The EEG scans of Sacks's patients

A ○ B ○ C ○ D ○ E ○ F ○

40 Sacks believes testing based on new technology

A ○ B ○ C ○ D ○ E ○ F ○

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A Show no music-brain disorders.

B Indicates that medication can have varied results.

C Is key for the neurological community to unravel the mysteries.

D Should not be used in isolation.

E Indicate that not everyone can receive good education.

F Show that music is not localised in the brain.

IELTS Reading Test 7

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-13 which are based on Reading Passage 1

Copy your neighbour

A. THERE'S no animal that symbolises rainforest diversity quite as spectacularly as the tropical butterfly. Anyone lucky enough to see these creatures flitting between patches of sunlight cannot fail to be impressed by the variety of their patterns. But why do they display such colourful exuberance? Until recently, this was almost as pertinent a question as it had been when the 19th-century naturalists, armed only with butterfly nets and insatiable curiosity, battled through the rainforests. These early explorers soon realised that although some of the butterflies' bright colours are there to attract a mate, others are warning signals. They send out a message to any predators: "Keep off, we're poisonous." And because wearing certain patterns affords protection, other species copy them. Biologists use the term "mimicry rings" for these clusters of impostors and their evolutionary idol.

B. But here's the conundrum. "Classical mimicry theory says that only a single ring should be found in any one area," explains George Beccaloni of the Natural History Museum, London. The idea is that in each locality there should be just the one pattern that best protects its wearers. Predators would quickly learn to avoid it and eventually, all mimetic species in a region should converge upon it. "The fact that this is patently not the case has been one of the major problems in mimicry research," says Beccaloni. In pursuit of a

solution to the mystery of mimetic exuberance, Beccaloni set off for one of the mega centres for butterfly diversity, the point where the western edge of the Amazon basin meets the foothills of the Andes in Ecuador. “It’s exceptionally rich, but comparatively well collected, so I pretty much knew what was there, says Beccaloni.” The trick was to work out how all the butterflies were organised and how this related to mimicry.

C. Working at the Jatun Sacha Biological Research Station on the banks of the Rio Napo, Beccaloni focused his attention on a group of butterflies called ithomiinae. These distant relatives of Britain’s Camberwell Beauty are abundant throughout Central and South America and the Caribbean. They are famous for their bright colours, toxic bodies and complex mimetic relationships. “They can comprise up to 85 per cent of the individuals in a mimicry ring and their patterns are mimicked not just by butterflies, but by other insects as diverse as damselflies and true bugs,” says Philip DeVries of the Milwaukee Public Museum’s Center for Biodiversity Studies.

D. Even though all ithomiinae are poisonous, it is in their interests to evolve to look like one another because predators that learn to avoid one species will also avoid others that resemble it. This is known as Müllerian mimicry. Mimicry rings may also contain insects that are not toxic but gain protection by looking like a model species: an adaptation called Batesian mimicry. So strong is an experienced predator’s avoidance response that even quite inept resemblance gives some protection. “Often there will be a whole series of species that mimic, with varying degrees of verisimilitude, a focal or model species,” says John Turner from the University of Leeds. “The results of these deceptions are some of the most exquisite examples of evolution known to science.” In addition to colour, many mimics copy behaviours and even the flight pattern of their model species.

E. But why are there so many different mimicry rings? One idea is that species flying at the same height in the forest canopy evolve to look like one another. “It had been suggested

since the 1970s that mimicry complexes were stratified by flight height," says DeVries. The idea is that wing colour patterns are camouflaged against the different patterns of light and shadow at each level in the canopy, providing the first line of defence against predators." But the light patterns and wing patterns don't match very well," he says. And observations show that the insects do not shift in height as the day progresses and the light patterns change. Worse still, according to DeVries, this theory doesn't explain why the model species is flying at that particular height in the first place.

F. "When I first went out to Ecuador, I didn't believe the flight height hypothesis and set out to test it," says Beccaloni. "A few weeks with the collecting net convinced me otherwise. They really flew that way." What he didn't accept, however, was the explanation about light patterns. "I thought if this idea really is true, can I work out why it could help explain why there are so many different warning patterns in any not place. Then we might finally understand how they could evolve in such a complex way." The job was complicated by the sheer diversity of species involved at Jatun Sacha. Not only were there 56 ithomiine butterfly species divided among eight mimicry rings, but there were also 69 other insect species, including 34 day-flying moths and a damselfly, all in a 200-hectare study area. Like many entomologists before him, Beccaloni used a large bag-like net to capture his prey. This allowed him to sample the 2.5 metres immediately above the forest floor. Unlike many previous workers, he kept very precise notes on exactly where he caught his specimens.

G. The attention to detail paid off. Beccaloni found that the mimicry rings were flying at two quite separate altitudes. "Their use of the forest was quite distinctive," he recalls. "For example, most members of the clear-winged mimicry ring would fly close to the forest floor, while the majority of the 12 species in the tiger-winged ring fly high up." Each mimicry wing had its own characteristic flight height.

H. However, this being practice rather than theory, things were a bit fuzzy. "They'd spend the majority of their time flying at a certain height. But they'd also spend a smaller proportion of their time flying at other heights," Beccaloni admits. Species weren't stacked rigidly like passenger jets waiting to land, but they did appear to have preferred airspace in the forest. So far, so good, but he still hadn't explained what causes the various groups of ithomiinae and their chromatic consorts to fly in formations at these particular heights.

I. Then Beccaloni had a bright idea. "I started looking at the distribution of ithomiine larval food plants within the canopy," he says. "For each one, I'd record the height to which the host plant grew and the height above the ground at which the eggs or larvae were found. Once I got them back to the field station's lab, it was just a matter of keeping them alive until they pupate and then hatched into adults which I could identify."

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Questions 1-5

Instructions to follow

- The reading Passage has seven paragraphs A-I.
- Which paragraph contains the following information?
- Write the correct letter A-I, in boxes 1-5 on your answer sheet.
- NB You can use any letter more than once.

1 Criticism against flight height theory of butterfly

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

2 Explained why Beccaloni carried out research in Ecuador.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

3 Different mimicry ring flies at different height

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

4 The method of catching butterfly by Beccaloni

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

5 Not all Mimicry patterns are toxic information sent out from insects.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

Questions 6-11

Instructions to follow

- Do the following statements agree with the information given in Reading Passage 1?
- In boxes 6-11 on your answer sheet, write

TRUE	If the statement is true
FALSE	If the statement is false
NOT GIVEN	If the information is not given in the passage

6 All butterflies' colours of wings reflect the sense of warning to other predators.

7 Insects may imitate butterflies' wing pattern as well.

8 Flying Altitude of the butterfly is determined by their food.

9 Beccaloni agreed with the flight height hypothesis and decided to reassure its validity.

10 Jatun Sacha has the richest diversity of breeds in the world.

11 Beccaloni has more detailed records on the location of butterfly collections than others.

Questions 12-13

Instructions to follow

- Choose the correct letter A, B, C or D
- Write your answers in boxes 12-13 on your answer sheet.

12 Which is correct about butterflies' flight altitude?

A Flight height theory already established

B Butterfly always flies at a certain height

C It is like the airplane’s flying phenomenon

D Each butterfly has its own favorable height

13 Which is correct about Beccaloni's next investigation after flight height?

A Some certain statistics have already been collected

B Try to find connections between larval height and adult ones

C It’s very difficult to raise butterfly larval

D Different larval favors different kinds of trees

Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26 which are based on Reading Passage 2

Corporate Social Responsibility

Broadly speaking, proponents of CSR have used four arguments to make their case: moral obligation, sustainability, license to operate, and reputation. The moral appeal – arguing that companies have a duty to be good citizens and to "do the right thing" – is prominent in the goal of Business for Social Responsibility, the leading nonprofit CSR business association in the United States. It asks that its members "achieve commercial success in ways that honour ethical values and respect people, communities, and the natural environment. "Sustainability emphasizes environmental and community stewardship.

A. An excellent definition was developed in the 1980s by Norwegian Prime Minister Gro Harlem Brundtland and used by the World Business Council for Sustainable Development: "Meeting the needs of the present without compromising the ability of future generations to meet their own needs." Nowadays, governments and companies need to account for the social consequences of their actions. As a result, corporate social responsibility (CSR) has become a priority for business leaders around the world. When a well-run business applies its vast resources and expertise to social problems that it understands and in which it has a stake, it can have a greater impact than any other organization. The notion of license to operate derives from the fact that every company needs tacit or explicit permission from governments, communities, and numerous other stakeholders to justify CSR initiatives to improve a company's image, strengthen its

brand, enliven morale and even raise the value of its stock.

B. To advance CSR. we must root it in a broad understanding of the interrelationship between a corporation and society. Successful corporations need a healthy society. Education, health care, and equal opportunity are essential to a productive workforce. Safe products and working conditions not only attract customers but lower the internal costs of accidents. Efficient utilization of land, water, energy, and other natural resources makes business more productive. Good government, the rule of law, and property rights are essential for efficiency and innovation. Strong regulatory standards protect both consumers and competitive companies from exploitation. Ultimately, a healthy society creates expanding demand for business, as more human needs are met and aspirations grow. Any business that pursues its ends at the expense of the society in which it operates will find its success to be illusory and ultimately temporary. At the same time, a healthy society needs successful companies. No social program can rival the business sector when it comes to creating the jobs, wealth, and innovation that improve standards of living and social conditions over time.

C. A company's impact on society also changes over time, as social standards evolve and science progresses. Asbestos, now understood as a serious health risk, was thought to be safe in the early 1900s, given the scientific knowledge then available. Evidence of its risks gradually mounted for more than 50 years before any company was held liable for the harms it can cause. Many firms that failed to anticipate the consequences of this evolving body of research have been bankrupted by the results. No longer can companies be content to monitor only the obvious social impacts of today. Without a careful process for identifying evolving social effects of tomorrow, firms may risk their very survival.

D. No business can solve all of society's problems or bear the cost of doing so. Instead, each

company must select issues that intersect with its particular business. Other social agendas are best left to those companies in other industries, NGOs, or government institutions that are better positioned to address them. The essential test that should guide CSR is not whether a cause is worthy but whether it presents an opportunity to create shared value – that is, a meaningful benefit for society that is also valuable to the business. Each company can identify the particular set of societal problems that it is best equipped to help resolve and from which it can gain the greatest competitive benefit.

E. The best corporate citizenship initiatives involve far more than writing a check: They specify clear, measurable goals and track results over time. A good example is the General Electronics's program to adopt underperforming public high schools near several of its major U.S. facilities. The company contributes between $250,000 and $1 million over a five-year period to each school and makes in-kind donations as well. GE managers and employees take an active role by working with school administrators to assess needs and mentor or tutor students. In an independent study of Ion schools in the program between 1989 and 1999, nearly all showed significant improvement, while the graduation rate in four of the five worst performing schools doubled from an average of 30% to 60%. Effective corporate citizenship initiatives such as this one create goodwill and improve relations with local governments and other important constituencies. What's more, GE's employees feel great pride in their participation. Their effect is inherently limited, however. No matter how beneficial (he program is, it remains incidental to the company's business, and the direct effect on GE's recruiting and retention is modest.

F. Microsoft's Working Connections partnership with the American Association of Community Colleges (AACC) is a good example of a shared-value opportunity arising from investments in context. The shortage of information technology workers is a significant

constraint on Microsoft's growth; currently, there are more than 450,000 unfilled IT positions in the United States alone. Community colleges, with an enrollment of 11.6 million students, representing 45% of all U.S. undergraduates, could be a major solution. Microsoft recognizes, however, that community colleges face special challenges: IT curricula are not standardized, technology used in classrooms is often outdated, and there are no systematic professional development programs to keep faculty up to date. Microsoft's $50 million five-year initiative was aimed at all three problems. In addition to contributing money and products, Microsoft sent employee volunteers to colleges to assess needs, contribute to curriculum development, and create faculty development institutes. Microsoft has achieved results that have benefited many communities while having a direct-and potentially significant-impact on the company.

G. At the heart of any strategy is a unique value proposition: a set of needs a company can meet for its chosen customers that other cannot. The most strategic CSR occurs when a company adds a social dimension to its value proposition, making social impact integral to the overall strategy. Consider Whole Foods Market, whose value proposition is to sell organic, natural, and healthy food products to customers who are passionate about food and the environment. The company's sourcing emphasises purchases from local farmers through each store's procurement process. Buyers screen out foods containing any of nearly 100 common ingredients that the company considers unhealthy or environmentally damaging. The same standards apply to products made internally. Whole Foods' commitment to natural and environmentally friendly operating practices extends well beyond sourcing. Stores are constructed using a minimum of virgin raw materials. Recently, the company purchased renewable wind energy credits equal to 100% of its electricity use in all of its stores and facilities, the only Fortune 500 company to offset its electricity consumption entirely. Spoiled produce and biodegradable waste are trucked to regional centers for composting. Whole Foods' vehicles are being

converted to run on biofuels. Even the cleaning products used in its stores are environmentally friendly. And through its philanthropy, the company has created the Animal Compassion Foundation to develop more natural and humane ways of raising farm animals. In short, nearly every aspect of the company's value chain reinforces the social dimensions of its value proposition, distinguishing Whole Foods from its competitors.

Questions 14-20

Instructions to follow

- The reading Passage 2 has seven paragraphs A-G.
- Choose the correct heading for each paragraph from the list of heading below.
- Write the correct number, i-viii, in boxes 14-20 on your answer sheet.

List of Headings

i How CSR may help one business to expand
ii CSR in many aspects of a company's business
iii A CSR initiative without a financial gain
iv Lack of action by the state of social issues
v Drives or pressures motivate companies to address CSR
vi The past illustrates business are responsible for future outcomes
vii Companies applying CSR should be selective
viii Reasons that business and society benefit each other

14 Paragraph A
15 Paragraph B
16 Paragraph C
17 Paragraph D
18 Paragraph E
19 Paragraph F

20 Paragraph G

Questions 21-22

Instructions to follow

- Complete the summary below
- Choose NO MORE THAN TWO WORDS from the passage for each answer.
- Write your answer in boxes 21-22 on your answer sheet.

The implementation of CSR, HOW?

Promotion of CSR requires the understanding of interdependence between business and society. Corporations workers' productivity generally needs health care, education, and given 21 .....Restrictions imposed by government and companies both protect consumers from being treated unfairly. Improvement of the safety standard can reduce the 22 .....of accidents in the workplace. Similarly society becomes a pool of more human needs and aspirations.

Questions 23-26

Instructions to follow

- Look at the following opinions or deeds (Questions 23-26) and the list of companies below.
- Match each option or deed with the correct company A, B or C. Write the correct letter A, B or C in boxes 23-26 on your answer sheet.
- NB You may use any letter more than once

23 The disposable waste

A ○ B ○ C ○

24 The way company purchases as goods

A ○ B ○ C ○

25 Helping the undeveloped

A ○ B ○ C ○

26 Ensuring the people have the latest information

A ○ B ○ C ○

A General Electronics

B Microsoft

C Whole Foods Market

Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40 which are based on Reading Passage 3

The Rainmaker Design

A. Sometimes ideas just pop up out of the blue. Or in Charlie Paton's case, out of the rain. 'I was on a bus in Morocco traveling through the desert,' he remembers. 'It had been raining and the bus was full of hot, wet people. The windows steamed up and I went to sleep with a towel against the glass. When I woke, the thing was soaking wet. I had to wring it out. And it made me think. Why was it so wet?

B. The answer, of course, was condensation. Back home in London, a physicist friend, Philip Davies, explained that the glass, chilled by the rain outside, had cooled the hot humid air inside the bus below its dew point, causing droplets of water to form on the inside of the window. Intrigued, Paton – a lighting engineer by profession – started rigging up his own equipment. 'I made my own solar stills. It occurred to me that you might be able to produce water in this way in the desert, simply by cooling the air. I wondered whether you could make enough to irrigate fields and grow crops.'

C. Today, a decade on, his dream has taken shape as a giant greenhouse on a desert island off Abu Dhabi in the Persian Gulf – the first commercially viable version of his 'seawater greenhouse'. Local scientists, working with Paton, are watering the desert and growing vegetables in what is basically a giant dew-making machine that produces freshwater and cool air from sun and seawater. In awarding Paton first prize in a design competition two years ago, Marco Goldschmied, president of the

Royal Institute of British Architects, called it 'a truly original idea which has the potential to impact on the lives of millions of people living in coastal water-starved areas around the world'.

D. The seawater greenhouse as developed by Paton has three main parts. They both air-condition the greenhouse and provide water for irrigation. The front of the greenhouse faces into the prevailing wind so that hot dry air blows in through a front wall. The wall is made of perforated cardboard kept moist by a constant trickle of seawater pumped up from the ocean. The purpose is to cool and moisten the incoming desert air. The cool moist air allows the plants to grow faster. And, crucially, because much less water evaporates from the leaves, the plants need much less moisture to grow than if they were being irrigated in the hot dry desert air outside the greenhouse.

E. The air-conditioning of the interior of the greenhouse is completed by the second feature: the roof. It has two layers: an outer layer of clear polyethylene and an inner coated layer that reflects infrared radiation. This combination ensures that visible light can stream through to the plants, maximizing the rate of plant growth through photosynthesis but at the same time heat from the infrared radiation is trapped in the space between the layers, and kept away from the plants. This helps keep the air around the plants cool.

F. At the back of the greenhouse sits the third element. This is the main water production unit. Here, the air hits a second moist cardboard wall that increases its humidity as it reaches the condenser, which finally collects from the hot humid air the moisture for irrigating the plants. The condenser is a metal surface kept cool by still more seawater. It is the equivalent of the window on Paton's Moroccan bus. Drops of pure distilled water from the condenser and flow into a tank for irrigating

the crops.

G. The Abu Dhabi greenhouse more or less runs itself. Sensors switch everything on when the sun rises and alter flows of air and seawater through the day in response to changes in temperature, humidity, and sunlight. On windless days, fans ensure a constant flow of air through the greenhouse. 'Once it is turned to the local environment, you don't need anymore there for it to work,' says Paton. "We can run the entire operation of one 13-amp plug, and in the future, we could make it entirely independent of the grid, powered from a few solar panels.'

H. Critics point out that construction costs of around $4 a square foot are quite high. By illustration, however, Paton presents that it can cool as efficiently as a 500-kilowatt air conditioner while using less than 3 kilowatts of electricity. Thus the plants need only an eighth of the volume of water used by those grown conventionally. And so the effective cost of the desalinated water in the greenhouse is only a quarter that of water from a standard desalinator, which is good economics. Besides, it really suggests an environmentally-friendly way of providing air conditioning on a scale large enough to cool large greenhouses where crops can be grown despite the high outside temperatures.

Questions 27-31

Instructions to follow

- Do the following statements agree with the information given in the reading passage? In boxes 27-31 on your answer sheet, write
  YES if the statement agrees with the information
  NO if the statement contradicts the information
  NOT GIVEN if there is no information on this.

27 The idea just came to Charlie Paton by accident.

28 The bus was well ventilated.

29 After waking up, Paton found his towel was wet.

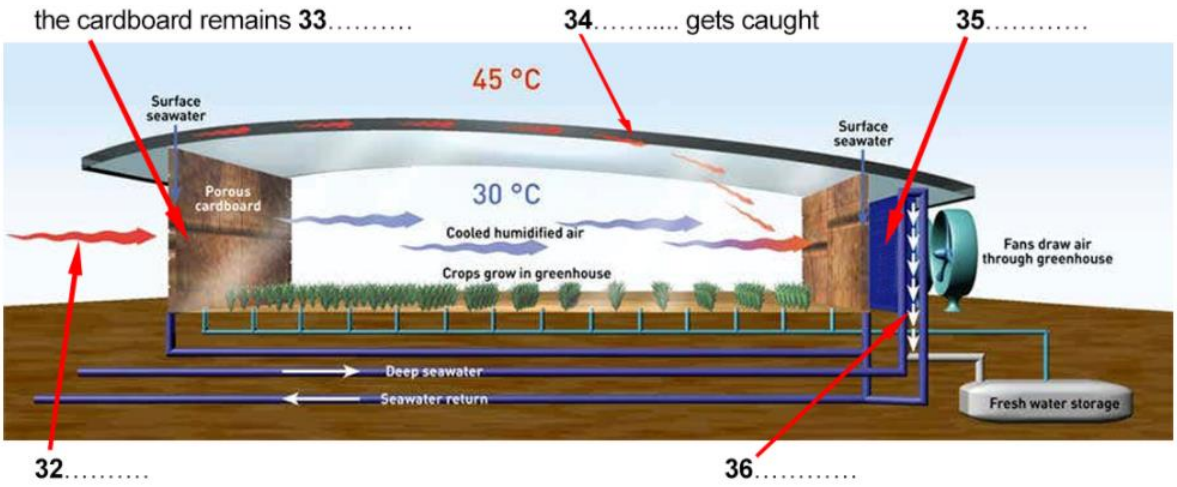
30 The fan on the bus did not work well.

31 Paton immediately operated his own business in the Persian Gulf after talking with Philip Davies.

Questions 32-36

Instructions to follow

- Label the diagram below.
- Choose NO MORE THAN THREE WORDS from the passage for each answer.
- Write your answers in boxes 32-36 on your answer sheet.



Questions 37-40

Instructions to follow

- Complete the summary below.
- Using NO MORE THAN TWO WORDS from the Reading Passage for each answer.
- Write your answers in boxes 37-40 on your answer sheet.

To some extent, the Abu Dhabi greenhouse functions automatically. When the day is sunny, the equipment can respond to the changes in several natural elements. When there is no wind, 37 ..... help to retain the flow of air. Even in the future, we have an ideal plan to power the greenhouse from 38 ..... However, there are still some critics who argue that 39 ..... are not good economics. To justify himself, Paton presents favorable arguments against these critics and suggests that it is a 40 ..... approach to provide air conditioning in a large-scale large sense.

IELTS Reading Test 8

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-13 which are based on Reading Passage 1

Caves

1. Caves are natural underground spaces, commonly those into which man can enter. There are three major types: the most widespread and extensive are those developed in soluble rocks, usually limestone or marble, by underground movement of water; on the coast are those formed in cliffs generally by the concentrated pounding of waves along joints and zones of crushed rock; and a few caves are formed in lava flows, where the solidified outer crust is left after the molten core has drained away to form rough tunnels, like those on the small basalt volcanoes of Auckland.

2. Limestone of all ages, ranging from geologically recent times to more than 450 million years ago, is found in many parts of New Zealand, although it is not all cavernous. Many caves have been discovered, but hundreds still remain to be explored. The most notable limestone areas for caves are the many hundreds of square kilometres of Te Kuiti Group (Oligocene) rocks from Port Waikato south to Mokau and from the coast inland to the Waipa Valley – especially in the Waitomo district; and the Mount Arthur Marble (upper Ordovician) of the mountains of north-west Nelson (fringed by thin bands of Oligocene limestone in the valleys and near the coast).

3. Sedimentary rocks (including limestone) are usually laid down in almost horizontal

layers or beds which may be of any thickness, but most commonly of 5-7.5 cm. These beds may accumulate to a total thickness of about a hundred metres. Pure limestone is brittle, and folding due to earth movements causes cracks along the partings, and joints at angles to them. Rain water percolates down through the soil and the fractures in the underlying rocks to the water table, below which all cavities and pores are filled with water. This water, which is usually acidic, dissolves the limestone along the joints and, once a passage is opened, it is enlarged by the abrasive action of sand and pebbles carried by streams. Extensive solution takes place between the seasonal limits of the water table. Erosion may continue to cut down into the floor, or silt and pebbles may build up floors and divert stream courses. Most caves still carry the stream that formed them.

4. Caves in the softer, well-bedded Oligocene limestones are typically horizontal in development, often with passages on several levels, and frequently of considerable length. Gardner's Gut, Waitomo, has two main levels and more than seven kilometres of passages. Plans of caves show prominent features, such as long, narrow, straight passages following joint patterns as in Ruakuri, Waitomo, or a number of parallel straits oriented in one or more directions like Te Anaroa, Rockville. Vertical cross sections of cave passages may be tall and narrow following joints, as in Burr Cave, Waitomo; large and ragged in collapse chambers, like Hollow Hill, Waitomo (233m long, 59.4m wide, and 30.48m high); low and wide along bedding planes, as in Luckie Strike, Waitomo; or high vertical water-worn shafts, like Rangitaawa Shaft (91m). Waitomo Caves in the harder, massive Mount Arthur Marble (a metamorphosed limestone) are mainly vertical in development, many reaching several hundred metres, the deepest known being Harwood Hole, Takaka (370m).

5. The unique beauty of caves lies in the variety of mineral encrustations which are

found sometimes completely covering walls, ceiling, and floor. Stalactites (Gk. stalaktit, dripping) are pendant growths of crystalline calcium carbonate (calcite) formed from solution by the deposition of minute quantities of calcite from percolating groundwater. They are usually white to yellow in colour, but occasionally are brown or red. Where water evaporates faster than it drips, long thin straws are formed which may reach the floor or thicken into columns. If the source of water moves across the ceiling, a thin drape, very like a stage curtain, is formed. Helictites are stalactites that branch or curl. Stalagmites (Gk. stalagmites, that which dripped) are conical or gnarled floor growths formed by splashing, if the water drips faster than it evaporates. These may grow toward the ceiling to form columns of massive proportions. Where calcite is deposited by water spreading thinly over the walls or floor, flowstone is formed and pools of water may build up their edges to form narrow walls of rimstone. Gypsum (calcium sulphate) is a white cave deposit of many crystal habits which are probably dependent on humidity. The most beautiful form is the gypsum flower which extrudes from a point on the cave wall in curling and diverging bundles of fibres like a lily or orchid.

Questions 1-3

Instructions to follow

- Complete the summary.
- Choose ONE WORD ONLY from the passage for each answer.

There are several 1 ..... of caves with the most common and largest being located in limestone or marble. Coastal caves are created in cliffs usually by waves. In lava flows, the solidified outer crusts that remain once the molten core has drained away also form 2 ..... Limestone is to be found all over New Zealand, but not all of it contains caves.

While many caves are known, there are large numbers that have yet to be uncovered. The main

3 .....for limestone caves are Te Kuiti Group rocks.

Questions 4-8

Instructions to follow

- Complete the flow-chart. Choose ONE WORD ONLY form the passage for each answer.

The Creation of Limestone Caves

Limestone forms thick layers

Earth moving creating 4 _____ at partings

Rain water trickling down through the soil and 5 _____ in rocks

To water table acidic water

Dissolves limestone along joints

Once 6 _____ opened Extended by sand/ pebbles 4--taken along by 7 _____

8 _____ Or silt and pebble accumulation changes stream course

Questions 9 and 10

Instructions to follow

- Choose TWO letters A-E. Write the correct letter A-E in boxes 9 and 10 on your answer sheet
- NB Your answers may be given in either order.

Which TWO of the following features of caves in the softer limestones are mentioned in the text?

A they are often long

B they are all at least 7.2km long

C most of them are vertical

D they only ever have one passages

E they are characteristically horizontal

Questions 11-13

Instructions to follow

- Do the following statements agree with the information given in the reading passage? In boxes 11-13 on your answer sheet, write

- **TRUE** if the statement agrees with the information
- **FALSE** if the statement contradicts the information
- **NOT GIVEN** if there is no information on this.

11 The limestone found in New Zealand is more than 450 million years old.

12 Stalactites are more often white to yellow than brown or red.

13 Stalagmites never grow very large.

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Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26, which are based on Reading Passage 2 below.

SHOULD WE TRY TO BRING EXTINCT SPECIES BACK TO LIFE?

A. The passenger pigeon was a legendary species. Flying in vast numbers across North America, with potentially many millions within a single flock, their migration was once one of nature's great spectacles. Sadly, the passenger pigeon's existence came to an end on 1 September 1914, when the last living specimen died at Cincinnati Zoo. Geneticist Ben Novak is a lead researcher on an ambitious project which now aims to bring the bird back to life through a process known as 'de-extinction'. The basic premise involves using cloning technology to turn the DNA of extinct animals into a fertilized embryo, which is carried by the nearest relative still in existence – in this case, the abundant band-tailed pigeon – before being born as a living, breathing animal. Passenger pigeons are one of the pioneering species in this field, but they are far from the only ones on which this cutting-edge technology is being trialed.

B. In Australia, the thylacine, more commonly known as the Tasmanian tiger, is another extinct creature that genetic scientists are striving to bring back to life. 'There is no carnivore now in Tasmania that fills the niche which thylacines once occupied,' explains Michael Archer of the University of New South Wales. He points out that in the decades since the thylacine went extinct, there has been a spread in a 'dangerously debilitating' facial tumor syndrome which threatens the existence of the Tasmanian devils, the island's other notorious resident. Thylacines would have prevented this spread because they

would have killed significant numbers of Tasmanian devils. 'If that contagious cancer had popped up previously, it would have burned out in whatever region it started. The return of thylacines to Tasmania could help to ensure that devils are never again subjected to risks of this kind.'

C. If extinct species can be brought back to life, can humanity begin to correct the damage it has caused to the natural world over the past few millennia? 'The idea of de-extinction is that we can reverse this process, bringing species that no longer exist back to life,' says Beth Shapiro of the University of California Santa Cruz's Genomics Institute. 'I don't think that we can do this. There is no way to bring back something that is 100 percent identical to a species that went extinct a long time ago.' A more practical approach for long-extinct species is to take the DNA of existing species as a template, ready for the insertion of strands of extinct animal DNA to create something new; a hybrid, based on the living species, but which looks and/or acts like the animal which died out.

D. This complicated process and questionable outcome beg the question: what is the actual point of this technology? 'For us, the goal has always been replacing the extinct species with a suitable replacement,' explains Novak. 'When it comes to breeding, band-tailed pigeons scatter and make maybe one or two nests per hectare, whereas passenger pigeons were very social and would make 10,000 or more nests in one hectare.' Since the disappearance of this key species, ecosystems in the eastern US have suffered, as the lack of disturbance caused by thousands of passenger pigeons wrecking trees and branches means there has been a minimal need for regrowth. This has left forests stagnant and therefore unwelcoming to the plants and animals which evolved to help regenerate the forest after a disturbance. According to Novak, a hybridized band-tailed pigeon, with the added nesting habits of a passenger pigeon, could, in theory, re-establish that forest disturbance, thereby creating a habitat necessary for a great many other native species to thrive.

E. Another popular candidate for this technology is the woolly mammoth. George Church, professor at Harvard Medical School and leader of the Woolly Mammoth Revival Project, has been focusing on cold resistance, the main way in which the extinct woolly mammoth and its nearest living relative, the Asian elephant, differ. By pinpointing which genetic traits made it possible for mammoths to survive the icy climate of the tundra, the project's goal is to return mammoths, or a mammoth-like species, to the area. 'My highest priority would be preserving the endangered Asian elephant,' says Church, 'expanding their range to the huge ecosystem of the tundra. Necessary adaptations would include smaller ears, thicker hair, and extra insulating fat, all for the purpose of reducing heat loss in the tundra, and all traits found in the now-extinct woolly mammoth.' This repopulation of the tundra and boreal forests of Eurasia and North America with large mammals could also be a useful factor in reducing carbon emissions – elephants punch holes through snow and knock down trees, which encourages grass growth. This grass growth would reduce temperature, and mitigate emissions from melting permafrost.

F. While the prospect of bringing extinct animals back to life might capture imaginations, it is, of course, far easier to try to save an existing species which is merely threatened with extinction. 'Many of the technologies that people have in mind when they think about de-extinction can be used as a form of "genetic rescue",' explains Shapiro. She prefers to focus the debate on how this emerging technology could be used to fully understand why various species went extinct in the first place, and therefore how we could use it to make genetic modifications that could prevent mass extinctions in the future. 'I would also say there's an incredible moral hazard to not do anything at all,' she continues. 'We know that what we are doing today is not enough, and we have to be willing to take some calculated and measured risks.'

Questions 14-17

Instructions to follow

- Reading Passage 2 has six paragraphs, A-F.
- Which paragraph contains the following information?
- Write the correct letter, A-F, in boxes 14-17 on your answer sheet.
- NB You may use any letter more than once.

14 a reference to how further disappearance of multiple species could be avoided.

A ○ B ○ C ○ D ○ E ○ F ○

15 explanation of a way of reproducing an extinct animal using the DNA of only that species

A ○ B ○ C ○ D ○ E ○ F ○

16 reference to a habitat which has suffered following the extinction of a species

A ○ B ○ C ○ D ○ E ○ F ○

17 mention of the exact point at which a particular species became extinct

A ○ B ○ C ○ D ○ E ○ F ○

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Questions 18-22

Instructions to follow

- Complete the summary below.
- Choose NO MORE THAN TWO WORDS from the passage for each answer.
- Write your answers in boxes 18-22 on your answer sheet.

The woolly mammoth revival project

Professor George Church and his team are trying to identify the 18 ..... which enabled

mammoths to live in the tundra. The findings could help preserve the mammoth's close relative, the endangered Asian elephant.

According to the Church, introducing Asian elephants to the tundra would involve certain physical adaptations to minimize 19 ..... To survive in the tundra, the species would need to have the mammoth-like features of thicker hair, 20 ..... of reduced size, and more 21 .....

Repopulating the tundra with mammoths or Asian elephant/mammoth hybrids would also have an impact on the environment, which could help to reduce temperatures and decrease 22 .....

Questions 23-26

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Instructions to follow

- Look at the following statements (Questions 23-26) and the lists of people below.
- Match each statement with the correct person A, B or C.
- Write the correct letter A, B or C in boxes 23-26 on your answer sheet.
- NB You may use any letter more than once.

23 Reintroducing an extinct species to its original habitat could improve the health of a particular species living there.

A ○ B ○ C ○

24 It is important to concentrate on the causes of an animal's extinction.

A ○ B ○ C ○

25 A species brought back from extinction could have an important beneficial impact on the vegetation of its habitat.

A ○ B ○ C ○

26 Our current efforts at preserving biodiversity are insufficient.

A ○ B ○ C ○

List of People

A Ben Novak

B Michael Archer

C Beth Shapiro

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Section 3

Instructions to follow

- You should spend about 20 minutes Questions 27-40 which are based on Reading Passage 3

Psychometrics

A. Psychometrics involves psychological and educational assessment of the subject by way of measuring attitudes, personality, abilities, and knowledge. The field has two primary focuses; the creation of measurement instruments and procedures and development and enhancement of existing methodology employed.

B. The concept of psychometric testing introduced long before the establishment of IQ testing and other current methodologies, had first been explored by Francis Galton who developed the first testing procedures supposedly related to intelligence; however, his measurement tools were in fact based upon physical and physiological benchmarks rather than testing of the mind itself. Measurements included the physical power, height, and weight of subjects which had been recorded and results used to estimate the intelligence of subjects.

While the approach was not successful, the studies conducted by Galton were to influence the work of future researchers. Approaches to measurement of intelligence, which is defined as the mind's relative ability to reason, think, conceptually plan, solve problems, understand and learn, had later been developed by pioneers such as Charles Spearman. Significant contributions to its early development were also made by Wilhelm Wundt, L.L. Thurstone, Ernst Heinrich Weber, and Gustav Fechner.

C. The most well-known traditional approach to the development of psychometric instruments to measure intelligence is the Stanford-Binet IQ test, originally developed by French psychologist Alfred Binet. Researchers define intelligence as separate to other attributes such as personality, character, creativity and even knowledge and wisdom for their assessment. Intelligence testing methods are not intended to determine a level of genetic intelligence separate from and unaffected by the environment to which the individual has been exposed to in life; rather measure the intelligence of an individual appears as a result of both nature and nurture. Psychometrics is today a useful and widely used tool used for measurement of abilities in academic areas such as reading, writing, and mathematics.

D. IQ tests are commonly used to test intelligence, though some believe that this testing is unfair and not truly representative of the subject's intellect as individuals may excel in different areas of reasoning. Psychologist Howard Gardner, working on this assumption, introduced the concept of an individual cognitive profile in 1983 in his book Frames of Mind: The Theory of Multiple Intelligences.

He holds that one child may perform excellently in one aspect, yet fail in another and that their overall performance in a number of intellectual areas should be considered. Gardner first identified seven different types of intelligence, these being; linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal and intrapersonal. In 1999 after further research he added the 8th element to the equation; naturalistic intelligence, and at the time of writing is investigating the possibility of a 9th; this being existential intelligence.

E. The first intelligence as defined by Gardner in the Theory of Multiple Intelligences, linguistic intelligence, relates to an individual's ability to process and communicate

written and spoken words. Such people are said to excel at reading, writing, story-telling, learning a foreign language and memorizing words and dates.

The logical-mathematical category is related to a person's ability to reason logically, think scientifically, make deductions and perform well in mathematical calculations. Spatial intelligence is related to vision and spatial judgment; such individuals have been observed to have a strong visual memory and the potential to excel in artistic subjects. Those exhibiting a leaning towards the third classification, bodily-kinesthetic intelligence, often learn best by physically practising an action rather than by reading or seeing.

F. Musical intelligence, as the name suggests, relates to ability in defining differences in rhythm and tones; individuals possessing musical intelligence are often able to sing, play musical instruments and compose music to a high standard. Since a high level of audio-related ability exists, many in this category are said to learn well in a lecture situation where they are required to listen attentively to information.

Interpersonal intelligence relates to an individual's ability to communicate and empathize with others; typically extrovert, they learn well through discussion, debate, and interaction with others, The last of the 7 original categories identified by Gardner, intrapersonal intelligence, fit the opposite description of interpersonal intelligence; such individuals working best independently. According to Gardner they are capable of high levels of self-reflection and are often perfectionists.

G. A number of psychometric experts, however, oppose Gardner's view and have reservations about the validity of his theories. Firstly, some detractors disagree with the overall definition of intelligence used in Gardner's theory. They hold that some

categories such as interpersonal or intrapersonal intelligence relate more to personality than cognitive performance. The more recently identified naturalistic intelligence, which relates to an affinity to the natural world and an ability to nurture and cultivate, has been dismissed completely by many as no more than a hobby.

Doubts have been raised that others, such as musical intelligence, are real talents. A final criticism attached to the theory is that some believe that intelligence cannot be treated as separate entities as some individuals may perform equally well in what could be considered diverse areas; linguistic and logical-mathematical for example. Gardner, however, maintains that his theories are sound since an identifiable and separate part of the brain is responsible for controlling aspects related to each of the different types of intelligence,

H. Despite the criticism received from some of his contemporaries, Gardner's theories are well respected and often applied in the world of education as a tool for identifying children's differing abilities and potential career paths. For Instance, those showing linguistic capabilities are said to be ideal in roles including writing, politics, and teaching; logical-mathematical thinkers suited to careers in science, mathematics, law, medicine and philosophy.

Those exhibiting spatial intelligence are said to be suited to a career such as art, engineering or architecture; while individuals with a leaning towards bodily-kinesthetic intelligence may excel in areas such as athletics, dancing or craft-making. Strengths in the area of musical intelligence have been said to often lead to success as a singer, conductor or musician. Those displaying strong interpersonal skills have been recognized as often making effective politicians, managers, diplomats and social workers; while those showing a dominant intrapersonal intelligence are said to be

better suited to professions involving more self-reflection and lower levels of interaction with the outside world such as writing, philosophy or theology.

Questions 27-31

Instructions to follow

- Reading Passage 3 has eight paragraphs A-H.
- Which paragraph contains the following information?
- Write the correct letter A-H in boxes 27-31 on your answer sheet.
- NB You may use any letter more than once.

27 Physiological evidence from Gardner that his intelligence theories are sound.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

28 Aims of intelligence testing

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

29 Initial failure in successful measurement

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

30 How high-level social skills have been linked and classified as interpersonal intelligence.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

31 Differences in opinions on what constitutes talent or intelligence

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

Questions 32-37

Instructions to follow

- Do the following statements agree with the information given in the reading passage? In boxes 32-37 on your answer sheet, write
  TRUE if the statement agrees with the information
  FALSE if the statement contradicts the information
  NOT GIVEN if there is no information on this.

32 Early studies into intelligence had been misguided and have had no impact on today's methods.

33 Research into IQ is designed to determine the level of intelligence an individual is born with.

34 Howard Gardner has confirmed 9 different types of intelligence.

35 Spatial intelligence has been linked to creativity.

36 An individual may demonstrate high levels of intelligence in contradictory areas.

37 Those demonstrating intrapersonal intelligence always make bad managers.

Questions 38-40

Instructions to follow

- Write your answer in boxes 38-40 on your answer sheet.

38 Some believe that IQ tests do not correctly estimate an individual's intelligence because

A ◯ the tests are based on physical and physiological benchmarks.

B ◯ Some people may perform badly on the day of the test.

C ◯ while people may have weaknesses in one area they may have strengths in

others.

D ◯ the tests do not accurately assess the person's ability to reason, think and solve problems.

39 The intelligence, as classified by Gardner, relating to an ability to memorize items seen

A ◯ linguistic intelligence.

B ◯ logico-Mathematica! intelligence.

C ◯ spatial intelligence.

D ◯ bodily-kinesthetic intelligence.

40 The harshest criticism of Gardner's theory has been focussed on

A ◯ interpersonal intelligence.

B ◯ intrapersonal intelligence.

C ◯ musical intelligence.

D ◯ naturalistic intelligence.

IELTS Reading Test 9

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-13 which are based on Reading Passage 1

Build a Medieval Castle

A. Michel Guyot, owner and restorer of Saint Fargeau castle in France, first had the idea of building a 13th-century style fortress following the discovery that the 15th-century red bricks of his castle obscured the stone walls of a much older stronghold. His dream was to build a castle just as it would have been in the Middle Ages, an idea which some found mildly amusing and others dismissed as outright folly.

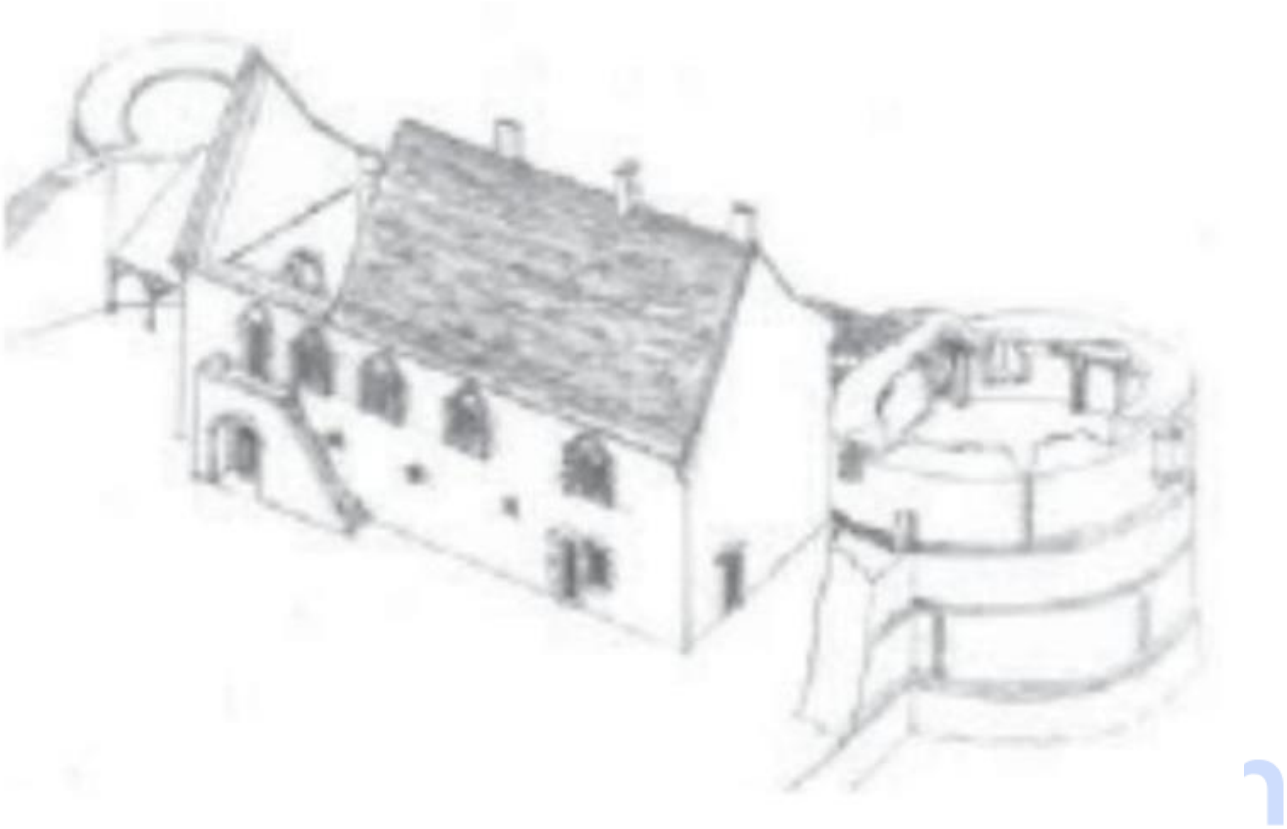
However, Maryline Martin – project director – was inspired by the exciting potential for the venture to regenerate the region. It took several months to bring together and mobilise all the various different partners: architects, archaeologists and financial backers. A site in the heart of Guédelon forest was found: a site which offered not only all the resources required for building a castle – a stone quarry, an oak forest and a water supply – but in sufficient quantities to satisfy the demands of this gigantic site. The first team started work and on June 20th 1997 the first stone was laid.

B. Unlike any other present-day building site, Michel Guyot's purpose is clear, he warmly welcomes members of the public to participate. The workers' role is to demonstrate and explain, to a wide audience, the skills of our forefathers. Stone quarrying, the building of vaulted ceilings, the blacksmith's work and the raising of roof timbers are just some of the activities which visitors can witness during a visit to Guédelon. The workers are always

on hand to talk about their craft and the progress of the castle.

Each year 60,000 children visit Guédelon with their schools. The site is an excellent educational resource, bringing to life the history of the Middle Ages. Guided tours are tailored to the school curriculum and according to age groups: activity trails for primary school children and interactive guided tours for secondary school children. Pupils of all ages have the opportunity to follow in the footsteps of medieval stone masons by taking part in a stone carving workshop or discover the secrets of the medieval master-builders at the geometry workshop.

C. Workers in the Burgundy region of France are building a 13th century castle. They're not restoring an old castle. They're actually building a new old castle. See the builders are constructing it from scratch. The craftsmen have been working for nearly ten years now but they're not even halfway done yet. That's because they're using only medieval tools and techniques. The World's Gerry Hadden takes US to the site of what will be the Guedelon Castle. Another reason said by Jean Francois, a member of Guedelon stone cutter's guild, for eight hours a day he bangs on a 13th century chisel with a 13th century iron mallet.



D. The progress of construction has to give way to tourists' side for their visits. The visitors from 2010, however unsightly they may be, are vital to the project. The initial funding came not from pillaging the local peasantry but from regional councils, the European Union and large companies. For the last 10 years, Guédelon, 100 miles southeast of Paris, has funded itself from its entrance fees. Last year it had a record 300,000 visitors, who paid almost €2.5m, making it the second most-visited site in Burgundy. The most visited site was the Hospice de Beaune, a beautiful 15th-century almshouse built 600 years before, or, if you prefer, 200 years “after”, Guédelon.

E. limestone is found in the construction of various local buildings, from the great and prestigious edifice of Ratilly castle to the more modest poyaudines houses. This stone contains 30-40% iron oxide; this can make it extremely hard to extract and dress. Having

studied the block in order to determine and anticipate the natural fault lines of the stone, the quarrymen first carve a series of rectilinear holes into the block. Iron wedges are then hammered into this line of holes. The shockwaves produced by the quarrymen's sledgehammers cause the stone to split along a straight line.

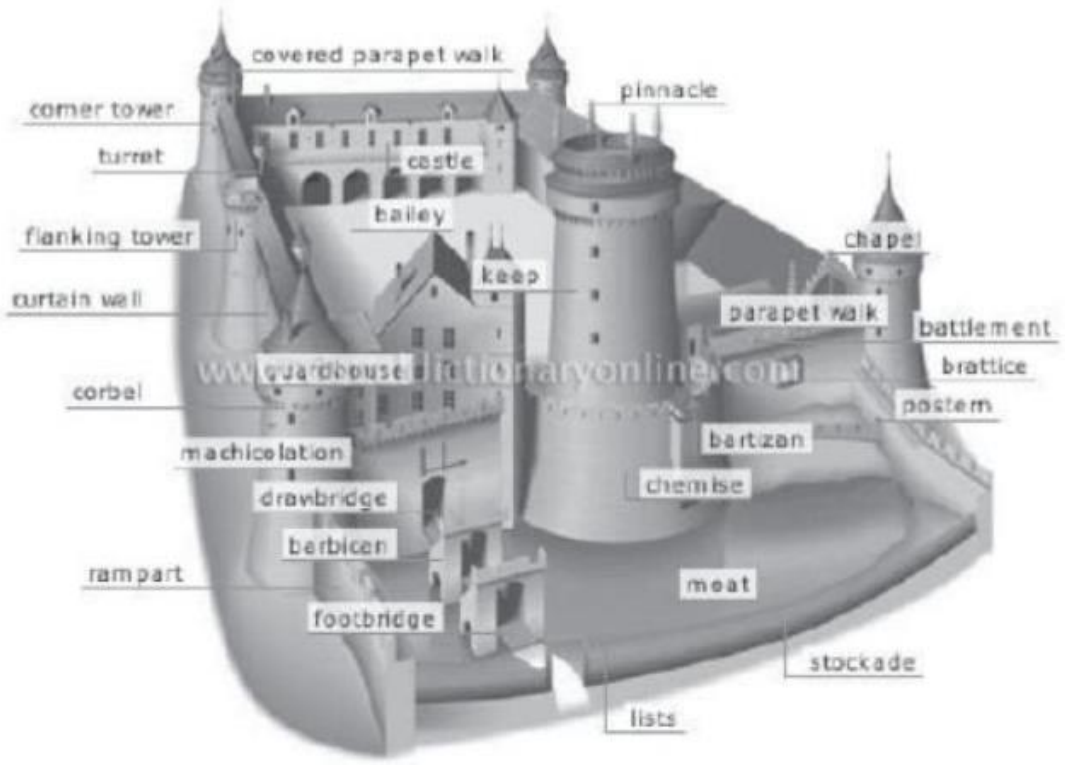
The highest quality blocks are dressed to produce lintels, voussoirs, corbels, ashlars etc. The medium quality blocks are roughly shaped by the stonecutters and used on the uncoursed curtain walls, and as facing stones on the castle's inner walls. There are water-filled clay pits in the forest. Clay is taken from these pits, cleaned and purged. It is then shaped in wooden moulds to form bricks. After the bricks have been left to air-dry, they are fired in a wood fired kiln for about 12 hours, at roughly 1000°c.

F. The mortar is the "glue" used to bind the castle's stones. It is made up of precise doses of lime, sand and water. The people working there wear the tunics, skirts and headgear that they might have worn then, but they wear these over jeans and shoes with reinforced toes. They mix their mortar primarily as they would have done then, using sand they dig themselves, but they are not allowed to use the extremely effective hot lime from medieval days, because of its toxicity, and so they add a modem chemical ingredient instead, to achieve the same effect.

Workers in the Mid Age obviously were unaware of it and some died earlier by inhaling toxic gas. And so, we met many wonderful people who do not pretend to be anything but modern human beings practicing an old technique and finding out what it would have felt like, as much as possible, to do it with only the resources of an older time.

G. We also learned that even if there is a straight lintel across a doorway, you will usually find an arch of stones built into the wall differently. Because of the physics of an arch, which channels the weight above it down into whatever is supporting it at each side

instead of pressing down in the middle, this helps to take a lot of the weight off of the lintel itself, whether it is free standing or buried in the wall against the impact of warfare. The arch is the strongest element for spanning space in stone architecture. This is why, in ancient ruins, you will often find the entire wall missing, and the arched windows and doorways still standing, in beautiful patterns against the sky



Questions 1-4

Instructions to follow

- Do the following statements agree with the information given in the Reading Passage?
- In boxes 1-4 on your answer sheet, write

TRUE If the statement is true
FALSE If the statement is false
NOT GIVEN If the information is not given in the passage

1. The French people would not abandon his idea in favor of a realistic one.
2. One aim of the castle is to show the ancestral achievement to the public.
3. Short lifespan of workers was due to overdue heating.
4. stones were laid not in a straight line arrangement to avoid damaging or collapsing.

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Questions 5-10

Instructions to follow

- Complete the following summary of the paragraphs of Reading Passage, using A-L from the following options for each answers.
- Write your answers in boxes 5-10 on your answer sheet.

Limestone Processing

When 5 _____ found a suitable block, they began to cut lines of 6 _____ into it. 7 _____ were used and knocked into and generated shockwaves to make stone 8 _____. Different qualities of blocks would be used in different places of the castle. On the other hand, 9 _____ were shaped from clay in a mould and went through a process of 10 _____ for about 12 hours.

A metal wedges
B hammer handle
C lift
D Masons
E patterns
F heating
G bricks
H wood
I experts
J split
K walls
A holes

Questions 11-13

Instructions to follow

- Choose three correct letter A-F.
- Write your answers in boxes 11-13 on your answer sheet.

Why does the castle building project last 10 years for just half progress?

A They lack of enough funds
B Guedelon castle needs a time-consuming design
C Workers obeyed modem working hours
D Their progress were delayed by unpredictable weather
E Guedelon castle need to receive valuable visitors

F They used old techniques and skills

G Stone processing need more labour and time

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Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26 which are based on Reading Passage 2

Are Artists Liars?

A. Shortly before his death, Marlon Brando was working on a series of instructional videos about acting, which he called "Lying for a Living". On the surviving footage, Brando can he seen dispensing gnomic advice on his craft to a group of enthusiastic, if somewhat bemused, Hollywood stars, including Leonardo Di Caprio and Sean Penn. Brando also recruited random people from the Los Angeles street and persuaded them to improvise (the footage is said to include a memorable scene featuring two dwarves and a giant Samoan). "If you can lie, you can act." Brando told Jod Kaftan, a writer for Rolling Stone and one of the few people to have viewed the footage. "Are you good at lying?" asked Kaftan. "Jesus." said Brando, "I'm fabulous at it".

B. Brando was not the first person to note that the line between an artist and a liar is a line one. If art is a kind of lying, then lying is a form of art, albeit of a lower order-as Oscar Wilde and Mark Twain have observed. Indeed, lying and artistic storytelling spring from a common neurological root-one that is exposed in the cases of psychiatric patients who suffer from a particular kind of impairment. Both liars and artists refuse to accept the tyranny of reality. Both carefully craft stories that are worthy of belief – a skill requiring intellectual sophistication, emotional sensitivity and physical self-control (liars are writers and performers of their own work). Such parallels are hardly coincidental, as I discovered while researching my book on lying.

C. case study published in 1985 by Antonio Damasio, a neurologist, tells the story of a middle-aged woman with brain damage caused by a series of strokes. She retained cognitive abilities, including coherent speech, but what she actually said was rather unpredictable. Checking her knowledge of contemporary events, Damasio asked her about the Falklands War. In the language of psychiatry, this woman was “confabulating”. Chronic confabulation is a rare type of memory problem that affects a small proportion of brain damaged people. In the literature it is defined as “the production of fabricated, distorted or misinterpreted memories about oneself or the world, without the conscious intention to deceive”.

Whereas amnesiacs make errors of omission, there are gaps in their recollections they find impossible to fill – confabulators make errors of commission: they make tilings up. Rather than forgetting, they are inventing. Confabulating patients are nearly always oblivious to their own condition, and will earnestly give absurdly implausible explanations of why they’re in hospital, or talking to a doctor. One patient, asked about his surgical sear, explained that during the Second World War he surprised a teenage girl who shot him three times in the head, killing him, only for surgery to bring him back to life. The same patient, when asked about his family, described how at various times they had died in his arms, or had been killed before his eyes. Others tell yet more fantastical tales, about trips to the moon, fighting alongside Alexander in India or seeing Jesus on the Cross. Confabulators aren’t out to deceive. They engage in what Morris Moscovitch, a neuropsychologist, calls “honest lying”. Uncertain and obscurely distressed by their uncertainty, they are seized by a “compulsion to narrate”: a deep-seated need to shape, order and explain what they do not understand. Chronic confabulators are often highly inventive at the verbal level, jamming together words in nonsensical but suggestive ways: one patient, when asked what happened to Queen Marie Antoinette of France, answered that she had been “suicided” by her family. In a sense, these patients are like novelists,

as described by Henry James: people on whom “nothing is wasted”. Unlike writers, however, they have little or no control over their own material.

D. The wider significance of this condition is what it tells us about ourselves. Evidently, there is a gushing river of verbal creativity in the normal human mind, from which both artistic invention and lying are drawn. We are born storytellers, spinning narrative out of our experience and imagination, straining against the leash that keeps us tethered to reality. This is a wonderful thing; it is what gives us our ability to conceive of alternative futures and different worlds. And it helps us to understand our own lives through the entertaining stories of others. But it can lead us into trouble, particularly when we try to persuade others that our inventions are real. Most of the time, as our stories bubble up to consciousness, we exercise our cerebral censors, controlling which stories we tell, and to whom. Yet people lie for all sorts of reasons, including the fact that confabulating can be dangerously fun.

E. During a now-famous libel case in 1996, Jonathan Aitken, a former cabinet minister, recounted a tale to illustrate the horrors he endured after a national newspaper tainted his name. The case, which stretched on for more than two years, involved a series of claims made by the Guardian about Aitken’s relationships with Saudi arms dealers, including meetings he allegedly held with them on a trip to Paris while he was a government minister. Whitt amazed many in hindsight was the sheer superfluity of the lies Aitken told during his testimony. Aitken’s case collapsed in June 1997, when the defence finally found indisputable evidence about his Paris trip. Until then, Aitken’s charm, fluency and flair for theatrical displays of sincerity looked as if they might bring him victory, they revealed that not only was Aitken’s daughter not with him that day (when he was indeed doorstepped), but also that the minister had simply got into his car and drove off, with no vehicle in pursuit.

F. Of course, unlike Aitken, actors, playwrights and novelists are not literally attempting to deceive us, because the rules are laid out in advance: come to the theatre, or open this book, and we'll lie to you. Perhaps this is why we feel it necessary to invent art in the first place: as a safe space into which our lies can be corralled, and channeled into something socially useful. Given the universal compulsion to tell stories, art is the best way to refine and enjoy the particularly outlandish or insightful ones. But that is not the whole story. The key way in which artistic "lies' ' differ from normal lies, and from the "honest lying" of chronic confabulators, is that they have a meaning and resonance beyond their creator. The liar lies on behalf of himself; the artist tells lies on behalf of everyone. If writers have a compulsion to narrate, they compel themselves to find insights about the human condition. Mario Vargas Llosa has written that novels "express a curious truth that can only he expressed in a furtive and veiled fashion, masquerading as what it is not." Art is a lie whose secret ingredient is truth.

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Questions 14-19

Instructions to follow

- Reading Passage 2 has six paragraphs, A-F.
- Choose the correct heading for each paragraph from the list of headings below.
- Write the correct number i-viii, in boxes 14-19 on your answer sheet.

14 Paragraph A

15 Paragraph B

16 Paragraph C

17 Paragraph D

18 Paragraph E

19 Paragraph F

List of Headings

i	Unsuccessful deceit
ii	Biological basis between liars and artists
iii	How to lie in an artistic way
iv	Confabulations and the exemplifiers
v	The distinction between artists and common liars
vi	The fine line between liars and artists
vii	The definition of confabulation
viii	Creativity when people lie

Questions 20-21

Instructions to follow

- Choose TWO letters, A-E
- Write the correct letter in boxes 20-21 on your answer sheet.

Which TWO of the following statements about people suffering from confabulation are true?

A They have lost cognitive abilities

B They do not deliberately tell a lie

C They are normally aware of the condition

D They do not have the impetus to explain what they do not understand

E They try to make up stories

Questions 22-23

Instructions to follow

- Choose TWO letters, A-E.
- Write the correct letters in boxes 22-23 on your answer sheet.

Which TWO of the following statements about playwrights and novelists are true?

A They give more meaning to the stories

B they tell lies for the benefit of themselves

C They have nothing to do with the truth out there

D We can be misled by them if not careful

E We know there are lie in the content

Questions 24-26

Instructions to follow

- Complete the summary below.
- Choose NO MORE THAN TWO WORDS from the passage for each answer
- Write your answers in boxes 24-26 on your answer sheet

A 24 ..... accused Jonathan Aitken, a former cabinet minister, who was selling and buying with 25 ..... . Aitken's case collapsed in June 1997, when the defence finally found indisputable evidence about his Paris trip. He was deemed to have his 26 ..... . They revealed that not only was Aitken's daughter not with him that day, but also that the minister had simply got into his car and drove off, with no vehicle in pursuit.

Section 3

Instructions to follow

- You should about 20 minutes on Questions 27-40 which are based on Reading Passage 3

Music and the emotions

Neuroscientist Jonah Lehrer considers the emotional power of music

Why does music make us feel? One the one hand, music is a purely abstract art form, devoid of language or explicit ideas. And yet, even though music says little, it still manages to touch us deeply. When listening to our favourite songs, our body betrays all the symptoms of emotional arousal. The pupils in our eyes dilate, our pulse and blood pressure rise, the electrical conductance of our skin is lowered, and the cerebellum, a brain region associated with bodily movement, becomes strangely active. Blood is even redirected to the muscles in our legs. In other words, sound stirs us at our biological roots.

A recent paper in *Nature Neuroscience* by a research team in Montreal, Canada, marks an important step in revealing the precise underpinnings of the potent pleasurable stimulus' that is music. Although the study involves plenty of fancy technology, including functional magnetic resonance imaging (fMRI) and ligand-based positron emission tomography (PET) scanning, the experiment itself was rather straightforward. After screening 217 individuals who responded to advertisements requesting people who experience 'chills' to instrumental music, the scientists narrowed down the subject pool to ten. They then asked the subjects to bring in their playlist of favourite songs – virtually every genre was represented, from techno to tango – and played them the music while their brain activity

was monitored. Because the scientists were combining methodologies (PET and fMRI), they were able to obtain an impressively exact and detailed portrait of music in the brain. The first thing they discovered is that music triggers the production of dopamine – a chemical with a key role in setting people's moods – by the neurons (nerve cells) in both the dorsal and ventral regions of the brain. As these two regions have long been linked with the experience of pleasure, this finding isn't particularly surprising.

What is rather more significant is the finding that the dopamine neurons in the caudate – a region of the brain involved in learning stimulus-response associations, and in anticipating food and other 'reward' stimuli – were at their most active around 15 seconds before the participants' favourite moments in the music. The researchers call this the 'anticipatory phase' and argue that the purpose of this activity is to help us predict the arrival of our favourite part. The question, of course, is what all these dopamine neurons are up to. Why are they so active in the period *preceding* the acoustic climax? After all, we typically associate surges of dopamine with pleasure, with the processing of *actual* rewards. And yet, this cluster of cells is most active when the 'chills' have yet to arrive, when the melodic pattern is still unresolved.

One way to answer the question is to look at the music and not the neurons. While music can often seem (at least to the outsider) like a labyrinth of intricate patterns, it turns out that the most important part of every song or symphony is when the patterns break down, when the sound becomes unpredictable. If the music is too obvious, it is annoyingly boring, like an alarm clock. Numerous studies, after all, have demonstrated that dopamine neurons quickly adapt to predictable rewards. If we know what's going to happen next, then we don't get excited. This is why composers often introduce a keynote in the beginning of a song, spend most of the rest of the piece in the studious avoidance of the pattern, and then finally repeat it only at the end. The longer we are denied the

pattern we expect, the greater the emotional release when the pattern returns, safe and sound.

To demonstrate this psychological principle, the musicologist Leonard Meyer, in his classic book *Emotion and Meaning in Music* (1956), analysed the 5th movement of Beethoven's String Quartet in C-sharp minor, Op. 131. Meyer wanted to show how music is defined by its flirtation with – but not submission to – our expectations of order. Meyer dissected 50 measures (bars) of the masterpiece, showing how Beethoven begins with the clear statement of a rhythmic and harmonic pattern and then, in an ingenious tonal dance, carefully holds off repeating it. What Beethoven does instead is suggest variations of the pattern. He wants to preserve an element of uncertainty in his music, making our brains beg for the one chord he refuses to give us. Beethoven saves that chord for the end.

According to Meyer, it is the suspenseful tension of music, arising out of our unfulfilled expectations, that is the source of the music's feeling. While earlier theories of music focused on the way a sound can refer to the real world of images and experiences – its 'connotative' meaning – Meyer argued that the emotions we find in music come from the unfolding events of the music itself. This 'embodied meaning' arises from the patterns the symphony invokes and then ignores. It is this uncertainty that triggers the surge of dopamine in the caudate, as we struggle to figure out what will happen next. We can predict some of the notes, but we can't predict them all, and that is what keeps us listening, waiting expectantly for our reward, for the pattern to be completed.

Questions 27-31

Instructions to follow

- Complete the summary below.
- Choose NO MORE THAN TWO WORDS from the passage for each answer.
- Write your answers in boxes 27-31 on your answer sheet.

The Montreal Study

Participants, who were recruited for the study through advertisements, had their brain activity monitored while listening to their favourite music. It was noted that the music stimulated the brain's neurons to release a substance called (27)..... in two of the parts of the brain which are associated with feeling (28).....

Researchers also observed that the neurons in the area of the brain called the (29)..... were particularly active just before the participants' favourite moments in the music – the period known as the (30)..... Activity in this part of the brain is associated with the expectation of 'reward' stimuli such as (31).....

Questions 32-36

Instructions to follow

- Choose the correct letter A, B, C or D.
- Write the correct letter in boxes 32-36 on your answer sheet.

32 What point does the writer emphasise in the first paragraph?

A ○ how dramatically our reactions to music can vary
B ○ how intense our physical responses to music can be
C ○ how little we know about the way that music affects us
D ○ how much music can tell us about how our brains operate

33 What view of the Montreal study does the writer express in the second paragraph?

A ○ Its aims were innovative.
B ○ The approach was too simplistic.
C ○ It produced some remarkably precise data.
D ○ The technology used was unnecessarily complex.

34 What does the writer find interesting about the results of the Montreal study?

A ○ the timing of participants' neural responses to the music
B ○ the impact of the music of participants' emotional state
C ○ the section of participants' brains which was activated by the music
D ○ the type of music which had the strongest effect on participants' brains

35 Why does the writer refer to Meyer's work on music and emotion?

- A to propose an original theory about the subject
- B to offer support for the findings of the Montreal study
- C to recommend the need for further research into the subject
- D to present a view which opposes that of the Montreal researchers

36 According to Leonard Meyer, what causes the listener's emotional response to music?

- A the way that the music evokes poignant memories in the listener
- B the association of certain musical chords with certain feelings
- C the listener's sympathy with the composer's intentions
- D the internal structure of the musical composition

Questions 37-40

Instructions to follow

- Complete each sentence with the correct ending A-F, below.
- Write the correct letter, A-F, in boxes 37-40 on your answer sheet.

37 The Montreal researchers discovered that

A B C D E F

38 Many studies have demonstrated that

A B C D E F

39 Meyer's analysis of Beethoven's music shows that

A B C D E F

40 Earlier theories of music suggested that

A B C D E F

A our response to music depends on our initial emotional state.

B neuron activity decreases if outcomes become predictable.

C emotive music can bring to mind actual pictures and events.

D experiences in our past can influence our emotional reaction to music.

E emotive music delays giving listeners what they expect to hear.

F neuron activity increases prior to key points in a musical piece.

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IELTS Reading Test 10

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-14 which are based on Reading Passage 1

Voyage of Going: beyond the blue line 2

A. One feels a certain sympathy for Captain James Cook on the day in 1778 that he "discovered" Hawaii. Then on his third expedition to the Pacific, the British navigator had explored scores of islands across the breadth of the sea, from lush New Zealand to the lonely wastes of Easter Island This latest voyage had taken him thousands of miles north from the Society Islands to an archipelago so remote that even the old Polynesians back on Tahiti knew nothing about it. Imagine Cook's surprise, then, when the natives of Hawaii came paddling out in their canoes and greeted him in a familiar tongue, one he had heard on virtually every mote of inhabited land he had visited Marveling at the ubiquity of this Pacific language and culture, he later wondered in his journal: "How shall we account for this Nation spreading it self so far over this Vast ocean?"

B. Answers have been slow in coming. But now a startling archaeological find on the island of Éfaté, in the Pacific nation of Vanuatu, has revealed an ancient seafaring people, the distant ancestors of today's Polynesians, taking their first steps into the unknown. The discoveries there have also opened a window into the shadowy world of those early voyagers. At the same time, other pieces of this human puzzle are turning up in unlikely places. Climate data gleaned from slow-growing corals around the Pacific and from

sediments in alpine lakes in South America may help explain how, more than a thousand years later, a second wave of seafarers beat their way across the entire Pacific.

C. "What we have is a first- or second-generation site containing the graves of some of the Pacific's first explorers," says Spriggs, professor of archaeology at the Australian National University and co-leader of an international team excavating the site. It came to light only by luck. A backhoe operator, digging up topsoil on the grounds of a derelict coconut plantation, scraped open a grave—the first of dozens in a burial ground some 3,000 years old. It is the oldest cemetery ever found in the Pacific islands, and it harbors the bones of an ancient people archaeologists call the Lapita, a label that derives from a beach in New Caledonia where a landmark cache of their pottery was found in the 1950s. They were daring blue-water adventurers who roved the sea not just as explorers but also as pioneers, bringing along everything they would need to build new lives—their families and livestock, taro seedlings and stone tools.

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D. Within the span of a few centuries the Lapita stretched the boundaries of their world from the jungle-clad volcanoes of Papua New Guinea to the loneliest coral outliers of Tonga, at least 2,000 miles eastward in the Pacific. Along the way they explored millions of square miles of unknown sea, discovering and colonizing scores of tropical islands never before seen by human eyes: Vanuatu, New Caledonia, Fiji, Samoa.

E. What little is known or surmised about them has been pieced together from fragments of pottery, animal bones, obsidian flakes, and such oblique sources as comparative linguistics and geochemistry. Although their voyages can be traced back to the northern islands of Papua New Guinea, their language-variants of which are still spoken across the Pacific-came from Taiwan. And their peculiar style of pottery decoration, created by pressing a carved stamp into the clay, probably had its roots in the northern

Philippines. With the discovery of the Lapita cemetery on Éfaté, the volume of data available to researchers has expanded dramatically. The bones of at least 62 individuals have been uncovered so far-including old men, young women, even babies—and more skeletons are known to be in the ground Archaeologists were also thrilled to discover six complete Lapita pots. It's an important find, Spriggs says, for it conclusively identifies the remains as Lapita. "It would be hard for anyone to argue that these aren't Lapita when you have human bones enshrined inside what is unmistakably a Lapita urn."

F. Several lines of evidence also undergird Spriggs's conclusion that this was a community of pioneers making their first voyages into the remote reaches of Oceania. For one thing, the radiocarbon dating of bones and charcoal places them early in the Lapita expansion. For another, the chemical makeup of the obsidian flakes littering the site indicates that the rock wasn't local; instead it was imported from a large island in Papua New Guinea's Bismarck Archipelago, the springboard for the Lapita's thrust into the Pacific. A particularly intriguing clue comes from chemical tests on the teeth of several skeletons. DNA teased from these ancient bones may also help answer one of the most puzzling questions in Pacific anthropology: Did all Pacific islanders spring from one source or many? Was there only one outward migration from a single point in Asia, or several from different points? "This represents the best opportunity we've had yet," says Spriggs, "to find out who the Lapita actually were, where they came from, and who their closest descendants are today.

G. "There is one stubborn question for which archaeology has yet to provide any answers: How did the Lapita accomplish the ancient equivalent of a moon landing, many times over? No one has found one of their canoes or any rigging, which could reveal how the canoes were sailed. Nor do the oral histories and traditions of later Polynesians offer any insights, for they segue into myth long before they reach as far back in time as the

Lapita." All we can say for certain is that the Lapita had canoes that were capable of ocean voyages, and they had the ability to sail them," says Geoff Irwin, a professor of archaeology at the University of Auckland and an avid yachtsman. Those sailing skills, he says, were developed and passed down over thousands of years by earlier mariners who worked their way through the archipelagoes of the western Pacific making short crossings to islands within sight of each other. Reaching Fiji, as they did a century or so later, meant crossing more than 500 miles of ocean, pressing on day after day into the great blue void of the Pacific. What gave them the courage to launch out on such a risky voyage?

H. The Lapita's thrust into the Pacific was eastward, against the prevailing trade winds, Irwin notes. Those nagging headwinds, he argues, may have been the key to their success. "They could sail out for days into the unknown and reconnoiter, secure in the knowledge that if they didn't find anything, they could turn about and catch a swift ride home on the trade winds. It's what made the whole thing work." Once out there, skilled seafarers would detect abundant leads to follow to land: seabirds and turtles, coconuts and twigs carried out to sea by the tides, and the afternoon pileup of clouds on the horizon that often betokens an island in the distance. Some islands may have broadcast their presence with far less subtlety than a cloud bank. Some of the most violent eruptions anywhere on the planet during the past 10,000 years occurred in Melanesia, which sits nervously in one of the most explosive volcanic regions on Earth. Even less spectacular eruptions would have sent plumes of smoke billowing into the stratosphere and rained ash for hundreds of miles. It's possible that the Lapita saw these signs of distant islands and later sailed off in their direction, knowing they would find land. For returning explorers, successful or not, the geography of their own archipelagoes provided a safety net to keep them from overshooting their home ports and sailing off into eternity.

I. However they did it, the Lapita spread themselves a third of the way across the Pacific, then called it quits for reasons known only to them. Ahead lay the vast emptiness of the central Pacific, and perhaps they were too thinly stretched to venture farther. They probably never numbered more than a few thousand in total, and in their rapid migration eastward they encountered hundreds of islands—more than 300 in Fiji alone. Still, more than a millennium would pass before the Lapita's descendants, a people we now call the Polynesians, struck out in search of new territory.

Questions 1-7

Instructions to follow

- Do the following statements agree with the claims of the writer in Reading Passage 1?
- In boxes 1-7 on your answer sheet, write
  YES if the statement agrees with the information
  NO if the statement contradicts the information
  NOT GIVEN if there is no information on this

1 Captain Cook once expected the Hawaii might speak another language of people from other pacific islands.

2 Captain Cook depicted a number of cultural aspects of Polynesians in his journal.

3 Professor Spriggs and his research team went to the Efate to try to find the site of an ancient cemetery.

4 The Lapita completed a journey of around 2,000 miles in a period less than a century.

5 The Lapita were the first inhabitants in many pacific islands.

6 The unknown pots discovered in Efate had once been used for cooking.

7 The um buried in the Efate site was plain as it was without any decoration.

Questions 8-10

Instructions to follow

- Complete the summary of the following paragraphs of Reading Passage, using NO MORE THAN TWO WORDS from the Reading Passage for each answer.
- Write your answers in boxes 8-10 on your answer sheet.

Scientific Evidence found in Efate site

Tests show the human remains and the charcoal found in the buried um are from the start of the Lapita period. Yet The 8 ..... covering many of the Efate sites did not come from that area.

Then examinations carried out on the 9 ..... discovered at Efate site reveal that not everyone buried there was a native living in the area DNS could identify the Lapita's nearest 10 ..... present-days.

Questions 11-13

Instructions to follow

- Answer the questions below. Choose NO MORE THAN THREE WORDS AND/OR A NUMBER from the passage for each answer.

11 What did the Lapita travel in when they crossed the oceans?

12 In Irwins's view, what would the Latipa have relied on to bring them fast back to the base?

13 Which sea creatures would have been an indication to the Lapita of where to find land?

Section 2

Instructions to follow

- You should spend 20 minutes on Questions 14-26 which are based on Reading Passage 2

What's the best smartphone on the market?

The new HTC 4Gis, for now at least, restricted from showing us its true potential since, as Australia's first 4G phone ,it is ahead of its time and must wait for the 4G infrastructure to be put in place before it can really be appreciated. As things stand, and limited to used as a 3G handset, the HTC stack up well against its competitors though. There is a very generous screen size of 4.3 inches, and the graphics and screen resolution are very sharp. This is perhaps both the phone's greatest strength and its greatest weakness because, for all the good of having a large, sharp screen image, this comes at a cost; that being that the HTC is a bulkier, weightier model than most of its peers. Size issue aside however, you cannot help but admire the sheer range of features on this handset. An 8-megapixel camera, and a front-side 1.2 megapixel voice calls, and high-definition image quality should you switch to recording mode make the need to carry any casual photographic or recording equipment around with you almost redundant. Perhaps no more than a blip, as company engineers and programmers assure us a fix will be issued shortly, but it must be said that the battery life is slightly disappointing; a regular daily charge is simply a necessity as any longer would leave you, well flat!

The nexus employs energy-efficient screen technology, making it an instant hit for the many who have been thus far frustrated by the lack of battery longevity smartphones have offered up. Design isn't compromised either and this handset is light and compact

(the practicalities covered then) not to mention sleek and funky. The 5 megapixel rear-facing camera is handy to have in an emergency, but can hardly be relied upon to produce the sort of imagery we have come to expect from such products. Autofocus and an inbuilt flash do help to enhance image quality, but this device falls just a few too many pixels short and so trails behind its rivals in the multimedia department; and not by a neck, but several lengths at least.

The iPhone series have been market leading devices ever since Apple entered the smartphone sector, and seldom is there more excitement in techie circles than when a new iPhone model is released. Cue fierce applause and much gasping then, for Apple's latest offering is now on sale in a store near you! The new iPhone has the sharpest and clearest display of any smartphone on the market, and, quite simply, in almost every aspect of design, it is king. In fact, the quality of kit gone into the phone almost beggars belief and gives the handset the feel of being indestructible, which, given the quality of manufacture, is not too far wide of the mark. There are, of course, the trademark front and rear-display cameras on the new iPhone, and, though at 8 megapixels the main camera is, well, hardly earth-shatteringly impressive, don't be too quick to write off the iPhone's multimedia credentials. Remember

To start with , the screen and recording devices operate in High Definition, and let's not overlook the vast number of complementary media apps – Apple is in a league of its own in the apps market, and this is perhaps one of the main reasons it has so many diehard fans. Another factor which is crucial to this device's popularity is the fact that you can leave home confident there will be no need to beg for a charger from someone in the office halfway through the day. Battery life on this handset is not market- leading, but the iPhone certainly outperforms its nearest rivals in that department. A genuine contender for best buy.

The new Motorola should not be thought of so much as a smartphone, as a mini-computer, such is the manner in which this device performs. With massive processing and memory capabilities, Motorola users can download video, Image and music files without giving a second thought to whether or not there is enough unused space, and, with 16GB internal memory and scope to add on another 32GB via an external memory card, why would you? The main camera though, given how high-spec everything else about this device seems to be, it somewhat of a disappointment. At only 5 megapixels, you do wonder what the designers were thinking; after all, had they even matched their rivals at HTC in this area, the Motorola would have been a standout handset that left its competitors trailing in its wake. As things stand, the Motorola is a definite player and will appeal to those for whom the smartphone is primarily a work-related device, as its unrivalled processing capability with most office software make it the perfect travel companion for every busy businessman and businesswoman out there. However, Motorola has missed a trick or two in failing to target the many smartphone buyers more interested in entertainment features like high-megapixel cameras. Had they combined their download power with a better 'picture snapper' they could have cornered the entire market; this is an opportunity lost, you feel.

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Questions 14 – 20

Instructions to follow

- Look at the following statement, questions 14-20, and decide which smartphone model, A-D the statement relates to.
- Write the correct letter, A-D.

14 This phone will not be able to showcase all of its strengths until the country's communication system has been upgraded. ……

15 This phone is a very practical device that can process information quickly and has very high storage capacity. ……

16 This phone's greatest asset is also a liability which makes it more burdensome to carry around. ……

17 This phone would stand up to a lot of abuse; such is the quality of manufacture gone into it. ……

18 This phone could have threatened to dominate the smartphone market had it not overlooked an important entertainment feature. ……

19 This phone provides access to a lot more of something than any of the rival phone models can. ……

20 This phone employs special technology designed to conserve energy and enhance battery life. ……

A HTC 4G

B NEXUS

C iphone

D Motorola

Questions 21- 23

Instructions to follow

- Complete each sentence with the correct ending, A-E, below.
- Write the correct letter, A-E in boxes 21 -23 on your answer sheet.

21 The HTC EVO 4G has such a high-quality camera ……..

22 The failures of the Nexus S Camera are such ……..

23 The functionality of the Motorola Atrix Can be likened to …….

A that of a small computer, Except in the memory and processing stakes where it comes up short.

B that the excellent flash and focus functions are still not enough to compensate.

C that of devices specifically designed to execute far more complex tasks than a phone is supposed to.

D that it is no longer necessary to carry extra camera and recording equipment unless you are looking for professional results.

E that professional and amateur photographers alike will find that it satisfies all their needs.

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Questions 24-26

Instructions to follow

- Do the following statements agree with the information given in the reading passage? In boxes 24-26 on your answer sheet, write
  YES if the statement agrees with the information
  NO if the statement contradicts the information
  NOT GIVEN if there is no information on this.

24 In order to produce an energy-efficient phone, the Nexus S manufacturer. Have compromised on certain design features. ……

25 The iPhone is superior to its rivals in many design aspects. …….

26 The Motorola Atrix is unlikely to be a huge success since there are more. Smartphone users who use their phones for entertainment than for work purposes. …….

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Section 3

Instructions to follow

- You should spend 20 minutes on Questions 27-40 which are based on Reading Passage 3

Sunset for the Oil Business

A. Members of the Department Analysis Centre (ODAC) recently met in London and presented technical data that support their grim forecast that the world is perilously close to running out of oil. Leading lights of this moment, including the geologist Colin Campbell, rejected rival views presented by American geological survey and the international energy agency that contradicted their findings. Dr. Campbell even decried the amazing display of ignorance, denial and obfuscation by government, industry and academics on this topic.

B. So is the oil really running out? The answer is easy: Yes. Nobody seriously disputes the notion that oil is, for all practical purposes, a non-renewable resource that will run out some day, be that years or decades away. The harder question is determining when precisely oil will begin to get scarce. And answering that question involves scaling Hubbert's peak.

C. M. King Hubbert, a Shell geologist of legendary status among depletion experts, forecast in 1956 that oil production in the United States would peak in the early 1970s and then slowly decline, in something resembling a bell shaped curve. At the time, his forecast was controversial, and many rubbish it. After 1970, however, empirical evidence proved him correct: oil production in America did indeed peak and has been

in decline ever since.

D. Dr Hubbert's analysis drew on the observation that oil production in a new area typically rises quickly at first, as the easiest and cheapest reserves are tapped. Over time, reservoirs age and go into decline, and so lifting oil becomes more expensive. Oil from that area then becomes less competitive in relation to other fuels, or to oil from other areas. As a result, production slows down and usually tapers off and declines. That, he argued, made for a bell-shaped curve.

E. His successful prediction has emboldened a new generation of geologists to apply his methodology on a global scale. Chief among them are the experts at ODAC, who worry that the global peak in production will come in the next decade. Dr Campbell used to argue that the peak should have come already; he now thinks it is just round the comer. A heavyweight has now joined this gloomy chorus. Kenneth Deffeyes of Princeton University argues in a lively new book ("The View from Hubbert's Peak") that global oil production could peak as soon as 2004.

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F. That sharply contradicts mainstream thinking. America's Geological Survey prepared an exhaustive study of oil depletion last year (in part to rebut Dr Campbell's arguments) that put the peak of production some decades off. The IEA has just weighed in with its new "World Energy Outlook", which foresees enough oil to comfortably meet demand to 2020 from remaining reserves. René Dahan, one of ExxonMobil's top managers, goes further: with an assurance characteristic of the world's largest energy company, he insists that the world will be awash in oil for another 70 years.

G. Who is right? In making sense of these wildly opposing views, it is useful to look back at the pitiful history of oil forecasting. Doomsters have been predicting dry wells since the 1970s, but so far the oil is still gushing. Nearly all the predictions for 2000 made after

the 1970s oil shocks were far too pessimistic. America's Department of Energy thought that oil would reach $150 a barrel (at 2000 prices); even Exxon predicted a price of $100.

H. Michael Lynch of DRI-WEFA, an economic consultancy, is one of the few oil forecasters who has got things generally right. In a new paper, Dr Lynch analyses those historical forecasts. He finds evidence of both bias and recurring errors, which suggests that methodological mistakes (rather than just poor data) were the problem. In particular, he faults forecasters who used Hubbert-style analysis for relying on fixed estimates of how much "ultimately recoverable" oil there really is below ground, in the industry's jargon: that figure, he insists, is actually a dynamic one, as improvements in infrastructure, knowledge and technology raise the amount of oil which is recoverable.

I. That points to what will probably determine whether the pessimists or the optimists are right: technological innovation. The first camp tends to be dismissive of claims of forthcoming technological revolutions in such areas as deep-water drilling and enhanced recovery. Dr Deffeyes captures this end-of-technology mindset well. He argues that because the industry has already spent billions on technology development, it makes it difficult to ask today for new technology, as most of the wheels have already been invented.

J. Yet techno-optimists argue that the technological revolution in oil has only just begun. Average recovery rates (how much of the known oil in a reservoir can actually be brought to the surface) are still only around 30-35%. Industry optimists believe that new techniques on the drawing board today could lift that figure to 50-60% within a decade.

K. Given the industry's astonishing track record of innovation, it may be foolish to bet

against it. That is the result of adversity: the nationalisations of the 1970s forced Big Oil to develop reserves in expensive, inaccessible places such as the North Sea and Alaska, undermining Dr Hubbert's assumption that cheap reserves are developed first. The resulting upstream investments have driven down the cost of finding and developing wells over the last two decades from over $20 a barrel to around $6 a barrel. The cost of producing oil has fallen by half, to under $4 a barrel.

L. Such miracles will not come cheap, however, since much of the world's oil is now produced in ageing fields that are rapidly declining. The IEA concludes that global oil production need not peak in the next two decades if the necessary investments are made. So how much is necessary? If oil companies are to replace the output lost at those ageing fields and meet the world's ever-rising demand for oil, the agency reckons they must invest $1 trillion in non-OPEC countries over the next decade alone. That's quite a figure.

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Question 27-31

Instructions to follow

- Do the following statements agree with the information given in the reading passage? In boxes 27-31 on your answer sheet, write
  YES if the statement agrees with the information
  NO if the statement contradicts the information
  NOT GIVEN if there is no information on this.

27 Hubbert has a high-profile reputation amongst ODAC members.

28 Oil is likely to last longer than some other energy sources.

29 The majority of geologists believe that oil will start to run out some time this decade.

30 Over 50 percent of the oil we know about is currently being recovered.

31 History has shown that some of Hubbet's principles were mistaken.

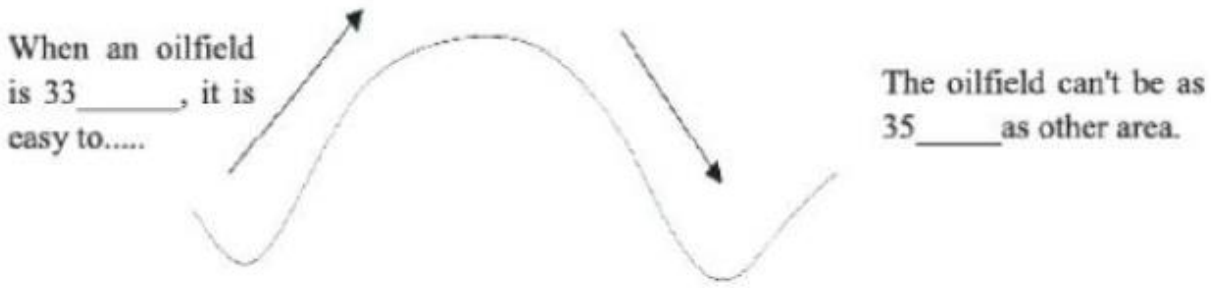
Question 32-35

Instructions to follow

- Complete the notes below
- Choose ONE WORD ONLY from the passage for each answer.
- Write your answers in boxes 32-35 on your answer sheet.

Many people believed Hubbert's theory was 32 _____ when it was originally presented.

The recovery of the oil gets more 34 _____ as the reservoir gets older



Questions 36-40

Instructions to follow

- Look at the following statements (Questions 36-40) and the people below.
- Match each statement with the correct person, A-E.
- Write the correct letter, A-E in boxes 36-40 on your answer sheet.
- NB You may use any letter more than once.

36 has found fault in geological research procedure

A ○ B ○ C ○ D ○ E ○

37 has provided the longest-range forecast regarding oil supply

A ○ B ○ C ○ D ○ E ○

38 has convinced others that oil production will follow a particular model

A ○ B ○ C ○ D ○ E ○

39 has accused fellow scientists of refusing to see the truth

A ○ B ○ C ○ D ○ E ○

40 has expressed doubt over whether improved methods of extracting oil are possible.

A ○ B ○ C ○ D ○ E ○

List of People

A Colin Campbell

B M. King Hubbert

C Kenneth Deffeyes

D Rene Dahan

E Michael Lynch

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IELTS Reading Test 11

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-13 which are based on Reading Passage 1

Alfred Nobel

The man behind the Nobel Prize

Since 1901, the Nobel Prize has been honoring men and women from all corners of the globe for outstanding achievements in physics, chemistry, medicine, literature, and for work in peace. The foundations for the prize were laid in 1895 when Alfred Nobel wrote his last will, leaving much of his wealth to the establishment of the Nobel Prize.

Alfred Nobel was born in Stockholm on October 21, 1833. His father Immanuel Nobel was an engineer and inventor who built bridges and buildings in Stockholm. In connection with his construction work Immanuel Nobel also experimented with different techniques for blasting rocks. Successful in his industrial and business ventures, Immanuel Nobel was able, in 1842, to bring his family to St. Petersburg. There, his sons were given a first class education by private teachers. The training included natural sciences, languages and literature. By the age of 17 Alfred Nobel was fluent in Swedish, Russian, French, English and German. His primary interests were in English literature and poetry as well as in chemistry and physics. Alfred's father, who wanted his sons to join his enterprise as engineers, disliked Alfred's interest in poetry and found his son rather introverted.

In order to widen Alfred's horizons his father sent him abroad for further training in

chemical engineering. During a two year period Alfred Nobel visited Sweden, Germany, France and the United States. In Paris, the city he came to like best, he worked in the private laboratory of Professor T. J. Pelouze, a famous chemist. There he met the young Italian chemist Ascanio Sobrero who, three years earlier, had invented nitroglycerine, a highly explosive liquid. But it was considered too dangerous to be of any practical use. Although its explosive power greatly exceeded that of gunpowder, the liquid would explode in a very unpredictable manner if subjected to heat and pressure. Alfred Nobel became very interested in nitroglycerine and how it could be put to practical use in construction work. He also realized that the safety problems had to be solved and a method had to be developed for the controlled detonation of nitroglycerine.

After his return to Sweden in 1863, Alfred Nobel concentrated on developing nitroglycerine as an explosive. Several explosions, including one (1864) in which his brother Emil and several other persons were killed, convinced the authorities that nitroglycerine production was exceedingly dangerous. They forbade further experimentation with nitroglycerine within the Stockholm city limits and Alfred

Nobel had to move his experimentation to a barge anchored on Lake Malaren. Alfred was not discouraged and in 1864 he was able to start mass production of nitroglycerine. To make the handling of nitroglycerine safer Alfred Nobel experimented with different additives. He soon found that mixing nitroglycerine with kieselguhr would turn the liquid into a paste which could be shaped into rods of a size and form suitable for insertion into drilling holes. In 1867 he patented this material under the name of dynamite. To be able to detonate the dynamite rods he also invented a detonator (blasting cap) which could be ignited by lighting a fuse. These inventions were made at the same time as the pneumatic drill came into general use. Together these inventions drastically reduced the cost of blasting rock, drilling tunnels, building canals and many other forms of

construction work.

The market for dynamite and detonating caps grew very rapidly and Alfred Nobel also proved himself to be a very skillful entrepreneur and businessman. Over the years he founded factories and laboratories in some 90 different places in more than 20 countries. Although he lived in Paris much of his life he was constantly traveling. When he was not traveling or engaging in business activities Nobel himself worked intensively in his various laboratories, first in Stockholm and later in other places. He focused on the development of explosives technology as well as other chemical inventions including such materials as synthetic rubber and leather, artificial silk, etc. By the time of his death in 1896 he had 355 patents.

Intensive work and travel did not leave much time for a private life. At the age of 43 he was feeling like an old man. At this time he advertised in a newspaper “wealthy, highly-educated elderly gentleman seeks a lady of mature age, versed in languages, as secretary and supervisor of household.” The most qualified applicant turned out to be an Austrian woman, Countess Bertha Kinsky. After working a very short time for Nobel she decided to return to Austria to marry Count Arthur von Suttner. In spite of this Alfred Nobel and Bertha von Suttner remained friends and kept writing letters to each other for decades. Over the years Bertha von Suttner became increasingly critical of the arms race. She wrote a famous book, Lay Down Your Arms and became a prominent figure in the peace movement. No doubt this influenced Alfred Nobel when he wrote his final will which was to include a Prize for persons or organizations who promoted peace. Several years after the death of Alfred Nobel, the Norwegian Storting (Parliament) decided to award the 1905 Nobel Peace Prize to Bertha von Suttner.

Alfred Nobel died in San Remo, Italy, on December 10, 1896. When his will was opened it

came as a surprise that his fortune was to be used for Prizes in Physics, Chemistry, Physiology or Medicine, Literature and Peace. The executors of his will were two young engineers, Ragnar Sohlman and Rudolf Lilljequist. They set about forming the Nobel Foundation as an organization to take care of the financial assets left by Nobel for this purpose and to coordinate the work of the Prize-Awarding Institutions. This was not without its difficulties since the will was contested by relatives and questioned by authorities in various countries.

Alfred Nobel's greatness lay in his ability to combine the penetrating mind of the scientist and inventor with the forward-looking dynamism of the industrialist. Nobel was very interested in social and peace-related issues and held what were considered radical views in his era. He had a great interest in literature and wrote his own poetry and dramatic works. The Nobel Prizes became an extension and a fulfillment of his lifetime interests.

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Questions 1-6

Instructions to follow

- Do the following statements agree with the information given in the reading passage? In boxes 1-6 on your answer sheet, write
  TRUE if the statement agrees with the information
  FALSE if the statement contradicts the information
  NOT GIVEN if there is no information on this.

1. The first Nobel Prize was awarded in 1895.
2. Nobel's father wanted his son to have a better education than what he had had.
3. Nobel was an unsuccessful businessman.
4. Bertha von Suttner was selected by Nobel himself for the first peace prize.
5. The Nobel Foundation was established after the death of Nobel

6 Nobel's social involvement was uncommon in the 1800's.

Questions 7-13

Instructions to follow

- Complete the notes below using NO MORE THAN TWO WORDS from the passage.
- Write your answers in boxes 7-13 on your answer sheet.

Education:

Having accumulated a great fortune in his business, Nobel's father determined to give his son the best education and sent him abroad to be trained in 7 ..... during Nobel's study in Paris, he worked in a private laboratory, where he came in contact with a young engineer 8 .....and his invention nitroglycerine, a more powerful explosive than 9 .....

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Benefits in construction works:

Nobel became really interested in this new explosive and experimented on it. But nitroglycerine was too dangerous and was banned for experiments within the city of 10 .....
So Nobel had to move his experiments to a lake. To make nitroglycerine easily usable, Nobel invented dynamite along with 11 .....while in the meantime 12 .....became popular, all of which dramatically lowered the 13 .....of construction works.

Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-27 which are based on Reading Passage 2

The Birth Of Writing

Writing was first invented by the Sumerians in ancient Mesopotamia before 3,000 B.C. It was also independently invented in Meso-America before 600 BC and probably independently invented in China before 1,300 BC. It may have been independently invented in Egypt around 3,000 BC although given the geographical proximity between Egypt and Mesopotamia the Egyptians may have learnt writing from the Sumerians.

There are three basic types of writing systems. The written signs used by the writing system could represent either a whole word, a syllable or an individual sound. Where the written sign represents a word, the system is known as logographic as it uses logograms which are written signs that represent a word. The earliest writing systems such as the Sumerian cuneiform, Egyptian hieroglyphics and Mayan glyphs are predominantly logo graphics as are modern Chinese and Japanese writing systems. Where the written sign represents a syllable the writing system is known as syllabic. Syllabic writing systems were more common in the ancient world than they are today. The Linear A and B writing systems of Minoan Crete and Mycenaean Greece are syllabic. The most common writing systems today are alphabetical. These involve the written sign (a letter) representing a single sound (known as a phoneme). The earliest known alphabetical systems were developed by speakers of semetic languages around 1700 BC in the area of modern day Israel and Palestine. All written languages will predominantly use one or other of the

above systems. They may however partly use the other systems. No written language is purely alphabetic, syllabic or logographic but may use elements from any or all systems.

Such fully developed writing only emerged after development from simpler systems. Talley sticks with notches on them to represent a number of sheep or to record a debt have been used in the past. Knotted strings have been used as a form of record keeping particularly in the area around the Pacific rim. They reached their greatest development with the Inca quipus where they were used to record payment of tribute and to record commercial transactions. A specially trained group of quipu makers and readers managed the whole system. The use of pictures for the purpose of communication was used by native Americans and by the Ashanti and Ewe people in Africa. Pictures can show qualities and characteristics which cannot be shown by tally sticks and knot records. They do not however amount to writing as they do not bear a conventional relationship to language.

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An alternative idea was that a system by which tokens, which represented objects like sheep, were placed in containers and the containers were marked on the outside indicating the number and type of tokens within the container gave rise to writing in Mesopotamia. The marks on the outside of the container were a direct symbolic representation of the tokens inside the container and an indirect symbolic representation of the object the token represented. The marks on the outside of the containers were graphically identical to some of the earliest pictograms used in Sumerian cuneiform, the world's first written language. However, cuneiform has approximately 1,500 signs and the marks on the outside of the containers can only explain the origins of a few of those signs.

The first written language was the Sumerian cuneiform. Writing mainly consisted of records of numbers of sheep, goats and cattle and quantities of grain. Eventually clay tablets were used as a writing surface and were marked with a reed stylus to produce the

writing. Thousands of such clay tablets have been found in the Sumerian city of Uruk. The earliest Sumerian writing consists of pictures of the objects mentioned such as sheep or cattle. Eventually the pictures became more abstract and consisted of straight lines that looked like wedges.

The earliest cuneiform was an accounting system consisting of pictograms representing commodities such as sheep and a number. The clay tablets found might for example simply state “ten sheep”. Such writing obviously has its limitations and would not be regarded as a complete writing system. A complete writing system only developed with the process of phonetization. This occurs when the symbol ceases to represent an object and begins to represent a spoken sound, which in early cuneiform would be a word. This process was assisted when the symbols which initially looked very like the object they represented gradually became more abstract and less clearly related to an object. However while the symbol became more closely connected to words, it was words dealing with objects, such as sheep, bird or pot. It was still not possible to write more abstract ideas such as father, running, speech or foreigner.

The solution to this problem was known as the rebus principle. Words with the same or similar pronunciation to an abstract word could be used to represent the abstract word. The sign for the eye could be used to represent the word “I”. The sign for deer could represent the word “dear”. Which word is referred to by the picture is decided by an additional sign. Pictographs which originally represented a word began to represent the sound of the word. The rebus principle is used to represent abstract words in all word writing systems in Sumer, Egypt, China and in the Aztec and Mayan writing in central America.

The Rebus principle led to cuneiform becoming a form of logo-syllabic writing consisting

of both logograms and syllabic writing. The effect of the change from logographic to logo-syllabic writing was substantial. Logographic writing cannot produce normal prose and is restricted to nouns, numbers, names and adjectives. The vast majority of early Sumerian writing consisted of bureaucratic records of products received or products distributed. Only when syllabic writing was introduced into cuneiform did it become possible to write prose such as myths and royal propaganda.

The next major development in writing in the old world was the development of the alphabet. The alphabet was developed out of Egyptian hieroglyphs which contained 24 signs for 24 Egyptian consonants. About 1700 BC Semites who knew Egyptian hieroglyphs began making certain changes in their writing system. They put the letters in a particular sequence and gave them simple names to assist learning and ease of memory. They also dropped the logograms and other signs used in hieroglyphs and just kept the Egyptian consonants and restricted the signs to those for individual consonants. Finally, they introduced vowels into their alphabet. Alphabets were soon to spread over most of the world as they provide both flexibility and simplicity for a writing system.

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Question 14 – 16

Instructions to follow

- Complete the summary below. Choose NO MORE THAN THREE WORDS from the passage for each answer.
- Write your answers in boxes 14-16 on your answer sheet.

There are three types of writing systems. Logography utilizes written signs representing a 14…… Syllabic writing systems were more common in the ancient world, as they adopt written signs symbolizing a 15……The most common alphabetical systems use a letter to represent a 16…….

Question 17 – 23

Instructions to follow

- Do the following statements agree with the information given in the reading passage? In boxes 17-23 on your answer sheet, write
  TRUE if the statement agrees with the information
  FALSE if the statement contradicts the information
  NOT GIVEN if there is no information on this.

17 There is no language that adopts elements from only one writing system.

18 Inca quipus used talley sticks to track payments and commercial transactions.

19 The marks on the outside of the containers originated from pictograms used in Sumerian cuneiform.

20 The first written language was created to document the quantities and types of livestock and food.

21 Cuneiform could not express abstract concepts at all.

22 Affected by the rebus principle, cuneiform combined the elements of both logograms

and syllabic writing.

23 Most countries adopted alphabetical writing systems due to their flexibility and simplicity.

Question 24 – 27

Instructions to follow

- Use the information in the passage to match the options (listed A-E) with statements (listed 11-14).
- Write the appropriate letter (A-E) in boxes 11-14 on your answer sheet.
- NB Some options may match more than one statement.

A Egyptians

B Native Americans

C Semites

D Chinese

E Sumerians

24 .....developed the alphabet from Egyptian hieroglyphs.

25 .....used pictures for the purpose of communication.

26 .....invented a written language which consisted of signs that looked like wedges.

27 .....might have independently invented writing 5,000 years ago.

Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 28-40 which are based on Reading Passage 3

Asian Space 2 Satellite Technology

The space-age began with the launch of the Russian artificial satellite Sputnik in 1957 and developed further with the race to the moon between the United States and Russia. This rivalry was characterized by advanced technology and huge budgets. In this process, there were spectacular successes, some failures, but also many spin-offs.

Europe, Japan, China, and India quickly joined this space club of the superpowers. With the advent of relatively low-cost high-performance mini-satellites and launchers, the acquisition of indigenous space capabilities by smaller nations in Asia has become possible. How, in what manner, and for what purpose will these capabilities be realized?

A. Rocket technology has progressed considerably since the days of 'fire arrows' (bamboo poles filled with gunpowder) first used in China around 500 BC, and, during the Sung Dynasty, to repel Mongol invaders at the battle of Kaifeng (Kai-fung fu) in AD 1232. These ancient rockets stand in stark contrast to the present-day Chinese rocket launch vehicles, called the 'Long March', intended to place a Chinese astronaut in space by 2005 and, perhaps, to achieve a Chinese moon-landing by the end of the decade.

B. In the last decade, there has been a dramatic growth in space activities in Asia both in the utilization of space-based services and the production of satellites and launchers. This rapid expansion has led many commentators and analysts to predict that Asia will become

a world space power. The space-age has had dramatic effects worldwide with direct developments in space technology influencing telecommunications, meteorological forecasting, earth resource and environmental monitoring, and disaster mitigation (flood, forest fires, and oil spills). Asian nations have been particularly eager to embrace these developments.

C. New and innovative uses for satellites are constantly being explored with potential revolutionary effects, such as in the field of health and telemedicine, distance education, crime prevention (piracy on the high seas), food and agricultural planning and production (rice crop monitoring). Space in Asia is very much influenced by the competitive commercial space sector, the emergence of low-cost mini-satellites, and the globalization of industrial and financial markets. It is not evident how Asian space will develop in the coming decades in the face of these trends. It is, however, important to understand and assess the factors and forces that shape Asian space activities and development in determining its possible consequences for the region.

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D. At present, three Asian nations, Japan, China, and India, have comprehensive end-to-end space capabilities and possess a complete space infrastructure: space technology, satellite manufacturing, rockets, and spaceports. Already self-sufficient in terms of satellite design and manufacturing, South Korea is currently attempting to join their ranks with its plans to develop a launch site and spaceport. Additionally, nations in Southeast Asia as well as those bordering the Indian subcontinent (Nepal, Pakistan, and Bangladesh), have, or are starting to develop indigenous space programmes. The Association of Southeast Asian Nations (ASEAN) has, in varying degrees, embraced space applications using foreign technology and over the past five years or so its space activities have been expanding. Southeast Asia is predicted to become the largest and fastest-growing market for commercial space products and applications, driven by telecommunications (mobile and fixed services), the Internet, and remote sensing applications. In the development of

this technology, many non-technical factors, such as economics, politics, culture, and history, interact and play important roles, which in turn affect Asian technology.

E. Asia and Southeast Asia, in particular, suffers from a long list of recurrent large-scale environmental problems including storms and flooding, forest fires and deforestation, and crop failures. Thus the space application that has attracted the most attention in this region is remote sensing. Remote sensing satellites equipped with instruments to take photographs of the ground at different wavelengths provide essential information for natural resource accounting, environmental management, disaster prevention and monitoring, land-use mapping, and sustainable development planning. Progress in these applications has been rapid and impressive. ASEAN members, unlike Japan, China, and India, do not have their own remote sensing satellites, however, most of its member nations have facilities to receive, process, and interpret such data from American and European satellites. In particular, Thailand, Malaysia, and Singapore have world-class remote sensing processing facilities and research programmes. ASEAN has plans to develop (and launch) its own satellites and in particular remote sensing satellites. Japan is regarded as the dominant space power in Asia and its record of successes and quality of technologies are equal to those of the West. In view of the technological challenges and high risks involved in space activities, a very long, and expensive, learning curve has been followed to obtain those successes achieved. Japan's satellite manufacturing was based on the old and traditional defense and military procurement methodologies as practiced in the US and Europe.

F. In recent years there have been fundamental changes in the way satellites are designed and built to drastically reduce costs. The emergence of ‘small satellites’ and their quick adoption by Asian countries as a way to develop low-cost satellite technology and rapidly establish a space capability has given these countries the possibility to shorten their

learning curve by a decade or more. The global increase of technology transfer mechanisms and use of readily available commercial technology to replace costly space and military-standard components may very well result in a highly competitive Asian satellite manufacturing industry.

G. The laws of physics are the same in Tokyo as in Toulouse, and the principles of electronics and mechanics know no political or cultural boundaries. However, no such immutability applies to engineer practices and management; they are very much influenced by education, culture, and history. These factors, in turn, have an effect on costs, lead times, product designs and, eventually, international sales. Many Asian nations are sending their engineers to be trained in the West. Highly experienced, they return to work in the growing Asian space industry. Will this acquisition of technical expertise, coupled perhaps with the world-renowned Japanese manufacturing and management techniques, be applied to build world-class satellites and reduce costs?

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Questions 28-32

Instructions to follow

- The reading passage has seven paragraphs, A-G
- Choose the correct heading for paragraphs A-G from the list below.
- Write the correct number, i-ix, in boxes 28-32 on your answer sheet.

List of Headings

i Western countries provide essential assistance
ii Unbalanced development for an essential space technology
iii Innovative application compelled by competition
iv An ancient invention which is related to the future
v Military purpose of the satellite
vi Rockets for application in ancient China
vii Space development in Asia in the past

viii Non-technology factors counts
ix competitive edge gained by more economically feasible satellite

28 Paragraph A

29 Paragraph B

30 Paragraph C

Paragraph D *Example: Current space technology development in Asia*

31 Paragraph E

32 Paragraph F

Questions 33-36

Instructions to follow

- Match the following reasons for each question according to the information given in the passage
- Write the correct letter A-F. in boxes 33-36 on your answer sheet.

A Because it helps administrate the crops.

B Because there are some unapproachable areas.

C Because the economic level in that area is low.

D Because there are influences from some other social factors.

E Because it can be used for non-peaceful purposes.

F Because disasters such as bush fires happened in Southeast Asia.

33 Why remote-photographic technology is used to resolve environmental problems?

A ○ B ○ C ○ D ○ E ○ F ○

34 Why satellite technology is used in the medical field?

A ○ B ○ C ○ D ○ E ○ F ○

35 Why Asian countries' satellite technology limited for development?

A ○ B ○ C ○ D ○ E ○ F ○

36 Why satellite technology is deployed in an agricultural area?

A ○ B ○ C ○ D ○ E ○ F ○

Questions 37-40

Instructions to follow

- Do the following statements agree with the information given in the reading passage? In boxes 37-40 on your answer sheet, write
  TRUE if the statement agrees with the information
  FALSE if the statement contradicts the information
  NOT GIVEN if there is no information on this.

37 Ancient China had already deployed rockets as a military purpose as early as 500 years ago.

38 Space technology has enhanced the literacy of Asia.

39 photos taken by satellites with certain technology help predict some natural catastrophes prevention and surveillance.

40 commercial competition constitutes a boosting factor to Asian technology development.

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IELTS Reading Test 12

Section 1

Instructions to follow

- You should spend about 20 minutes on Question 1-13 which are based on Reading Passage 1

People living in a typical urban environment experience a wide range of sounds on a daily basis. In its Guidelines for Community Noise the World Health Organisation (WHO) declared, Worldwide, noise-induced hearing impairment is the most prevalent irreversible occupational hazard, and it is estimated that 120 million people worldwide now have disabling hearing difficulties,

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The growing noise pollution problem has many different sources. Booming population growth and the loss of rural land to urban sprawl both play a role. Other factors include the inability of authorities in many parts of the world to implement noise-reducing legislation: the electronic nature of our age, which encourages many noisy gadgets; the rising number of vehicles on street, and busier airports.

Sound intensity is measured in decibels(dB); the unit A-weighted dB(dBA) is used to indicate how humans hear a given sound. Zero dBA is considered the point at which a person begins to hear sound. A soft whisper at three feet equals 30 dBA, a busy freeway at 50 feet is around 80 dBA, and a chainsaw can reach 110 dBA.

Mark Stephenson, a senior research audiologist at the National Institute for Occupational Safety and Health (NIOSH), says his agency's definition of hazardous noise is sound that

exceeds 85 Dba, meaning the average noise exposure measured over a typical eight-hour workday.

In the United States, about 30 million workers are exposed to hazardous sound levels on the job, according to NIOSH. Noise in the US industry is an extremely difficult problem to monitor, acknowledges Craig Moulton, an industrial hygienist for the Occupational Safety and Health Administration (OSHA). Still, he says, OSHA does require that any employer with staff overexposed to noise safeguard those employees against the harmful impact of noise'.

'For many people in the United States, noise has drastically affected the quality of their lives', says Arline Bronzaft, chair of the Noise Committee of the New York City Council of the Environment, and a psychologist who has done pioneering research on the effects of noise on children's reading ability. 'My daughter lives near LaGuardia airport in New York City, and she can't open a window or enjoy her backyard in the summer because of the airplane noise'.

The United States is not the only country where noise pollution is affecting the quality of life. In Japan, noise pollution caused by public loudspeaker announcements and other forms of city noise has forced many Tokyo citizens to wear earplugs as they go about their daily lives. In Europe, about 65% of the population is exposed to ambient sound at levels above 55 dBA , while about 17% is exposed to levels about 65 dBA , according to the European Environment Agency.

Numerous scientific studies over the years have confirmed that exposure to certain levels of sound can damage hearing. NIOSH studies from the mid to late 1990s show that 90% of coal miners have hearing impairment by age 52- compared to 9% of the general

population. NIOSH research also reveals that by age twenty-five, the average carpenter's hearing is equivalent to that of a fifty-year-old male who hasn't been exposed to noise.

In 2001 researchers from the Center for Disease Control and Prevention reported that, based on audiometric testing of 5,249 children, an estimated 12.5% of American children have noise-induced hearing threshold shifts- or dulled hearing- in one or both ears. Most children with dulled hearing have only limited hearing damage, but continued exposure to excessive noise can lead to difficulties with high-frequency sound discrimination.

The effects of sound don't stop with the ears. The non-auditory effects of noise were noted as far back as 1930 mm a study published by South and D L Laird in the Journal of the Acoustical Society of America. The results showed that exposure to noise caused stomach problems in healthy human beings.

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Noise has also been shown to affect learning ability. In 1975 Bronzaft collaborated on a study of children in a school near a train track that showed how exposure to noise affects reading ability. Half of the students in the study were in classrooms facing the train track and the other half were in classrooms in the school's quieter section. The findings were that students on the quieter sidle performed better on reading tests.

Bronzaft and the school principal persuaded the school board to have acoustical tiles installed in the classrooms adjacent to the tracks. The Transit Authority also undertook work on the track near the school in order to reduce noise levels. A follow-up study in 1981 found that children's reading scores improved after these interventions were put in place.

Anti-noise activists say that Europe and several countries in Asia are more advanced than the United States in terms of combating noise. 'Population pressure has prompted Europe

to move more quickly on the noise issue,' says Ken Hume, a principal lecturer in human physiology at the Manchester Metropolitan University in England. European cities with at least 250,000 people are developing noise maps of those cities to help leaders determine noise pollution strategies. Paris has already prepared its first noise maps. The map data will be fed into computer models that will help test the sound impact of new road layouts or buildings before construction begins.

Bronzaft stresses that governments worldwide need to direct more financial resources towards studies investigating the effects of noise, and do a better job coordinating their noise pollution efforts, so they can establish health and environmental policies based on solid scientific research.

Question 1-13

Instructions to follow

- Complete the sentence below. Choose NO MORE THAN TWO WORDS AND/OR A NUMBER from the passage for each answer.
- Write your answer in boxes 1-4 on your answer sheet.

1 Experts consider noise levels to be harmful if they go above_____.

2 Children with "dulled hearing" may eventually have trouble distinguishing _____ sounds.

3 Early research into physical effects other than hearing problems revealed that adults may suffer from _____ if exposed to noise.

4 Some European cities are creating noise policies _____ in order to help governments develop noise policies.

QUESTIONS 5 - 10

Instructions to follow

- Look at the following statements (questions 5-10) and the list of people and organizations below.
- Match each statement with the correct person or organization, A-E.
- Write the correct letter A-E in boxes 5-10 on your answer sheet.
- NB You may use any letter more than once.

List of People and Organisations

A World Health Organisation (WHO)

B National Institute for Occupational Safety and Health (NIOSH)

C Craig Moulton

D Arline Bronzaft

E Center for Disease Control and Prevention

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5 A significant proportion of American children have suffered some hearing loss as a result of exposure to noise.

A ○ B ○ C ○ D ○ E ○

6 Noise in our environment can affect the kind of lifestyle we have.

A ○ B ○ C ○ D ○ E ○

7 American companies are expected to protect workers from the effects of excessive noise.

A ○ B ○ C ○ D ○ E ○

8 Authorities should increase funding for noise pollution research.

A ○ B ○ C ○ D ○ E ○

9 Permanent hearing loss caused by noise is the most commonly occurring danger in the global workplace today.

A ○ B ○ C ○ D ○ E ○

10 Workers in certain occupations in the US have high rates of hearing damage.

A ○ B ○ C ○ D ○ E ○

QUESTIONS 11 - 13

Instructions to follow

- Choose the correct letter A, B, C or D.
- Write the correct letter in boxes 11-13 on your answer sheet.

11 As a result of the findings from Bronzaft's train track study

A ○ The school moved the classrooms located near the track

B ○ The track was treated to make it less noisy

C ○ The classrooms facing the track were no longer used

D ○ The amount of traffic on the track was reduced

12 According to the passage, European countries are examining how noise levels will be affected by

A ○ Population distribution

B ○ The size of cities

C ○ Street design

D ○ The purpose of tower blocks

13 Which of the following is the most suitable title for Reading Passage 1?

A Effects of noise on workers job performance

B The cities most effective at reducing noise

C Educating workers about noise

D Living in a noisy world

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Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26 which are based on Reading Passage 2

Sherlock Holmes

The most sharp-minded detective ever

A. Sir Arthur Conan Doyle, a British author, created Sherlock Holmes, a fictional private detective. Holmes, referring to himself as a "consulting detective" in the stories, is well-known for his proficiency with his observation, inference, forensic science, and logical reasoning that borders on the incredible when investigating cases for various clients. Almost all stories were set in the Victorian eras between 1880 and 1914 and were narrated by the character of Holmes' friend, Dr. John H. Watson, who frequently joined Holmes during his investigations. He also shared a flat with Holmes at 221B Baker Street, London, where many episodes began.

B. Holmes's clients vary from poor pawnbrokers and governesses to wealthy aristocrats and businessmen in Europe. In the beginning, he was only recognised in select groups but cooperated with Scotland Yard, a police agency. His successful work and the publication of Watson's stories, however, enhanced Holmes' reputation and made him an extremely famous detective. So many people called for his assistance instead of the police, so that, according to Watson, Holmes had "overwhelming practice" by 1895. Police outside London asked Holmes for his help if available. Even a Prime Minister and the King of Bohemia came to 221B Baker Street and requested Holmes's assistance in person. Some clients offered doubled pay, which implied that wealthy clients paid Holmes more than

the set rate. In “The Adventure of the Priory School,” he was paid a 6,000-pound fee when the annual income of a young professional was 500 pound. However, Watson said that Holmes would decline the case for the wealthy and renowned if he lost his interest.

C. According to Watson, Holmes is a bohemian in his behaviour and lifestyle, also described as being fond of personal cleanliness like a cat. Holmes, however, is also an anomaly with no regard for common expectations of tidiness or decent order. Watson said, “His personal habits, as one of the most untidy people, drove a fellow-lodger to madness. He keeps cigars in the coal-scuttle, tobacco in the toe end of a Persian slipper, and his unanswered letters in the centre of his wooden mantelpiece. He dreads losing documents. “Thus, day by day his papers accumulated, until each corner of the room was stacked up with loads of manuscripts and books, which were in no way to be burnt or to be extracted by their owners.

D. Except for Watson, Holmes avoids casual company. In “The Gloria Scott”, he told Watson that he had only one friend at college for two years: “I was not a sociable man, Watson, I never mingled with men of my year” Also, the detective goes without food at the case of heavy mental engagement, claiming that “The faculties become refined when you starve them.” At moments Holmes relaxes with music or playing the violin or listening to works of composers such as Wagner and Pablo de Sarasate.

E. Homes is energetic and excitable, while he can be dispassionate and cold. He has a talent of showmanship, frequently keeping his tactics and evidence hidden until the last moment in order to impress observers. His co-workers forgive his willingness to bend the truth on behalf of clients lying to the police by removing evidence, or even breaking into houses when he thinks it is morally justifiable.

F. The first two Sherlock Holmes stories, the novel “A Study in Scarlet” and “The Sign of the

Four", were reasonably received well. However, Holmes first became exceedingly popular, when the first six short stories featuring the former characters were published in 1891 in The Stand Magazine. Holmes became a celebrity in Britain and America. In 1893, when Arther Conan Doyle killed off Holmes in the story "The Final Problem", public reaction to try to bring him back was so aggressive and unprecedented in fictional events. As a result of Holme's death, more than 20,000 readers cancelled their subscription. Public pressure finally contributed to the author writing another story of Holmes as a resurrected character. While not the first fictional detective, Sherlock Holmes is undoubtedly the best known. Until the 2000s, there were already more than 25,000 plays, films, TV programs featuring the detective, and he is listed as the most appeared literary character in film and television history by Guinness World Records.

G. Holmes's success and reputation lead many to believe he is not a character in fiction, but a real person. A number of literary and fan communities have been founded on this pretence. Avid readers contributed to establishing the modern practice of fandom. The fiction and character have had a far-reaching and everlasting effect on mystery writing and mainstream culture as a whole, with the original stories, as well as thousands adapted into radio plays, TV, films, and even video games by authors other than Conal Doyle for over ten decades.

H. Many fans sent letters to Holmes's address, 221B Baker Street. Though the address did not exist, those letters began to arrive at the large Abbey National building that first encompassed the address soon after it was built in 1932. The Sherlock Holmes Museum now holds the letters, and many of the people who sent the letter believed that Holmes was real. In a 2008 survey of British teenagers, over half of respondents believed that Sherlock Holmes was a real human.

I. Crime fiction was established by The Sherlock Holmes stories as a respectable genre read

by readers of all backgrounds, and Doyle's achievement inspired other detective stories. Holmes had a significant impact on the creation of other "peculiar gentleman detective" characters, like Hercule Poirot, published in 1920. Holmes also influenced a variety of anti-hero stories, as an antidote to the genius detective", such as the gentleman thief characters A.J.Raggles and Arsene Lupin.

Question 14-19

Instructions to follow

- The reading passage has nine paragraphs, A-G.
- Which paragraph contains the following information?
- Write the correct letter, A-I, in boxes 14-19 on your answer sheet.
- NB You may use any letter more than once.

14 a description of what role the readers played with a protagonist

A ○ B ○ C ○ D ○ E ○ F ○ G ○

15 a description of how Holmes arranged his personal belongings.

A ○ B ○ C ○ D ○ E ○ F ○ G ○

16 a reference of a person being close to the detective

A ○ B ○ C ○ D ○ E ○ F ○ G ○

17 a reference of an organisation that joined Holmes solving cases

A ○ B ○ C ○ D ○ E ○ F ○ G ○

18 an explanation of common misunderstanding of the young toward Holmes

A ○ B ○ C ○ D ○ E ○ F ○ G ○

19 an explanation of Holmes' financial status

A ○ B ○ C ○ D ○ E ○ F ○ G ○

Question 20 and 21

Instructions to follow

- Choose Two letter, A-E.
- Write the correct letters in boxes 20 and 21 on your answer sheet.

Which TWO of the following statements are made in the text about Sherlock Holmes' personality?

A ○ He is a sociable and outgoing celebrity

B ○ He enjoys public attention

C ○ He always sticks to the truth and faithfulness

D ○ He pleases and entertains his housemate

E ○ He dislikes losing any data

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Question 22

Instructions to follow

- Choose ONE letter A-E.
- Write the correct letter in box nine on your answer sheet.

Which ONE of the following statements is made in the text about Sherlock Holmes's influence on the world?

A ○ A lot of authors followed the same style of the story all the time.

B ○ A building to commemorate Holmes was constructed

C ○ A ton of letters arrived at the detective's house

D ○ His fame spread in Britain only

E ○ All people knew Holmes was a fictional man.

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Question 23-26

Instructions to follow

- Complete the summary below.
- Choose ONE WORD ONLY from the passage for each answer.
- Write your answers in boxes 23-26 on your answer sheet.

An unforgettable detective in crime fiction history

Sherlock Holmes, a well-known detective, who was at the almost (23)_____ level of reasoning and investigation, became a model of crime fiction. He did not have a particular preference for clients, but the absence of (24)_____ led him to decline a call from even a rich man.Many people confused Holmes with a real person, so that letters arrived at his

address from the fiction, and a 25 _____ demonstrated the same misunderstanding from British teenagers. Holmes' story contributed many adaptations and establishment of crime fiction, so even stories as an 26 _____ against a character like Holmes were invented.

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Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40 which are based on Reading Passage 3

Insect-inspired robots

A recent conference reports on developments in biorobotics

A. A tiny insect navigates its way across featureless salt-pans. A cockroach successfully works out how to scramble over an obstacle. The mantis shrimp scans its aquatic world through hyperspectral eyes. Using the most basic of equipment and brains tinier than a pinhead, insects constantly solve complex problems of movement, vision and navigation processing data that would challenge a supercomputer. How they do it is driving one of the most exciting new fields of technology-biomimetics and biorobotics, the imitation of insect systems to control man-made machines. Delegates at a recent conference presented some outcomes of their work in this area.

B. Dr Alex Zelinsky suggested that the method by which wasps use landmarks to find their way back to the nest may one day be part of a system for navigating cars that 'know' where to go. A research team led by Dr Zelinsky has shown that a robot can navigate its way along 50 different landmarks by recognizing them individually using a panoramic camera. 'The inspiration came from biology, where wasps use a practice called "turn back and look" to orient themselves as they emerge from their nest. By flying to and fro, they lock in images of the nest from different angles and perspectives, so they can recognize it again,' he explained. The robot's panoramic camera logs the surrounding area and its key landmarks, which are then sorted in its computer according to how reliable they are as

navigational aids. The landmarks are then scaled, from small to large, so that the robot can recognize whether it is getting closer to or further away from them. Their location is built into a map in its 'mind', which operates at different scales and instructs the robot whether to turn left or right at a particular mark. The technology provides a general way for a machine to navigate an unknown landscape.

C. For three decades, Professor Ruediger Wehner has journeyed from Switzerland to the Sahara desert where Catalyphis, a tiny ant with a brain weighing just 0.1 mg, performs acts of navigational genius when it leaves its nest, forages for food and returns successfully. Cataglyphis uses polarised light, caused when air molecules scatter light, to orient and steer itself. Wehner's team found the ant has a set of specialized photoreceptors along the upper rim of its eyes that detect polarized light, while other receptors perform different navigational tasks. As the sun moves, the ant notes its direction each time it leaves the nest and updates its internal compass. Using other eye receptors it stores a 'snapshot' image of landmarks, close to the nest entrance in its eyes and compares this with what it sees as it returns. The ant also has a way of measuring distance traveled, while a 'path integrator' periodically informs the ant of its current position relative to its point of departure. Rather than integrate all the information it receives in its brain, the ant actually performs a number of complex calculations in different organs. Like a supercomputer, the ant has many separate subroutines going on simultaneously. Using the ant's ability to steer by polarised light and to store and reuse landscape images, Wehner and colleagues have built 'Sahabat', a small vehicle that uses polarisers and a digital CCD camera to store 360o images of landmarks to the ones in its memory.

D. Professor Robert Michelson had a different desert challenge – to design a flying robot that can not only navigate but also stay aloft and hover in the thin atmosphere of Mars.

Drawing inspiration from insect flight, he has gone beyond nature to devise a completely new concept for a flying machine. The 'Entomopter' is a sort of double-ended dragonfly whose wings beat reciprocally. Michelson says that the flapping-wing design gives the craft unusually high lift compared with a fixed-wing flyer, enabling it to fly slowly or hover in the thin Martian air- whereas a fixed-wing craft would have to move at more than 400 km/h and could not stop to explore.

E. Engineer Roger Quinn and entomologist Professor Roy Ritzmann are taking their inspiration from cockroaches. According to Quinn and Ritsmann, the ability of cockroaches to run very fast over rough terrain may one day give rise to a completely new all-terrain vehicle with six-legs, or maybe even wheel-like legs called 'whegs'. The key to the cockroach's remarkable cross-country performance lies partly in the fact that its legs do a lot of the 'thinking' without having to consult the brain. Quinn and Ritzmann are drawing on cockroach skills to create robotic walkers and control strategies that capture the remarkable capacity of these insects to traverse complex terrain and navigate safely toward goals while avoiding obstacles. The team has already designed a series of robots that run on six legs or on whegs, enabling them to handle surprisingly rugged terrain.

F. International experts believe there are tremendous opportunities for biorobotics. However, delegates at the conference had differing visions for the future of science. While some were concerned that the initial applications of biorobotics may be military, others, such as Dr Barbara Webb, predicted swarms of tiny cheap insect-like robots as society's cleaners and collectors. Sonja Kleinlogel hoped the study of the hyperspectral eyes if the mantis shrimp might yield remote sensors that keep watch over the environmental health of our oceans. Several delegates were concerned about the ethical implications of biorobotics, and urged that close attention be paid to this as the science and technologies develop.

Question 27-32

Instructions to follow

- Reading Passage 3 has six sections A-F. Which section contains the following information?
- Write the correct letter A-F in boxes 27-32 on your answer sheet.
- NB You can use any letter more than once.

27 positive and negative possibilities for the use of insect-inspired robots

A ○ B ○ C ○ D ○ E ○ F ○

28 how perceived size is used as an aid to navigation

A ○ B ○ C ○ D ○ E ○ F ○

29 an example of decision-making taking place in the limbs

A ○ B ○ C ○ D ○ E ○ F ○

30 a description of a potential aid in space exploration

A ○ B ○ C ○ D ○ E ○ F ○

31 the range of skills that have inspired biorobotics

A ○ B ○ C ○ D ○ E ○ F ○

32 how a variety of navigational methods operate at the same time

A ○ B ○ C ○ D ○ E ○ F ○

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QUESTIONS 33 - 36

Instructions to follow

- Answer the questions below.
- Choose NO MORE THAN THREE WORDS from the passage for each answer.
- Write your answers in boxes 33-36 on your answer sheet.

33 Which creatures see particularly well underwater?

34 In addition to a computer, what technical equipment is fitted in Dr Zelinsky's robot?

35 Where is the Cataglyphis ant found?

36 What atmospheric effect helps the Catalyphis ant to know its direction?

QUESTIONS 37 - 40

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Instructions to follow

- Look at the following people and the list of robots below.
- Match each person or people with the correct robot A-G.
- Write the correct letter A-G in boxes 37-40 on your answer sheet.

List of robots

A a robot that makes use of light as well as stored images for navigational purposes

B a robot that can contribute to environmental health

C a robot that can move over difficult surfaces

D a robot that categorises information from the environment according to its usefulness

E a robot that can be used to clean surfaces and collect rubbish

F a robot that has improved on the ability of the insect on which it is based

G a robot that can replace soldiers in war

37 Dr Alex Zelinsky

A ○ B ○ C ○ D ○ E ○ F ○ G ○

38 Professor Ruediger Wehner

A ○ B ○ C ○ D ○ E ○ F ○ G ○

39 Professor Robert Michelson

A ○ B ○ C ○ D ○ E ○ F ○ G ○

40 Roger Quinn and Professor Roy Ritzmann

A ○ B ○ C ○ D ○ E ○ F ○ G ○

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IELTS Reading Test 13

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-13 which are based on Reading Passage 1

SOSUS: Listening to the Ocean

A. The oceans of Earth cover more than 70 percent of the planet's surface, yet, until quite recently, we knew less about their depths than we did about the surface of the Moon. Distant as it is, the Moon has been far more accessible to study because astronomers long have been able to take at its surface, first with the naked eye and then with the telescope-both instruments that focus light. And, with telescopes tuned to different wavelengths of light, modern astronomers can not only analyze Earth's atmosphere but also determine the temperature and composition of the Sun or other stars many hundreds of light-years away. Until the twentieth century, however, no analogous instruments were available for the study of Earth's oceans: Light, which can travel trillions of miles through the vast vacuum of space, cannot penetrate very far in seawater.

B. Curious investigators long have been fascinated by sound and the way it travels in water. As early as 1490, Leonardo da Vinci observed: "If you cause your ship to stop and place the head of a long tube in the water and place the outer extremity to your ear, you will hear ships at a great distance from you." In 1687, the first mathematical theory of sound propagation was published by Sir Isaac Newton in his Philosophiae Naturalis Principia Mathematica. Investigators were measuring the speed of sound in the air beginning in

the mid-seventeenth century, but it was not until 1826 that Daniel Colladon, a Swiss physicist, and Charles Sturm, a French mathematician, accurately measured its speed in the water. Using a long tube to listen underwater (as da Vinci had suggested), they recorded how fast the sound of a submerged bell traveled across Lake Geneva. Their result-1,435 meters (1,569 yards) per second in the water of 1.8 degrees Celsius (35 degrees Fahrenheit) — was only 3 meters per second off from the speed accepted today. What these investigators demonstrated was that water — whether fresh or salt — is an excellent medium for sound, transmitting it almost five times faster than its speed in air.

C. In 1877 and IS%S, the British scientist John William Strutt, third Baron Rayleigh, published his two-volume seminal work, The Theory of Sound, often regarded as marking the beginning of the modern study of acoustics. The recipient of the Nobel Prize for Physics in 1904 for his successful isolation of the element argon, Lord Rayleigh made key discoveries in the fields of acoustics and optics that are critical to the theory of wave propagation in fluids. Among other things, Lord Rayleigh was the first to describe a sound wave as a mathematical equation (the basis of all theoretical work on acoustics) and the first to describe how small particles in the atmosphere scatter certain wavelengths of sunlight, a principle that also applies to the behavior of sound waves in water.

D. A number of factors influence how far sound travels underwater and how long it lasts. For one, particles in seawater can reflect, scatter, and absorb certain frequencies of sound —just as certain wavelengths of light may be reflected, scattered, and absorbed by specific types of particles in the atmosphere. Seawater absorbs so many times the amount of sound absorbed by distilled water, with specific chemicals (such as magnesium sulfate and boric acid) damping out certain frequencies of sound. Researchers also learned that low-frequency sounds, whose long wavelengths generally pass over tiny particles, tend to travel farther without loss through absorption or

scattering. Further work on the effects of salinity, temperature, and pressure on the speed of sound has yielded fascinating insights into the structure of the ocean. Speaking generally, the ocean is divided into horizontal layers in which sound speed is influenced more greatly by temperature in the upper regions and by pressure in the lower depths. At the surface is a sun-warmed upper layer, the actual temperature and thickness of which varies with the season. At mid-latitudes, this layer tends to be isothermal, that is, the temperature tends to be uniform throughout the layer because the water is well mixed by the action of waves, winds, and convection currents; a sound signal moving down through this layer tends to travel at an almost constant speed. Next comes a transitional layer called the thermocline, in which temperature drops steadily with depth; as the temperature falls, so does the speed of sound.

E. The U.S. Navy was quick to appreciate the usefulness of low—frequency sound and the deep sound channel in extending the range at which it could detect submarines. In great secrecy during the 1950s, the U.S. Navy launched a project that went by the code name Jezebel; it would later come to be known as the Sound Surveillance System (SOSUS). The system involved arrays of underwater microphones, called hydrophones, that were placed on the ocean bottom and connected by cables to onshore processing centers. With SOSUS deployed in both deep and shallow water along both coasts of North America and the British West Indies, the U.S. Navy not only could detect submarines in much of the northern hemisphere, it also could distinguish how many propellers a submarine had, whether it was conventional or nuclear, and sometimes even the class of sub.

F. The realization that SOSUS could be used to listen to whales also was made by Christopher Clark, a biological acoustician at Cornell University, when he first visited a SOSUS station in 1992. When Clark looked at the graphic representations of sound,

scrolling 24 hours a day, every day, he saw the voice patterns of blue, finback, minke, and humpback whales. He also could hear the sounds. Using a SOSUS receiver in the West Indies, he could hear whales that were 1,770 kilometers (1,100 miles) away. Whales are the biggest of Earth's creatures. The blue whale, for example, can be 100 feet long and weigh as many tons. Yet these animals also are remarkably elusive. Scientists wish to observe blue time and position them on a map. Moreover, they can track not just one whale at a time, but many creatures simultaneously throughout the North Atlantic and the eastern North Pacific. They also can learn to distinguish whale calls. For example, Fox and colleagues have detected changes in the calls of finback whales during different seasons and have found that blue whales in different regions of the Pacific Ocean have different calls. Whales firsthand must wait in their ships for the whales to surface. A few whales have been tracked briefly in the wild this way but not for very great distances, and much about them remains unknown. Using the SOSUS stations, scientists can track the whales in real-time and position them on a map. Moreover, they can track not just one whale at a time, but many creatures simultaneously throughout the North Atlantic and the eastern North Pacific. They also can learn to distinguish whale calls. For example, Fox and colleagues have detected changes in the calls of finback whales during different seasons and have found that blue whales in different regions of the Pacific Ocean have different calls.

G. SOSUS, with its vast reach, also has proved instrumental in obtaining information crucial to our understanding of Earth's weather and climate. Specifically, the system has enabled researchers to begin making ocean temperature measurements on a global scale — measurements that are keys to puzzling out the workings of heat transfer between the ocean and the atmosphere. The ocean plays an enormous role in determining air temperature — the heat capacity in only the upper few meters of the ocean is thought to be equal to all of the heat in the entire atmosphere. For sound waves traveling

horizontally in the ocean, speed is largely a function of temperature. Thus, the travel time of a wave of sound between two points is a sensitive indicator of the average temperature along its path. Transmitting sound in numerous directions through the deep sound channel can give scientists measurements spanning vast areas of the globe. Thousands of sound paths in the ocean could be pieced together into a map of global ocean temperatures and, by repeating measurements along the same paths over time, scientists could track changes in temperature over months or years.

H. Researchers also are using other acoustic techniques to monitor climate. Oceanographer Jeff Nystuen at the University of Washington, for example, has explored the use of sound to measure rainfall over the ocean. Monitoring changing global rainfall patterns undoubtedly will contribute to understanding major climate change as well as the weather phenomenon known as El Nino. Since 1985, Nystuen has used hydrophones to listen to rain over the ocean, acoustically measuring not only the rainfall rate but also the rainfall type, from drizzle to thunderstorms. By using the sound of rain underwater as a "natural" rain gauge, the measurement of rainfall over the oceans will become available to climatologists.

Questions 1-4

Instructions to follow

- Do the following statements agree with the information given in the reading passage? In boxes 1-4 on your answer sheet, write
  TRUE if the statement agrees with the information
  FALSE if the statement contradicts the information
  NOT GIVEN if there is no information on this.

1 In the past, research carried out on the Moon were much easier than that of the ocean.

2 The same light technology used in the investigation of the moon can be employed in the field of the ocean.

3 Research on the depth of the ocean by the method of the sound wave is more time-consuming.

4 Hydrophones technology is able to detect the category of precipitation.

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Questions 5-8

Instructions to follow

- The Reading Passage has seven paragraphs A-H. Which paragraph contains the following information?
- Write the correct letter A-H, in boxes 5-8 on your answer sheet.
- NB You may use any letter more than once.

5 Elements affect sound transmission in the ocean.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

6 Relationship between global climate and ocean temperature

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

7 Examples of how sound technology helps people research ocean and creatures in it

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

8 Sound transmission underwater is similar to that of light in any condition.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

Questions 9-13

Instructions to follow

- Choose the correct letter A, B, C or D.
- Write your answer in boxes 9-13 on your answer sheet.

9 Which of the following is dedicated to the research of rate of sound?

A ○ Leonardo da Vinci
B ○ Isaac Newton
C ○ John William Strutt
D ○ Charles Sturm

10 Who explained that the theory of light or sound wavelength is significant in the water?

A ○ Lord Rayleigh
B ○ John William Strutt
C ○ Charles Sturm
D ○ Christopher Clark

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11 According to Fox and colleagues, in what pattern does the change of finback whale calls happen

- A Change in various seasons
- B Change in various days
- C Change in different months
- D Change in different years

12 In which way does the SOSUS technology inspect whales?

- A Track all kinds of whales in the ocean
- B Track bunches of whales at the same time
- C Track only finback whale in the ocean
- D Track whales by using multiple appliances or devices

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13 What could scientists inspect via monitoring along a repeated route?

- A Temperature of the surface passed
- B Temperature of the deepest ocean floor
- C Variation of temperature
- D Fixed data of temperature

Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26 which are based on Reading Passage 2.

Left-handed or Right-handed

A. The probability that two right-handed people would have a left—handed child is only about 9.5 percent. The chance rises to 19.5 percent if one parent is a lefty and 26 percent if both parents are left—handed: The preference, however, could also stem from an infant's imitation of his parents. To test genetic influence, starting in the 1970s British biologist Marian Annett of the University of Leicester hypothesized that no single gene determines handedness. Rather, during fetal development, a certain molecular factor helps to strengthen the brain's left hemisphere, which increases the probability that the right hand will be dominant because the left side of the brain controls the right side of the body, and vice versa. Among the minority of people who lack this factor, handedness develops entirely by chance.

Research conducted on twins complicates the theory, however. One in five sets of identical twins involves one right-handed and one left-handed person, despite the fact that their genetic material is the same. Genes, therefore, are not solely responsible for handedness.

B. The genetic theory is also undermined by results from Peter Hepper and his team at Queen's University in Belfast, Ireland. In 2004 the psychologists used ultrasound to show that by the 15th week of pregnancy, fetuses already have a preference as to which thumb

they suck. In most cases, the preference continued after birth. At 15 weeks, though, the brain does not yet have control over the body's limbs. Hepper speculates that fetuses tend to prefer whichever side of the body is developing quickly and that their movements, in turn, influence the brain's development. Whether this early preference is temporary or holds up throughout development and infancy is unknown. Genetic predetermination is also contradicted by the widespread observation that children do not settle on either their right or left hand until they are two or three years old.

C. But even if these correlations were true, they did not explain what actually causes left-handedness. Furthermore, specialization on either side of the body is common among animals. Cats will favor one paw over another when fishing toys out from under the couch. Horses stomp more frequently with one hoof than the other. Certain crabs motion predominantly with the left or right claw. In evolutionary terms, focusing power and dexterity in one limb is more efficient than having to train two, four or even eight limbs equally. Yet for most animals, the preference for one side or the other is seemingly random. The overwhelming dominance of the right hand is associated only with humans. That fact directs attention toward the brain's two hemispheres and perhaps toward language.

D. Interest in hemispheres dates back to at least 1836. That year, at a medical conference, French physician Marc Dax reported on an unusual commonality among his patients. During his many years as a country doctor, Dax had encountered more than 40 men and women for whom speech was difficult, the result of some kind of brain damage. What was unique was that every individual suffered damage to the left side of the brain. At the conference, Dax elaborated on his theory, stating that each half of the brain was responsible for certain functions and that the left hemisphere controlled speech. Other experts showed little interest in the Frenchman's ideas.

Over time, however, scientists found more and more evidence of people experiencing speech difficulties following an injury to the left brain. Patients with damage to the right hemisphere most often displayed disruptions in perception or concentration. Major advancements in understanding the brain's asymmetry were made in the 1960s as a result of so—called split—brain surgery, developed to help patients with epilepsy. During this operation, doctors severed the corpus callosum — the nerve bundle that connects the two hemispheres. The surgical cut also stopped almost all normal communication between the two hemispheres, which offered researchers the opportunity to investigate each side's activity.

E. In 1949 neurosurgeon Juhn Wada devised the first test to provide access to the brain's functional organization of language. By injecting an anesthetic into the right or left carotid artery, Wada temporarily paralyzed one side of a healthy brain, enabling him to more closely study the other side's capabilities. Based on this approach, Brenda Milner and the late Theodore Rasmussen of the Montreal Neurological Institute published a major study in 1975 that confirmed the theory that country doctor Dax had formulated nearly 140 years earlier: in 96 percent of right-handed people, language is processed much more intensely in the left hemisphere. The correlation is not as clear in lefties, however. For two-thirds of them, the left hemisphere is still the most active language processor. But for the remaining third, either the right side is dominant or both sides work equally, controlling different language functions.

That last statistic has slowed acceptance of the notion that the predominance of right—handedness is driven by left-hemisphere dominance in language processing. It is not at all clear why language control should somehow have dragged the control of body movement with it. Some experts think one reason the left hemisphere reigns over

language is that the organs of speech processing — the larynx and tongue — are positioned on the bodfs symmetry axis. Because these structures were centered, it may have been unclear, in evolutionary terms, which side of the brain should control them, and it seems unlikely that shared operation would result in smooth motor activity.

Language and handedness could have developed preferentially for very different reasons as well. For example, some researchers, including evolutionary psychologist Michael C. Corballis of the University of Auckland in New Zealand, think that the origin of human speech lies in gestures. Gestures predated words and helped language emerge. If the left hemisphere began to dominate speech, it would have dominated gestures, too, and because the left brain controls the right side of the body, the right hand developed more strongly.

F. Perhaps we will know more soon. In the meantime, we can revel in what, if any, differences handedness brings to our human talents. Popular wisdom says right—handed, left-brained people excel at logical, analytical thinking. Left-handed, right-brained individuals are thought to possess more creative skills and maybe better at combining the functional features emergent on both sides of the brain. Yet some neuroscientists see such clainrs as pure speculation. Fewer scientists are ready to claim that left—handedness means greater creative potential. Yet lefties are prevalent among artists, composers and the generally acknowledged great political thinkers. Possibly if these individuals are among the lefties whose language abilities are evenly distributed between hemispheres, the intense interplay required could lead to unusual mental capabilities.

G. Or perhaps some lefties becorne highly creative because they must be more clever to get by in our right—handed world. This battle, which begins during the very early stages of

childhood, lays the groundwork for exceptional achievements.

Questions 14-18

Instructions to follow

- The Reading Passage has seven paragraphs A-G. Which paragraph contains the following information?
- Write the correct letter A-G, in boxes 14-18 on your answer sheet.
- NB You may use any letter more than once.

14 The phenomenon of using one side of their body for animals.

A ○ B ○ C ○ D ○ E ○ F ○ G ○

15 Statistics on the rate of one-handedness born.

A ○ B ○ C ○ D ○ E ○ F ○ G ○

16 The age when the preference for using one hand is fixed.

A ○ B ○ C ○ D ○ E ○ F ○ G ○

17 great talents of occupations in the left-handed population.

A ○ B ○ C ○ D ○ E ○ F ○ G ○

18 The earliest record of researching hemisphere's function

A ○ B ○ C ○ D ○ E ○ F ○ G ○

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Questions 19-22

Instructions to follow

- Look at the following researchers (Questions 19-22) and the list of findings below. Match each researcher with the correct finding.

A Brenda Milner

B Marian Annett

C Peter Hepper

D Michale Corballis

19 Ancient language evolution is connected to body gesture and therefore influences handedness.

A ○ B ○ C ○ D ○

20 A child's handedness is not determined by just biological factors.

A ○ B ○ C ○ D ○

21 Language process is generally undergoing in the left hemisphere of the brain.

A ○ B ○ C ○ D ○

22 The rate of development of one side of the body has an influence on hemisphere preference in the fetus.

A ○ B ○ C ○ D ○

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Questions 23-26

Instructions to follow

- Do the following statements agree with the information given in the reading passage? In boxes 23-26 on your answer sheet, write
  TRUE if the statement agrees with the information
  FALSE if the statement contradicts the information
  NOT GIVEN if there is no information on this.

23 The study of twins shows that genetic determination is not the only factor for left Handedness.

24 The number of men with left-handedness is more than that of women.

25 Marc Dax's report was widely recognized in his time.

26 Juhn Wada based his findings on his research of people with language problems.

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Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40 which are based on Reading Passage 3

The Power of Nothing

A. Want to devise a new form of alternative medicine? No problem. Here is the recipe. Be warm, sympathetic, reassuring and enthusiastic. Your treatment should involve physical contact, and each session with your patients should last at least half an hour. Encourage your patients to take an active part in their treatment and understand how their disorders relate to the rest of their lives. Tell them that their own bodies possess the true power to heal. Make them pay you out of their own pockets. Describe your treatment in familiar words, but embroidered with a hint of mysticism: energy fields, energy flows, energy blocks, meridians, forces, auras, rhythms and the like. Refer to the knowledge of an earlier age: wisdom carelessly swept aside by the rise and rise of blind, mechanistic science. Oh, come off it, you are saying. Something invented off the top of your head could not possibly work, could it?

B. Well yes, it could — and often well enough to earn you a living. A good living if you are sufficiently convincing, or better still, really believe in your therapy. Many illnesses get better on their own, so if you are lucky and administer your treatment at just the right time you will get the credit. But that's only part of it. Some of the improvement really would be down to you. Your healing power would be the outcome of a paradoxical force that conventional medicine recognizes but remains oddly ambivalent about: the placebo effect.

C. Placebos are treatments that have no direct effect on the body, yet still work because the patient has faith in their power to heal. Most often the term refers to a dummy pill, but it applies just as much to any device or procedure, from a sticking plaster to a crystal to an operation. The existence of the placebo effect implies that even quackery may confer real benefits, which is why any mention of placebo is a touchy subject for many practitioners of complementary and alternative medicine, who are likely to regard it as tantamount to a charge of charlatanism. In fact, the placebo effect is a powerful part of all medical care, orthodox or otherwise, though its role is often neglected or misunderstood.

D. One of the great strengths of CAM may be its practitioners' skill in deploying the placebo effect to accomplish real healing. "Complementary practitioners are miles better at producing non-specific effects and good therapeutic relationships," says Edzard Ernst, professor of CAM at Exeter University. The question is whether CAM could be integrated into conventional medicines, as some would like, without losing much of this power.

E. At one level, it should come as no surprise that our state of mind can influence our physiology: anger opens the superficial blood vessels of the face; sadness pumps the tear glands. But exactly how placebos work their medical magic is still largely unknown. Most of the scant research done so far has focused on the control of pain because it's one of the commonest complaints and lends itself to experimental study. Here, attention has turned to the endorphins, morphine—like neurochemicals known to help control pain.

F. But exactly how placebos work their medical magic is still largely unknown. Most of the scant research to date has focused on the control of pain because it's one of the commonest complaints and lends itself to experimental study. Here, attention has turned to the endorphins, natural counterparts of morphine that are known to help

control pain. "Any of the neurochemicals involved in transmitting pain impulses or modulating them might also be involved in generating the placebo response," says Don Price, an oral surgeon at the University of Florida who studies the placebo effect in dental pain.

G. "But endorphins are still out front." That case has been strengthened by the recent work of Fabrizio Benedetti of the University of Turin, who showed that the placebo effect can be abolished by a drug, naloxone, which blocks the effects of endorphins. Benedetti induced pain in human volunteers by inflating a blood-pressure cuff on the forearm. He did this several times a day for several days, using morphine each time to control the pain. On the final day, without saying anything, he replaced the morphine with a saline solution. This still relieved the subjects' pain: a placebo effect. But when he added naloxone to the saline the pain relief disappeared. Here was direct proof that placebo analgesia is mediated, at least in part, by these natural opiates.

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H. Still, no one knows how belief triggers endorphin release, or why most people can't achieve placebo pain relief simply by willing it. Though scientists don't know exactly how placebos work, they have accumulated a fair bit of knowledge about how to trigger the effect. A London rheumatologist found, for example, that red dummy capsules made more effective painkillers than blue, green or yellow ones. Research on American students revealed that blue pills make better sedatives than pink, a colour more suitable for stimulants. Even branding can make a difference: if Aspirin or Tylenol is what you like to take for a headache, their chemically identical generic equivalents may be less effective.

I. It matters, too, how the treatment is delivered. Decades ago, when the major tranquilliser chlorpromazine was being introduced, a doctor in Kansas categorised his colleagues according to whether they were keen on it, openly skeptical of its benefits, or

took a "let's try and see'' attitude. His conclusion: the more enthusiastic the doctor, the better the drug performed. And this year Ernst surveyed published studies that compared doctors' bedside manners. The studies turned up one consistent finding: "Physicians who adopt a warm, friendly and reassuring manner," he reported, "are more effective than those whose consultations are formal and do not offer reassurance.

J. Warm, friendly and reassuring are precisely CAM's strong suits, of course. Many of the ingredients of that opening recipe — the physical contact, the generous swathes of time, the strong hints of supernormal healing power — are just the kind of thing likely to impress patients. It's hardly surprising, then, that complementary practitioners are generally best at mobilising the placebo effect, says Arthur Kleinman, professor of social anthropology at Harvard University.

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Questions 27-32

Instructions to follow

- Use the information in the passage to match the deed (listed A-H) with people below.
- Write the appropriate letter A-H in boxes 27-32 on your answer sheet.
- NB You may use any letter more than once.

A should easily be understood

B should improve by itself

C should not involve any mysticism

D ought to last a minimum length of time.

E needs to be treated at the right time

F should give more recognition

G can earn valuable money.

H do not rely on any specific treatment

27 Appointments with an alternative practitioner

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

28 An alternative practitioner's description of the treatment

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

29 An alternative practitioner who has faith in what he does

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

30 the illness of patients convinced of alternative practice

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

31 Improvements of patients receiving alternative practice

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

32 Conventional medical doctors (who is aware of placebo)

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

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Questions 33-35

Instructions to follow

- Choose the correct letter, A, B, C or D.
- Write your answers in boxes 33-35 on your answer sheet.

33 In the fifth paragraph, the writer uses the example of anger and sadness to illustrate that:

A People's feeling could affect their physical behaviour
B Scientists don't understand how the mind influences the body.
C Research on the placebo effect is very limited
D How placebo achieves its effect is yet to be understood.

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34 Research on pain control attracts most of the attention because

A scientists have discovered that endorphins can help to reduce pain
B Only a limited number of researchers gain relevant experience
C Pain reducing agents might also be involved in the placebo effect.
D Patients often experience pain and like to complain about it

35 Fabrizio Benedetti's research on endorphins indicates that

A They are widely used to regulate pain.
B They can be produced by willful thoughts
C They can be neutralized by introducing naloxone.
D Their pain-relieving effects do not last long enough.

Question 36-40

Instructions to follow

- Do the following statements agree with the information given in the reading passage? In boxes 36-40 on your answer sheet, write

  TRUE if the statement agrees with the information
  FALSE if the statement contradicts the information
  NOT GIVEN if there is no information on this.

36 There is enough information for scientists to fully understand the placebo effect.

37 A London based researcher discovered that red pills should be taken off the market.

38 People's preference for brands would also have an effect on their healing.

39 Medical doctors have a range of views of the newly introduced drug of chlorpromazine.

40 Alternative practitioners are seldom known for applying the placebo effect.

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IELTS Reading Test 14

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-13 which are based on Reading Passage 1

Thomas Young

A. Thomas Young (1773-1829) contributed 63 articles to the Encyclopedia Britannica, including 46 biographical entries (mostly on scientists and classicists) and substantial essays on “Bridge,” “Chromatics,” “Egypt,” “Languages” and “Tides”. Was someone who could write authoritatively about so many subjects a polymath, a genius or a dilettante? In an ambitious new biography, Andrew Robinson argues that Young is a good contender for the epitaph “the last man who knew everything.” Young has competition, however: The phrase, which Robinson takes for his title, also serves as the subtitle of two other recent biographies: Leonard Warren’s 1998 life of paleontologist Joseph Leidy (1823-1891) and Paula Findlen’s 2004 book on Athanasius Kircher (1602-1680), another polymath.

B. Young, of course, did more than write encyclopedia entries. He presented his first paper to the Royal Society of London at the age of 20 and was elected a Fellow a week after his 21st birthday. In the paper, Young explained the process of accommodation in the human eye —on how the eye focuses properly on objects at varying distances. Young hypothesized that this was achieved by changes in the shape of the lens. Young also theorized that light traveled in waves and he believed that, to account for the ability to

see in color, there must be three receptors in the eye corresponding to the three "principal colors" to which the retina could respond: red, green, violet. All these hypotheses Were subsequently proved to be correct.

C. Later in his life, when he was in his forties, Young was instrumental in cracking the code that unlocked the unknown script on the Rosetta Stone, a tablet that was "found" in Egypt by the Napoleonic army in 1799. The stone contains text in three alphabets: Greek, something unrecognizable and Egyptian hieroglyphs. The unrecognizable script is now known as demotic and, as Young deduced, is related directly to hieroglyphics. His initial work on this appeared in his Britannica entry on Egypt. In another entry, he coined the term Indo-European to describe the family of languages spoken throughout most of Europe and northern India. These are the landmark achievements of a man who was a child prodigy and who, unlike many remarkable children, did not disappear into oblivion as an adult.

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D. Born in 1773 in Somerset in England, Young lived from an early age with his maternal grandfather, eventually leaving to attend boarding school. He had devoured books from the age of two, and through his own initiative, he excelled at Latin, Greek, mathematics and natural philosophy. After leaving school, he was greatly encouraged by his mother's uncle, Richard Brocklesby, a physician and Fellow of the Royal Society. Following Brocklesby's lead, Young decided to pursue a career in medicine. He studied in London, following the medical circuit, and then moved on to more formal education in Edinburgh, Gottingen and Cambridge. After completing his medical training at the University of Cambridge in 1808, Young set up practice as a physician in London. He soon became a Fellow of the Royal College of Physicians and a few years later was appointed physician at St. George's Hospital.

E. Young's skill as a physician, however, did not equal his skill as a scholar of natural philosophy or linguistics. Earlier, in 1801, he had been appointed to a professorship of natural philosophy at the Royal Institution, where he delivered as many as 60 lectures in a year. These were published in two volumes in 1807. In 1804 Young had become secretary to the Royal Society, a post he would hold until his death. His opinions were sought on civic and national matters, such as the introduction of gas lighting to London and methods of ship construction. From 1819 he was superintendent of the Nautical Almanac and secretary to the Board of Longitude. From 1824 to 1829 he was physician to and inspector of calculations for the Palladian Insurance Company. Between 1816 and 1825 he contributed his many and various entries to the Encyclopedia Britannica, and throughout his career, he authored numerous books, essays and papers.

F. Young is a perfect subject for a biography — perfect, but daunting. Few men contributed so much to so many technical fields. Robinson's aim is to introduce non-scientists to Young's work and life. He succeeds, providing clear expositions of the technical material (especially that on optics and Egyptian hieroglyphs). Some readers of this book will, like Robinson, find Young's accomplishments impressive; others will see him as some historians have —as a dilettante. Yet despite the rich material presented in this book, readers will not end up knowing Young personally. We catch glimpses of a playful Young, doodling Greek and Latin phrases in his notes on medical lectures and translating the verses that a young lady had written on the walls of a summerhouse into Greek elegiacs. Young was introduced into elite society, attended the theatre and learned to dance and play the flute. In addition, he was an accomplished horseman. However, his personal life looks pale next to his vibrant career and studies.

G. Young married Eliza Maxwell in 1804, and according to Robinson, "their marriage was a happy one and she appreciated his work," Almost all we know about her is that she sustained her husband through some rancorous disputes about optics and that she

worried about money when his medical career was slow to take off. Very little evidence survives about the complexities of Young's relationships with his mother and father. Robinson does not credit them, or anyone else, with shaping Young's extraordinary mind. Despite the lack of details concerning Young's relationships, however, anyone interested in what it means to be a genius should read this book.

Questions 1-7

Instructions to follow

- Do the following statements agree with the information given in the reading passage? In boxes 1-7 on your answer sheet, write
  TRUE if the statement agrees with the information
  FALSE if the statement contradicts the information
  NOT GIVEN if there is no information on this.

1. 'The last man who knew everything' has also been claimed by other people.
2. All Young's articles were published in Encyclopedia Britannica.
3. Like others, Young wasn't so brilliant when growing up.
4. Young's talent as a doctor surpassed his other skills.
5. Young's advice was sought by people responsible for local and national issues.
6. Young took part in various social pastimes.
7. Young suffered from a disease in his later years.

Questions 8-13

Instructions to follow

- Answer the questions below. Choose NO MORE THAN THREE WORDS AND/OR A NUMBER from the passage for each answer.

8 How many life stories did Young write for the Encyclopedia Britannica?

9 What aspect of scientific research did Young focus on in his first academic paper?

10 What name did Young introduce to refer to a group of languages?

11 Who inspired Young to start his medical studies?

12 Where did Young get a teaching position?

13 What contribution did Young make to London?

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Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26 which are based on Reading Passage 2

The Sunset Our Nearest Star

The Sun is our nearest star and it dominates our sky from a distance of 'only' 150 million kilometers. Even though it appears to be the same size as the full Moon, it is over 400,000 times brighter, and dictates when we have night and day here on Earth. The Sun is the largest body in the Solar System and it is also the most massive, containing 99.9 per cent of the total mass of all the planets, moons, dwarf planets, asteroids and comets combined. This concentration of mass, and the accompanying gravitational force, is why the Sun sits at the very centre of the Solar System, pulling all the other bodies in orbit around it. We are entirely dependent on the Sun for the habitability of our planet, as it provides us with the energy in the form of heat and light that we require to survive. But it also brings many potential hazards, from the continual flow of hazardous radiation that always lurks just beyond Earth's atmosphere, to the sporadic and violent space weather that threatens much of our society's infrastructure.

Given that the Sun has a volume that is over a million times that of the Earth, yet contains only 330,000 times the mass, we can immediately deduce that its average density is far lower than that of a terrestrial planet. Indeed, the average density is about the same as that of water, and less than a quarter of the density of the Earth. The Sun is made mainly of the lightest elements, hydrogen (the Sun's fuel) and helium, in a gaseous form.

The source of the Sun's energy remained a mystery until Einstein's 1905 special theory of

relativity highlighted the promise of efficient nuclear fusion. For nuclear fusion to occur, matter needs to be under conditions of tremendous pressure and of extreme heat, so that the electric repulsion can be overcome, and the nuclei get close enough to smash into each other. It was the English astronomer Sir Arthur Eddington who realised in the 1920's that the physical conditions within the core of the Sun were extreme enough to permit the necessary nuclear reactions. The Sun converts 600,000 million kilograms of hydrogen to helium every second to sustain its phenomenal energy output.

The Sun's core is approximately 15,000,000 degrees Celsius and is the site of nuclear fusion. The energy from the core travels outwards through the radiation zone by the transfer of the energy from one molecule to another. Heated gases move the energy from the radiation zone through to the convection zone, where the gases start to cool and this causes them to sink back down to the radiation zone. Outside the convection zone is the photosphere, which is approximately 500 kilometers thick and is the surface layer of the sun. Beyond, there is a thin layer of gas that surrounds the photosphere called the chromosphere. Finally, the corona is another layer of gas that extends a long way outside of the Sun.

Observations of more evolved objects around us in the galaxy lead to our understanding of the eventual fate of the Sun. The Sun has sufficient hydrogen at the right temperature and density to continue creating helium for a further six billion years. Then, the supply of fuel, and all possibility of future nuclear reactions, will eventually be exhausted. By this point, the Sun will appear very different from how it does today. It will have become a red giant; a much cooler, redder, and far more bloated version of itself, with an atmosphere, puffed so large as to swallow up the planets Mercury and Venus and make conditions pretty uncomfortable on Earth. Eventually, the outer envelope of the red giant will be lost, expanding away to form a planetary nebula. The remaining hot core of the

star will be left exposed as a white dwarf, which will slowly cool and fade over billions of years until finally fading into a cold, dark, and dense ball of compressed matter.

From time to time, there are eruptions of matter from the Sun. The magnetic energy in an exceptionally powerful sun flare can heat and speed up a huge cloud of charged particles to form a coronal mass ejection. The cloud produced by such an eruption escapes out into interplanetary space, but can cause concern if directed towards Earth. When a coronal mass ejection reaches the Earth, it rattles the Earth's magnetic field to generate what is known as a 'geomagnetic storm'. The occurrence of the flare gives us advance notice of this event and that it will arrive between 15 hours and a couple of days later, depending on how fast it's moving, and how clear the passage between Sun and Earth is. The major effect for humans of a coronal mass ejection is on our satellites, which can be seriously damaged. Power cuts on Earth can also take place.

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Although we may now understand the basics of the Sun, we remain unable to reliably predict everything about it. There is much still to understand and learn about it, and it seems the more intensely it is studied, the more questions there are to answer.

Questions 14-19

Instructions to follow

- Complete the notes below. Write NO MORE THAN TWO WORDS for each answer.

- The Sun is the Earth's 14 .....
- The Sun contains 99.9% of the entire 15 ..... of our solar system.
- The Sun gives us the energy we need to survive, but also danger in the form of dangerous 16 ..... and powerful space weather.
- In spite of its size, the Sun has a low average 17 .....
- Nuclear fusion requires extreme 18 ..... and heat, which the Sun can provide.
- The Sun's energy is created from nuclear fusion changing 19 ..... to helium.

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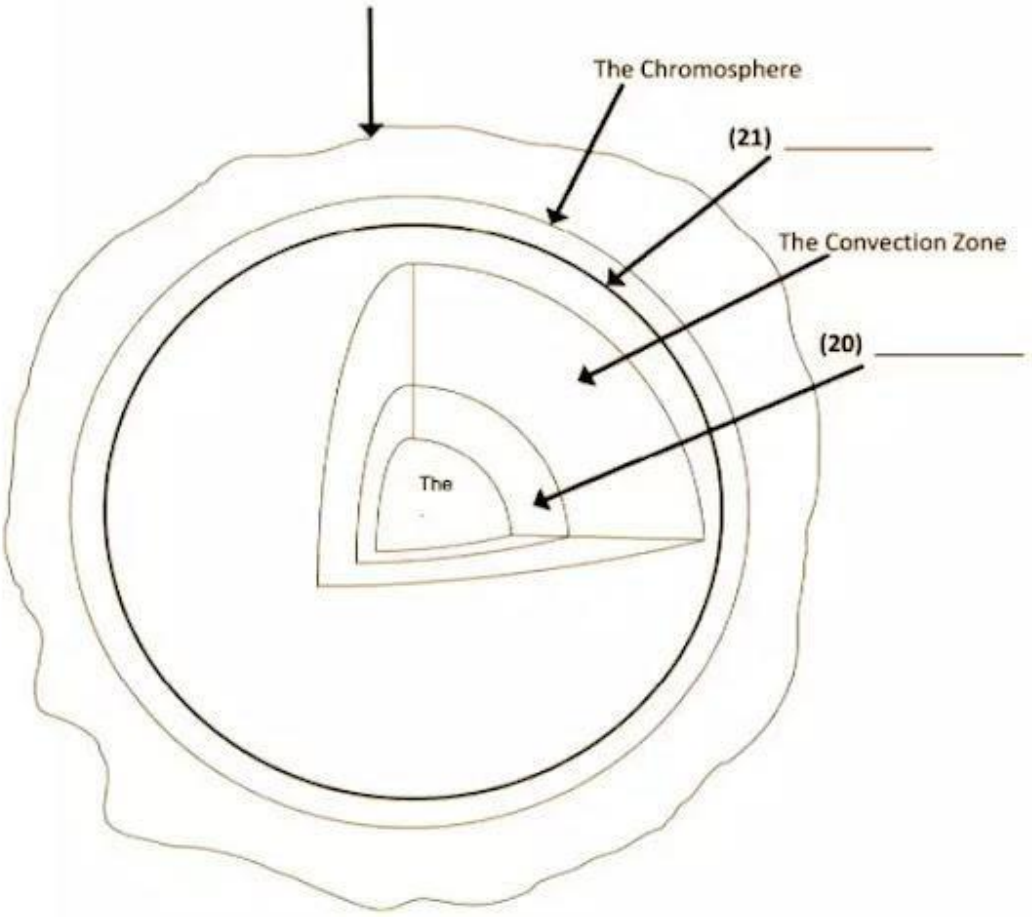
Questions 20-22

Instructions to follow

- Label the diagram below
- Write NO MORE THAN THREE WORDS from the test for each answer.

The Different Sections of the Sun

(22)_____



Questions 23-26

Instructions to follow

- Answer the questions below. Write NO MORE THAN THREE WORDS AND/OR A NUMBER from the test for each answer.

23 For how much longer will the Sun continue to operate nuclear fusion?

24 What will the outer section of the Sun become following the red giant stage?

25 What part of a powerful Sun flare heats up and accelerates the particles that make up a coronal mass ejection?

26 What can the geomagnetic storms caused by coronal mass ejections cause on Earth?

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Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40 which are based on Reading Passage 3

US Shale Gas Fracking

A. We have had widespread drilling for oil and gas deposits for more than 100 years in the United States. Until the 1990's, most of this recovery has occurred from conventional wells that were drilled down to rock formations, from which hydrocarbons could be pumped to the surface. The discovery of hydraulic fracking in the late 1940's has long allowed companies to extract gas and oil from shale, but the perfection of these two techniques over the past few decades has allowed the process to become cost effective. There are numerous shale plays in the United States from which shale gas can be extracted, and firms are busy drilling wells in many areas of the country.

B. Shale gas is natural methane in rock formations deep underground that, before fracking, was not feasible to extract. Its removal today depends on hydraulic fracturing and horizontal drilling. Hydraulic fracturing is the use of pressure to force liquids containing proppants (often sand) into rock strata, so that hydrocarbons are available for extraction. Current technology uses water, sand, and miscellaneous fluids, all of which must be imported to the well site. A wellbore is drilled, and then the fracturing fluid is forced through holes in the casing into the plays. High pressures are used to create fissures where the proppants are deposited to hold fissures open, so that hydrocarbons can be released. Hydraulic fracturing occurs in a number of stages and the fracturing fluid is forced into a small portion of the wellbore at each stage. After the hydraulic fracturing is

completed, some of the fracturing fluid comes back up the well. Because the flowback and wastewater from a well can be toxic, it must be disposed of in a manner that does not create any health, safety, or environmental problems. The underground areas from which the gas is extracted may be left with cavities, which in turn can sometimes cause ground subsidence.

C. The development of American shale gas deposits has been accompanied by notable benefits and a significant impact on the American economy. Next year, it is estimated that the development of America's shale gas resources will employ 869,000 people. The shale gas industry will have capital expenditures of $48 billion and pay more than $28 billion in federal and state taxes this year. Due to shale gas, the US is using less coal and the country's electricity costs have been lowered by about ten per cent. Shale gas has also contributed to a decrease in imports of foreign natural gas.

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D. Yet not everything is positive. The development of shale gas resources is associated with its toxic pollutants and environmental problems. It needs to be mentioned that the American federal and state governments were not prepared for the problems that accompany shale gas development. A lack of sufficient regulatory oversight in the US when the industry began allowed some unfortunate situations and instances of damage that could have been prevented.

E. Sites where wells are drilled for extracting shale gas often cover about two hectares and involve increased traffic, noise, light, dangerous equipment, and toxic chemicals. The activities and conditions at a site therefore create a potential for contamination and environmental degradation. The major risk involves damage from the toxic chemicals used in hydraulic fracturing. The fracking fluid is approximately 99.5 percent water and sand and 0.5 per cent additives used to enhance hydrocarbon recovery. An average of

5000 gallons of chemical additives may be used to frack a well and some of them are toxic. Since different chemicals and different amounts are used at each well, the toxicities may vary.

F. Under US federal law, the chemicals used at a well are exempted from full reporting requirements. Under most state laws, the supplier or the service company of a fracturing operation must disclose information, unless the chemicals are claimed as a trade secret. Recently, it was estimated that in approximately two-thirds of the cases the complete chemical compositions were not reported. Chemical secrecy is a problem, because persons working at wells and persons who come into contact with chemicals used at a well do not have sufficient information to know whether they need medical attention. Without timely information of the chemicals involved in a spill or release, first responders to emergencies, health professionals, and property owners may lack key information for deciding what actions they should take.

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G. Issues are also being raised about the need for better management practices to reduce the risks that accompany shale gas development. Hundreds of best management practices have been identified to employ during energy development and extraction, but most of these are currently voluntary. In the absence of mandatory management practices covering all of the stages of shale gas development, there are not sufficient assurances that people and the environment are adequately protected against health and safety problems. By adopting more mandatory management practices, the industry may be able to reduce the risks and shale gas development would be beneficial overall.

H. The American experiences can be helpful in discerning whether other countries might proceed with shale gas development. The activities connected with developing shale gas can be assessed to learn about the risks, dangers, and problems that need to be addressed. Then, existing laws and regulations can be evaluated to determine their

probable success in addressing the risks. Additional regulations can be developed if they are needed and firms can be required to adopt best management practices. Governments can require disclosure of dangerous materials and establish funding mechanisms to pay for regulatory oversight and for collecting monies to be used to remedy future damages caused by fracking.

Questions 27-30

Instructions to follow

- The test above has 8 paragraphs A-H. Which paragraph contains the following information?
- Write your answer in boxes 27-34 on your answer sheet.

27 Not all chemicals used for fracking are poisonous.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

28 Shale gas is found deep under the ground.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

29 At present, recommended management practices for fracking companies are not compulsory.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

30 The US government did not initially enforce enough control on the fracking industry.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

31 Fracking techniques have been available since the 1940's.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

32 Finance should be set aside to pay for future problems that fracking might create.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

33 Some companies do not publicise the chemicals that they use for fracking.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

34 Using shale gas has reduced US expenditure on electricity generation.

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

Questions 35-40

Instructions to follow

- Choose FIVE letters, A-I. Write the following sentences below accurately describe disadvantages to the US shale gas fracking industry?

Write the correct letter, A-I, in any order in boxes 35-40 on your answer sheet.

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A ○ Toxic liquid can flow up a drilling installation and potentially create pollution.

B ○ Underground gas explosions can be a risk to local communities.

C ○ The ground over the fracking areas can sometimes become unsafe.

D ○ Oil deposits can sometimes be lost during gas fracking.

E ○ Fracking installations generate additional traffic pollution.

F ○ Excess light can be present at fracking installations.

G ○ Sand used in fracking can pollute the water table.

H ○ Workers contaminated during fracking operations can have correct treatment delayed.

I ○ Tax dollars are taken out of the country by overseas extraction companies.

IELTS Reading Test 15

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-13 which are based on Reading Passage 1

Hearing Impairment

A. Hearing impairment or other auditory function deficits in young children can have a major impact on their development of speech and communication, resulting in a detrimental effect on their ability to learn at school. This is likely to have major consequences for the individual and the population as a whole. The New Zealand Ministry of Health has found from research carried out over two decades that 6-10% of children in that country are affected by hearing loss.

B. A preliminary study in New Zealand has shown that classroom noise presents a major concern for teachers and pupils. Modern teaching practices, the organisation of desks in the classroom, poor classroom acoustics, and mechanical means of ventilation such as air conditioning units all contribute to the number of children unable to comprehend the teacher's voice. Education researchers Nelson and Soli have also suggested that recent trends in learning often involve collaborative interaction of multiple minds and tools as much as individual possession of information. This all amounts to heightened activity and noise levels, which have the potential to be particularly serious for children experiencing auditory function deficits. Noise in classrooms can only exacerbate their difficulty in comprehending and processing verbal communication with other children and

instructions from the teacher.

C. Children with auditory function deficits are potentially failing to learn to their maximum potential because of noise levels generated in classrooms. The effects of noise on the ability of children to learn effectively in typical classroom environments are now the subject of increasing concern. The International Institute of Noise Control Engineering (I-INCE), on the advice of the World Health Organization, has established an international working party, which includes New Zealand, to evaluate noise and reverberation control for school rooms.

D. While the detrimental effects of noise in classroom situations are not limited to children experiencing disability, those with a disability that affects their processing of speech and verbal communication could be extremely vulnerable. The auditory function deficits in question include hearing impairment, autistic spectrum disorders (ASD) and attention deficit disorders (ADD/ADHD).

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E. Autism is considered a neurological and genetic life-long disorder that causes discrepancies in the way information is processed. This disorder is characterised by interlinking problems with social imagination, social communication and social interaction. According to Janzen, this affects the ability to understand and relate in typical ways to people, understand events and objects in the environment, and understand or respond to sensory stimuli. Autism does not allow learning or thinking in the same ways as in children who are developing normally. Autistic spectrum disorders often result in major difficulties in comprehending verbal information and speech processing. Those experiencing these disorders often find sounds such as crowd noise and the noise generated by machinery painful and distressing. This is difficult to scientifically quantify as such extra-sensory stimuli vary greatly from one autistic individual to another. But a child who finds any type of noise in their classroom or learning space intrusive is likely to

be adversely affected in their ability to process information.

F. The attention deficit disorders are indicative of neurological and genetic disorders and are characterised by difficulties with sustaining attention, effort and persistence, organisation skills and disinhibition. Children experiencing these disorders find it difficult to screen out unimportant information and focus on everything in the environment rather than attending to a single activity. Background noise in the classroom becomes a major distraction, which can affect their ability to concentrate.

G. Children experiencing an auditory function deficit can often find speech and communication very difficult to isolate and process when set against high levels of background noise. These levels come from outside activities that penetrate the classroom structure, from teaching activities, and other noise generated inside, which can be exacerbated by room reverberation. Strategies are needed to obtain the optimum classroom construction and perhaps a change in classroom culture and methods of teaching. In particular, the effects of noisy classrooms and activities on those experiencing disabilities in the form of auditory function deficit need thorough investigation. It is probable that many undiagnosed children exist in the education system with 'invisible' disabilities. Their needs are less likely to be met than those of children with known disabilities.

H. The New Zealand Government has developed a New Zealand Disability Strategy and has embarked on a wide-ranging consultation process. The strategy recognises that people experiencing disability face significant barriers in achieving a full quality of life in areas such as attitude, education, employment and access to services. Objective 3 of the New Zealand Disability Strategy is to 'Provide the Best Education for Disabled People' by improving education so that all children, youth learners and adult learners will have equal opportunities to learn and develop within their already existing local school. For a

successful education, the learning environment is vitally significant, so any effort to improve this is likely to be of great benefit to all children, but especially to those with auditory function disabilities.

I. A number of countries are already in the process of formulating their own standards for the control and reduction of classroom noise. New Zealand will probably follow their example. The literature to date on noise in school rooms appears to focus on the effects on schoolchildren in general, their teachers and the hearing impaired. Only limited attention appears to have been given to those students experiencing the other disabilities involving auditory function deficit. It is imperative that the needs of these children are taken into account in the setting of appropriate international standards to be promulgated in future.

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Questions 1-6

Instructions to follow

- Reading Passage 1 has nine sections, A-I. Which section contains the following information?
- Write the correct letter, A-I, in boxes 1-6 on your answer sheet.

1 an account of a national policy initiative

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

2 a description of a global team effort

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

3 a hypothesis as to one reason behind the growth in classroom noise

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

4 a demand for suitable worldwide regulations

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

5 a list of medical conditions which place some children more at risk from noise than others

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

6 the estimated proportion of children in New Zealand with auditory problems

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ I ○

Questions 7-10

Instructions to follow

- Answer the questions below. Choose NO MORE THAN TWO WORDS AND/OR A NUMBER from the passage for each answer.
- Write your answer in boxes 7-10 on your answer sheet.

7 For what period of time has hearing loss in schoolchildren been studied in New Zealand?

8 In addition to machinery noise, what other type of noise can upset children with autism?

9 What term is used to describe the hearing problems of schoolchildren which have not been diagnosed?

10 What part of the New Zealand Disability Strategy aims to give school children equal opportunity?

Questions 11 and 12

Instructions to follow

- Choose TWO letter, A-F.
- Write the correct letter in boxes 11 and 12 on your answer sheet.

The list below includes factors contributing to classroom noise. Which TWO are mentioned by the writer of the passage?

A current teaching methods
B echoing corridors
C cooling systems
D large class sizes
E loud-voiced teachers
B playground games

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Question 13

Instructions to follow

- Choose the correct letter, A, B, C or D.
- Write the correct letter in boxes 13 on your answer sheet.

What is the writer's overall purpose in writing this article?

A to compare different methods of dealing with auditory problems
B to provide solutions for overly noisy learning environments
C to increase awareness of the situation of children with auditory problems
D to promote New Zealand as a model for other countries to follow

Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26 which are based on Reading Passage 2

Saving British Bitterns

A. Breeding bitterns became extinct in the UK by 1886 but, following re-colonization early last century, numbers rose to a peak of about 70 boomings (singing) males in the 1950s, falling to fewer than 20 by the 1990s. In the late 1980s, it was clear that the bittern was in trouble, but there was little information on which to base recovery actions.

B. Bitterns have cryptic plumage and shy nature, usually remaining hidden within the cover of reedbed vegetation. Our first challenge was to develop standard methods to monitor their numbers. The boom of the male bittern is its most distinctive feature during the breeding season, and we developed a method to count them using the sound patterns unique to each individual. This not only allows us to be much more certain of the number of booming males in the UK, but also enables us to estimate local survival of males from one year to the next

C. Our first direct understanding of the habitat needs of breeding bitterns came from comparisons of reedbed sites that had lost their booming birds with those that retained them. This research showed that bitterns had been retained in reedbeds where the natural process of succession, or drying out, had been slowed through management. Based on this work, broad recommendations on how to manage and rehabilitate reedbeds for bitterns were made, and funding was provided through the EU LIFE Fund to

manage 13 sites within the core breeding range. This project, though led by the RSPB, involved many other organizations.

D. To refine these recommendations and provide fine-scale, quantitative habitat prescriptions on the bitterns7 preferred feeding habitat, we radio-tracked male bitterns on the RSPB's Minsmere and Leighton Moss reserves. This showed clear preferences for feeding in the wetter reedbed margins, particularly within the reedbed next to larger open pools. The average home range sizes of the male bitterns we followed (about 20 hectares) provided a good indication of the area of reedbed needed when managing or creating habitat for this species. Female bitterns undertake all the incubation and care of the young, so it was important to understand their needs as well. Over the course of our research, we located 87 bittern nests and found that female bitterns preferred to nest in areas of continuous vegetation, well into the reedbed, but where water was still present during the driest part of the breeding season.

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E. The success of the habitat prescriptions developed from this research has been spectacular. For instance, at Minsmere, booming bittern numbers gradually increased from one to 10 following reed bed lowering, a management technique designed to halt the drying out process. After a low point of 11 booming males in 1997, bittern numbers in Britain responded to all the habitat management work and started to increase for the first time since the 1950s.

F. The final phase of the research involved understanding the diet, survival, and dispersal of bittern chicks. To do this we fitted small radio tags to young bittern chicks in the nest, to determine their fate through to fledging and beyond. Many chicks did not survive to fledging and starvation was found to be the most likely reason for their demise. The fish prey fed to chicks was dominated by those species penetrating into the reed edge. So, an important element of recent studies (including a PhD with the University of Hull) has been

the development of recommendations on habitat and water conditions to promote healthy native fish populations

G. Once independent, radio-tagged young bitterns were found to seek out new sites during their first winter; a proportion of these would remain on new sites to breed if the conditions were suitable. A second EU LIFE-funded project aims to provide these suitable sites in new areas. A network of 19 sites developed through this partnership project will secure a more sustainable UK bittern population with successful breeding outside of the core area, less vulnerable to chance events and sea level rise.

H. By 2004, the number of booming male bitterns in the UK had increased to 55, with almost all of the increase being on those sites undertaking management based on advice derived from our research. Although science has been at the core of the bitter story, success has only been achieved through the trust, hard work, and dedication of all the managers, owners, and wardens of sites that have implemented, in some cases very drastic, management to secure the future of this wetland species in the UK. The constructed bunds and five major sluices now control the water level over 82 ha, with a further 50 ha coming under control in the winter of 2005/06. Reed establishment has principally used natural regeneration or planted seedlings to provide small core areas that will in time expand to create a bigger reed area. To date, nearly 275,000 seedlings have been planted and reed cover is extensive. Over 3 km of new ditches have been formed, 3.7 km of the existing ditch have been re-profiled and 2.2 km of old meander (former estuarine features) has been cleaned out.

I. Bitterns now regularly winter on the site, some indication that they are staying longer into the spring. No breeding has yet occurred but a booming male was present in the spring of 2004. A range of wildfowl breeds, as well as a good number of reedbed passerines including reed bunting, reed, sedge and grasshopper warblers. Numbers of wintering

shovelers have increased so that the site now holds a UK important wintering population. Malltraeth Reserve now forms part of the UK network of key sites for water vole (a UK priority species) and 12 monitoring transects have been established. Otter and brown-hare occur on the site as does the rare plant. Pillwort.

Questions 14-20

Instructions to follow

- The reading passage has seven paragraphs, A-H.
- Choose the correct heading for paragraphs A-H from the list below. Write the correct number, i-viii, in boxes 14-20 on your answer sheet.

List of Headings

i. fluctuation in bittern number
ii. research findings into habitats and decisions made
iii. protect the young bittern
iv. international cooperation works
v. Began in the calculation of the number
vi. importance of food
vii. Research has been successful.
viii. research into the reedbed
ix. reserve established holding bittern in winter

14 Paragraph A
15 Paragraph B
16 Paragraph C
17 Paragraph D
18 Paragraph F
19 Paragraph G
20 Paragraph H

Questions 21-26

Instructions to follow

- Answer the questions below. Choose NO MORE THAN THREE WORDS AND/OR A NUMBER from the passage for each answer.

21 When did the bird of bitten reach its peak of number?

22 What does the author describe the bittern's character?

23 What is the main cause for the chick bittern's death?

24 What is the main food for chick bittern?

25 What system does it secure for the stability of the bittern's population?

26 Besides bitter and rare vegetation, what mammal does the plant benefit from?

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Questions 27

Instructions to follow

- Choose the correct letter, A, B, C or D.
- Write your answer in boxes 27 on your answer sheet.

A ○ Main characteristic of a bird called bittern.

B ○ Cooperation can protect an endangered species.

C ○ The difficulty of accessing information about a bittern's habitat and diet.

D ○ To save wetland and reed beds in the UK.

Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 28-40 which are based on Reading Passage 3

Facial expression 1

A. A facial expression is one or more motions or positions of the muscles in the skin. These movements convey the emotional state of the individual to observers. Facial expressions are a form of nonverbal communication. They are a primary means of conveying social information among aliens, but also occur in most other mammals and some other animal species. Facial expressions and their significance in the perceiver can, to some extent, vary between cultures with evidence from descriptions in the works of Charles Darwin.

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B. Humans can adopt a facial expression to read as a voluntary action. However, because expressions are closely tied to emotion, they are more often involuntary. It can be nearly impossible to avoid expressions for certain emotions, even when it would be strongly desirable to do so; a person who is trying to avoid insulting an individual he or she finds highly unattractive might, nevertheless, show a brief expression of disgust before being able to reassume a neutral expression. Microexpressions are one example of this phenomenon. The close link between emotion and expression can also work in the order direction; it has been observed that voluntarily assuming an expression can actually cause the associated emotion.

C. Some expressions can be accurately interpreted even between members of different species – anger and extreme contentment being the primary examples. Others, however, are difficult to interpret even in familiar individuals. For instance, disgust and fear can be

tough to tell apart. Because faces have only a limited range of movement, expressions rely upon fairly minuscule differences in the proportion and relative position of facial features, and reading them requires considerable sensitivity to the same. Some faces are often falsely read as expressing some emotion, even when they are neutral because their proportions naturally resemble those another face would temporarily assume when emoting.

D. Also, a person's eyes reveal much about how they are feeling, or what they are thinking. Blink rate can reveal how nervous or at ease a person maybe. Research by Boston College professor Joe Tecce suggests that stress levels are revealed by blink rates. He supports his data with statistics on the relation between the blink rates of presidential candidates and their success in their races. Tecce claims that the faster blinker in the presidential debates has lost every election since 1980. Though Tecce's data is interesting, it is important to recognize that non-verbal communication is multi-channelled, and focusing on only one aspect is reckless. Nervousness can also be measured by examining each candidates' perspiration, eye contact and stiffness.

E. As Charles Darwin noted in his book The Expression of the Emotions in Man and Animals: the young and the old of widely different races, both with man and animals, express the same state of mind by the same movements. Still, up to the mid-20th century, most anthropologists believed that facial expressions were entirely learned and could, therefore, differ among cultures. Studies conducted in the 1960s by Paul Ekman eventually supported Darwin's belief to a large degree.

F. Ekman's work on facial expressions had its starting point in the work of psychologist Silvan Tomkins. Ekman showed that contrary to the belief of some anthropologists including Margaret Mead, facial expressions of emotion are not culturally determined, but universal across human cultures. The South Fore people of New Guinea were chosen as

subjects for one such survey. The study consisted of 189 adults and 130 children from among a very isolated population, as well as twenty-three members of the culture who lived a less isolated lifestyle as a control group. Participants were told a story that described one particular emotion; they were then shown three pictures (two for children) of facial expressions and asked to match the picture which expressed the story's emotion.

G. While the isolated South Fore people could identify emotions with the same accuracy as the non-isolated control group, problems associated with the study include the fact that both fear and surprise were constantly misidentified. The study concluded that certain facial expressions correspond to particular emotions and cannot be covered, regardless of cultural background, and regardless of whether or not the culture has been isolated or exposed to the mainstream.

H. Expressions Ekman found to be universally included those indicating anger, disgust, fear, joy, sadness, and surprise (not that none of these emotions has a definitive social component, such as shame, pride, or schadenfreude). Findings on contempt (which is social) are less clear, though there is at least some preliminary evidence that this emotion and its expression are universally recognized. This may suggest that the facial expressions are largely related to the mind and each part on the face can express specific emotion.

Questions 28-32

Instructions to follow

- Complete the Summary paragraph below. In boxes 28-32 on your answer sheet, write the correct answer with NO MORE THAN TWO WORDS.

Summary

The result of Ekman's study demonstrates that fear and surprise are persistently 28 ..... and made a conclusion that some facial expressions have something to do with certain 29 ..... Which is impossible covered, despite of 30 ..... and whether the culture has been 31 ..... or 32 ..... to the mainstream.

Questions 33-38

Instructions to follow

- The reading Passage has seven paragraphs A-H. Which paragraph contains the following information?
- Write the correct letter A-H, in boxes 33-38 on your answer sheet.
- NB You may use any letter more than once.

33 the difficulty identifying the actual meaning of facial expressions

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

34 the importance of culture on facial expressions is initially described

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

35 collected data for the research on the relation between blink and the success in elections

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

36 the features on the sociality of several facial expressions

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

37 an indicator to reflect one's extent of nervousness

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

38 the relation between emotion and facial expressions

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

Questions 39-40

Instructions to follow

- Choose two letters from the A-E
- Write your answers in boxes 39-40 on your answer sheet

Which Two of the following statements are true according to Ekman's theory?

A ○ No evidence shows animals have their own facial expressions.

B ○ The potential relationship between facial expression and state of mind exists

C ○ Facial expressions are concerning different cultures.

D ○ Different areas on the face convey a certain state of mind.

E ○ Mind controls men's facial expressions more obvious than women's

IELTS Reading Test 16

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-14 which are based on Reading Passage 1

Biology of Bitterness

To many people, grapefruit is palatable only when doused in sugar. Bitter Blockers like adenosine monophosphate could change that.

A. There is a reason why grapefruit juice is served in little glasses: most people don't want to drink more than a few ounces at a time. Naringin, a natural chemical compound found in grapefruit, tastes bitter. Some people like that bitterness in small doses and believe it enhances the general flavor, but others would rather avoid it altogether. So juice packagers often select grapefruit with low naringin though the compound has antioxidant properties that some nutritionists contend may help prevent cancer and arteriosclerosis.

B. It is possible, however, to get the goodness of grapefruit juice without the bitter taste. I found that out by participating in a test conducted at the Linguagen Corporation, a biotechnology company in Cranbury, New Jersey. Sets of two miniature white paper cups, labeled 304and 305, were placed before five people seated around a conference table. Each of us drank from one cup and then the other, cleansing our palates between tastes with water and a soda cracker. Even the smallest sip of 304 had grapefruit 's unmistakable bitter bite. But 305 was smoother; there was the sour taste of citrus but none of the

bitterness of naringin. This juice had been treated with adenosine monophosphate, or AMP, a compound that blocks the bitterness in foods without making them less nutritious.

C. Taste research is a booming business these days, with scientists delving into all five basics-sweet, bitter, sour, salty, and umami, the savory taste of protein. Bitterness is of special interest to industry because of its untapped potential in food. There are thousands of bitter -tasting compounds in nature. They defend plants by warning animals away and protect animals by letting them know when a plant may be poisonous. But the system isn't foolproof. Grapefruit and cruciferous vegetable like Brussels sprouts and kale are nutritious despite-and sometimes because of-their bitter-tasting components. Over time, many people have learned to love them, at least in small doses. "Humans are the only species that enjoys bitter taste," says Charles Zuker, a neuroscientist at the University of California School of Medicine at San Diego. "Every other species is averse to bitter because it means bad news. But we have learned to enjoy it. We drink coffee, which is bitter, and quinine [in tonic water] too. We enjoy having that spice in our lives." Because bitterness can be pleasing in small quantities but repellent when intense, bitter blockers like AMP could make a whole range of foods, drinks, and medicines more palatable-and therefore more profitable.

D. People have varying capacities for tasting bitterness, and the differences appear to be genetic. About 75 percent of people are sensitive to the taste of the bitter compounds phenylthiocarbamide and 6-n-propylthiouracil. and 25 percent are insensitive. Those who are sensitive to phenylthiocarbamide seem to be less likely than others to eat cruciferous vegetables, according to Stephen Wooding, a geneticist at the University of Utah. Some people, known as supertasters, are especially sensitive to 6-n-propylthiouraci because they have an unusually high number of taste buds. Supertasters tend to shun all kinds of bitter-tasting things, including vegetable, coffee, and dark chocolate. Perhaps as a result,

they tend to be thin. They're also less fond of alcoholic drinks, which are often slightly bitter. Dewar's scotch, for instance, tastes somewhat sweet to most people. " But a supertaster tastes no sweetness at all, only bitterness," says Valerie Duffy, an associate professor of dietetics at the University of Connecticut at Storrs.

E. In one recent study, Duffy found that supertasters consume alcoholic beverages, on average, only two to three times a week, compared with five or six times for the average nontasters. Each taste bud, which looks like an onion, consists of 50 to 100 elongated cells running from the top of the bud to the bottom. At the top is a little clump of receptors that capture the taste molecules, known as tastants, in food and drink. The receptors function much like those for sight and smell. Once a bitter signal has been received, it is relayed via proteins known as G proteins. The G protein involved in the perception of bitterness, sweetness, and umami was identified in the early 1990s by Linguagen's founder, Robert Margolskee, at Mount Sinai School of Medicine in New York City. Known as gustducin, the protein triggers a cascade of chemical reactions that lead to changes in ion concentrations within the cell. Ultimately, this delivers a signal to the brain that registers as bitter. "The signaling system is like a bucket brigade," Margolskee says. "It goes from the G protein to other proteins."

F. In 2000 Zuker and others found some 30 different kinds of genes that code for bitter-taste receptors. "We knew the number would have to be large because there is such a large universe of bitter tastants," Zuker says. Yet no matter which tastant enters the mouth or which receptor it attaches to, bitter always tastes the same to us. The only variation derives from its intensity and the ways in which it can be flavored by the sense of smell. "Taste cells are like a light switch," Zuker says. "They are either on or off."

G. Once they figured put the taste mechanism, scientists began to think of ways to interfere

with it. They tried AMP, an organic compound found in breast milk and other substances, which is created as cells break down food. Amp has no bitterness of its own, but when put it in foods, Margolskee and his colleagues discovered, it attaches to bitter-taste receptors. As effective as it is, AMP may not be able to dampen every type pf bitter taste, because it probably doesn't attach to all 30 bitter-taste receptors. So Linguagen has scaled up the hunt for other bitter blockers with a technology called high-throughput screening. Researchers start by coaxing cells in culture to activate bitter-taste receptors. Then candidate substances, culled from chemical compound libraries, are dropped onto the receptors, and scientists look for evidence of a reaction.

H. Tin time, some taste researchers believe, compounds like AMP will help make processed foods less unhealthy. Consider, for example, that a single cup of Campbell's chicken noodle soup contains 850 milligrams of sodium chloride, or table salt-more than a third of the recommended daily allowance. The salt masks the bitterness created by the high temperatures used in the canning process, which cause sugars and amino acids to react. Part of the salt could be replaced by another salt, potassium chloride, which tends to be scarce in some people's diets. Potassium chloride has a bitter aftertaste, but that could be eliminated with a dose of AMP. Bitter blockers could also be used in place of cherry or grape flavoring to take the harshness out of children's cough syrup, and they could dampen the bitterness of antihistamines, antibiotics, certain HIV drugs, and other medications.

I. A number of foodmakers have already begun to experiment with AMP in their products, and other bitter blockers are being developed by rival firms such as Senomyx in La Jolla, California. In a few years, perhaps, after food companies have taken the bitterness from canned soup and TV dinners, they can set their sights on something more useful: a bitter blocker in a bottle that any of us can sprinkle on our brussels sprouts or stir into our

grapefruit juice.

Questions 1-8

Instructions to follow

- The reading Passage has seven paragraphs A-I.
- Which paragraph contains the following information?
- Write the correct letter A-I, in boxes 1-8 on your answer sheet.

1. Experiment on bitterness conducted
2. Look into the future application
3. Bitterness means different information for human and animals
4. Spread process of bitterness inside of body
5. How AMP blocks bitterness
6. Some bitterness blocker may help lower unhealthy impact
7. Bitterness introduced from a fruit
8. Genetic feature determines sensitivity

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Question 9-12

Summary

Instructions to follow

- Complete the following summary of the paragraphs of Reading Passage, using no more than two words from the Reading Passage for each answer.
- Write your answers in boxes 9-12 on your answer sheet.

The reason why grapefruit tastes bitter is because a substance called __9__ contained in it. However, bitterness plays a significant role for plants. It gives a signal that certain plant is __10__. For human beings, different person carries various genetic abilities of tasting bitterness. According to a scientist at the University of Utah, __11__ have exceptionally plenty of __12__, which allows them to perceive bitter compounds.

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Questions 13-14

Instructions to follow

- Choose the correct letter, A, B, C or D.
- Write your answers in boxes 13-14 on your answer sheet.

13 What is the main feature of AMP according to this passage?

A ○ offset bitter flavour in food

B ○ only exist in 304 cup

C ○ tastes like citrus

D ○ chemical reaction when meets biscuit

14 What is the main function of G protein?

A collecting taste molecule

B identifying different flavors elements

A resolving large molecules

D transmitting bitter signals to the brain

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Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 15-26 which are based on Reading Passage 2

Franklin's Lost Expedition

A. What could have resulted in the deaths of 129 men and officers aboard the ship in Franklin's lost expedition? The fate of the ship remains a topic of investigation, still intriguing to some international researchers of today. Sir John Franklin and his crew set sail from England in 1845 in search of the Northwest Passage, a sea route that was rumored to connect the continents of Europe and Asia. Two ships, HMS Erebus and HMS Terror, headed the expedition. Franklin's wife, Lady Jane Franklin, had become worried after three years without any communication from the expedition. She then persuaded the government to begin investigating. The sites of the three first search efforts were Lancaster Sound, the Bering Strait and over land beginning at the Mackenzie River.

B. All of these searches, as well as others that followed were unsuccessful in discovering the fate of the crew. Lady Franklin began her own search in 1851, but about a year later, these searches led by McClure and Collinson and their crews also turned up missing. Collinson eventually found his way back to England, while McClure was found and returned back in 1854. That same year, searcher John Rae reported to the Admiralty that according to Inuit information and some discovered items, it seemed that Franklin and the crew had perished. In a desperate last attempt to survive, some may have even taken up cannibalism. Rae was given what would be about $400,000 Canadian dollars today as a

reward. Therefore, it appeared that Admiralty would not pursue any further search efforts.

C. However, Lady Franklin did not give up there, and in 1857 she began commissioning another search with Leopold McClintock as its leader. It was McClintock who found many corpses on King William Island, along with a journal which outlined the journey of Franklin's two ships, Erebus and Terror. On May 1847, it seemed according to the journal that the ships were stuck in ice. Even so, there should have been enough food supplies onboard the ships to last three years. "All well," said the note. Another note from April 25, 1848 made the situation appear more dire. Apparently, the ships had remained stuck in ice for over a year, with several men abandoning the expedition within the days before.

D. Researchers, scientists and historians have continued to ponder this mystery for over 160 years. What had happened which had caused the men to abandon ship, rather than wait for the ice to melt? The Northwest Passage is well-known for its harsh weather and constantly changing sea ice. To the west King William Island, particularly strong gusts of wind howl over layers of thick ice, formed over periods of hundreds of years. How long did the ice trap Franklin's two unfortunate ships so that they could not move?

E. Investigators and researchers continue looking for answers to these questions regarding Franklin's lost expedition, attempting to explain what happened to the captain and his crew. From American explorer Charles Francis Hall in 1860-1863, to Frederick Schwatka in 1879, as well as the Canadian government's search in 1930 and William Gibson's search a year later, some hints were found in the form of human remains, Inuit information and discovered items, but no certain conclusions could be reached. In 1981, along the western coast of King William Island, the University of Alberta-led Franklin Expedition Forensic Anthropology Project dug up human remains. Forensic testing at the time suggested that

the cause of death was likely either lead poisoning and scurvy. Lead poisoning has continued to persist as a possible explanation for the loss of the expedition since then. However, proving this is not so simple, as surgeons' journals (the "sick books") which recorded illness on board have yet to be found.

F. Still without Franklin sick books, a team of researchers from the University of Glasgow took up a study of the sick books of Royal Naval ships which were searching for Franklin. The search ships were equipped similarly, with the same provisions as Franklin's vessels, therefore the team looked over the illnesses and fatalities within the search crews under the assumption that the conditions suffered by those crews could mirror those of the lost expedition.

G. Due to relatively high levels of lead found in some remains of the crew, it has been suggested that lead poisoning from solder that sealed the expedition's canned provisions could explain the lost expedition. However, within the other search ships who had similar provisions, no evidence of lead poisoning was found, despite the relatively high exposure to lead that was unavoidable on ships of the era and within the overall British population. So, unless Franklin’s ships had a particular lead source, there is no substantial proof that lead poisoning had a role in the failed expedition. Across nine search crews, patterns in illnesses led researchers to conclude that Franklin's men would have suffered the same respiratory and gastrointestinal disorders, injuries and exposure, and that some fatalities might have been a result of respiratory, cardiovascular and tubercular conditions. Moreover, the team suggested that the abnormally high number of deaths of Franklin's officers was probably a result of non-medical circumstances such as accidents and injuries that happened when officers accepted the risky responsibility of hunting animals to provide food, or walking over difficult terrain in a severe climate, continuing their attempts at finding the route of a Northwest Passage.

H. It seems possible that the 2016 discovery by the Arctic Research Foundation made recently in the wreck of HMS Terror, along with a discovery two years before in 2014 of HMS Erebus by Parks Canada could finally allow access to some first-hand evidence of medical issues and other factors at play in the failed expedition. If any of the expedition's records in writing have been preserved on board, it's possible they could still be read if they were left in the right underwater conditions. If a 'sick book' has managed to survive aboard a ship, the events that led to the lost expedition may be revealed, allowing those speculating to finally get some closure on the matter.

Questions 15-21

Instructions to follow

- Do the following statements agree with the information given in the reading passage? In boxes 15-21 on your answer sheet, write

- **TRUE** if the statement agrees with the information
- **FALSE** if the statement contradicts the information
- **NOT GIVEN** if there is no information on this.

15 Franklin's lost expedition was a search party attempting to find Lady Jane Franklin

16 John Rae suspected that Franklin's lost expedition likely suffered from a food shortage aboard the ship

B 7. The leaders of the search parties commissioned by Lady Franklin returned to England after some time

C 8. It was common for people living Britain during the 19th century to be exposed to lead

19. Most of the crew aboard Franklin's lost expedition were trained to hunt wild animals

20 The most recent research from University of Glasgow suggests that some of leaders of the crew on the Franklin expedition died from lead poisoning.

21 The research into the wreck of HMS Terror may shed light on the mystery of the lost expedition.

Questions 22-26

Instructions to follow

- Complete the sentences below.
- Choose NO MORE THAN THREE WORDS from the passage for each answer.
- Write your answers in 22-26 on your answer sheet.

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The Northwest Passage is a route which connects 22 _____ by sea.

As a reward for seemingly having discovered the fate of the Franklin expedition, 23 _____ was given an amount that would equal hundreds of thousands of Canadian dollars today.

Forensic testing available in the 80's suggested that either 24 _____ or lead poisoning led to the deaths of the crew in the Franklin expedition.

The 25 _____ made by doctors aboard the ships in the Franklin expedition still have not been recovered.

Researchers have suggested that the leaders of Franklin's crew might not have been ill, but could have died from 26 _____ as a result of their behaviours.

Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40 which are based on Reading Passage 3

Owl Secrets

A. It always appeared to fly in the face of logic. But now, the biological secrets that allow owls to rotate their heads without cutting off their blood supply have finally been unravelled. Scientists have discovered four major adaptations in owls designed to prevent injury when the animals rotate their overly large heads by up to 270 degrees.

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B. The study found that the birds' unique bone structures and vascular systems let them move with increased flexibility. Scientists at John Hopkins University School of Medicine in the US studied snowy, barred and great horned owls after their deaths from natural causes. They found that the vertebral artery enters the neck higher than in other birds, creating more slack. Unlike humans, owls were found to have small vessel connections between the carotid and vertebral arteries, allowing the blood to be exchanged between the two blood vessels. This creates an uninterrupted blood flow to the brain, even if one route is blocked during extreme neck rotation.

C. The adaptation gives the birds a huge range of vision without having to move their bodies and arouse detection by prey. The lack of similar adaptations in humans could explain why humans are more vulnerable to neck injury, the experts concluded. When humans attempt sudden and violent twists of their neck they risk damaging the lining of their

blood vessels, which can result in a fatal blockage or stroke. Study senior investigator Doctor Philippe Gailloud, said: 'Until now, brain imaging specialists like me who deal with human injuries caused by trauma to arteries in the head and neck have always been puzzled as to why rapid, twisting neck movements did not leave thousands of owls lying dead on the forest floor from stroke. 'The carotid and vertebral arteries in the neck of most animals - including owls and humans - are very fragile and highly susceptible to even minor tears of the vessel lining.'

D. To solve the puzzle, the researchers studied the bone and blood vessel structures in the heads and necks of the birds. An injectable contrast dye was used to highlight the birds' blood vessels, which were then dissected, drawn and scanned to allow detailed analysis.

E. The most striking finding came after researchers injected dye into the owls' arteries, mimicking blood flow, and manually turned the animals' heads. They found that when they turned the heads, the blood vessels below the jaw bone expanded as more dye entered, creating pools of blood capable of maintaining the energy supply to the brain and eyes. They showed that the big carotid arteries, instead of being on the side of the neck as in humans, are carried close to the centre of rotation just in front of the spine. As a consequence, these arteries experience much less twisting and turning. The potential for damage is therefore greatly reduced. This contrasted starkly with human anatomical ability, where arteries generally tend to get smaller and smaller, and do not balloon out as they branch out. This creates the risk of clotting after sudden neck movements such as whiplash.

F. Researchers say these contractile blood reservoirs act as a trade-off, allowing birds to pool blood to meet the energy needs of their large brains and eyes, while they rotate their

heads. The supporting vascular network, with its many interconnections and adaptations, helps minimise any interruption in blood flow. The study results demonstrate what physical properties are needed to allow such extreme head movements, and explain why injuries sustained from treatments that involve manipulating bones with the hands such as chiropractic therapy can have such serious consequences for humans. Dr Gailloud added: 'Our new study results show precisely what morphological adaptations are needed to handle such head gyrations and why humans are so vulnerable to bone injury from chiropractic therapy. Extreme manipulations of the human head are really dangerous because we lack so many of the vessel-protecting features seen in owls.'

G. Medical illustrator Fabian de Kok-Mercado said: 'In humans, the vertebral artery really hugs the brains and eyes, while they rotate their heads. The supporting vascular network, with its many interconnections and adaptations, helps minimise any interruption in blood flow. The study results demonstrate what physical properties are needed to allow such extreme head movements, and explain why injuries sustained from treatments that involve manipulating bones with the hands such as chiropractic therapy can have such serious consequences for humans. Dr Gailloud added: 'Our new study results show precisely what morphological adaptations are needed to handle such head gyrations and why humans are hollow cavities in the neck. But this is not the case in owls, whose structures are specially adapted to allow for greater arterial flexibility and movement.' It is a powerful adaptive trait, but it is not unique. Plenty of birds have a similar ability to look behind them. Red tailed hawks for example are almost as flexible as their nocturnal cousins. 'There are lots of advantages to being able to look over your shoulder and see something coming - if you're trying to avoid predators or detect prey', he added.

Question 27-34

Instructions to follow

- Complete the summary using the list of words and phrases **A-M** below.
- Write the correct letter, A-Min boxes 27-34 on your answer sheet.
- **NB** You may use any letter more than once.

How can owls rotate their heads by 27..... 270 degrees? The many small bones that make up the neck and spine enable them to achieve 28 ..... movement. A research team has discovered that in 29..... ,their vascular network has adapted to make the rotation possible. Owls' carotid arteries are 30..... the spine, at the centre of rotation. This means the arteries endure 31..... strain when the head is turned. In addition, the vessels 32..... their heads can expand, creating reservoirs of blood to supply the brain when the head is turned. And the cavities in the neck vertebrae, through which the vessels pass, are extremely 33..... , giving the vessels space to move around when twisted. All this is necessary because their eyes can't move: owls can only look 34..... ahead.

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A flexible

B as much as

C at the base of

D in front of

E intense

F limited

G far less

A multiple

I in excess of

J to the side of

K various ways

A large

M straight

Questions 35-40

Instructions to follow

- Complete each sentence with the correct ending, **A-H** below.
- Write the correct letter, **A-H** in boxes 35-40 on your answer sheet.

35 The bone structure and circulatory system of owls has evolved in order to

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

36 Humans' arteries tend to

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

37 Scientists injected dye into the blood vessels of dead owls in order to

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

38 When humans attempt sudden twists of their neck they are more likely to

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

39 The backup arteries of owls are designed to

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

40 Owls have a huge range of vision which enables them to

A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○

A collect any excess blood created in the process of turning.

B cope with their very large heads.

C damage the lining of their blood vessels.

D decrease in size.

E make them lighter.

F mimic natural blood flow.

G Offer a fresh supply of nutrients when blood vessels get closed off.

A avoid detection by predators or to find prey.

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IELTS Reading Test 17

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-14 which are based on Reading Passage 1

Synaesthesia

A. Imagine a page with a square box in the middle. The box is lined with rows of the number 5, repeated over and over. All of the 5s are identical in size, font and colour, and equally distributed across the box. There is, however, a trick: among those 5s, hiding in plain sight is a single, capital letter S. Almost the same in shape, it is impossible to spot without straining your eyes for a good few minutes. Unless that is, you are a grapheme – colour synaesthete – a person who sees each letter and number in different colours. With all the 5s painted in one colour and the rogue S painted in another, a grapheme – colour synaesthete will usually only need a split second to identify the latter.

B. Synaesthesia, loosely translated as “senses coming together” from the Greek words syn (“with”) and aesthesis (“sensation”), is an interesting neurological phenomenon that causes different senses to be combined. This might mean that words have a particular taste (for example, the word “door” might taste like bacon), or that certain smells produce a particular colour. It might also mean that each letter and number has its own personality-the letter A might be perky, the letter B might be shy and self-conscious, etc. Some synaesthetes might even experience other people’s sensations, for example feeling pain in their chest when they witness a film character gets shot. The possibilities are

endless: even though synaesthesia is believed to affect less than 5% of the general population, at least 60 different combinations of senses have been reported so far. What all these sensory associations have in common is that they are all involuntary and impossible to repress and that they usually remain quite stable over time.

C. Synaesthesia was first documented in the early 19th century by German physician Georg Sachs, who dedicated two pages of his dissertation on his own experience with the condition. It wasn't, however, until the mid-1990s that empirical research proved its existence when Professor Simon Baron-Cohen and his colleagues used fMRIs on six synaesthetes and discovered that the parts of the brain associated with vision were active during auditory stimulation, even though the subjects were blindfolded.

D. What makes synaesthesia a particularly interesting condition is that it isn't an illness at all. If anything, synaesthetes often report feeling sorry for the rest of the population, as they don't have the opportunity to experience the world in a multisensory fashion like they do. Very few drawbacks have been described, usually minimal: for instance, some words might have an unpleasant taste (imagine the word "hello" tasting like spoilt milk), while some synaesthetes find it distressing when they encounter people with names which don't reflect their personality (imagine meeting a very interesting person named "Lee", when the letter E has a dull or hideous colour for you-or vice versa). Overall, however, synaesthesia is widely considered more of a blessing than a curse and it is often linked to intelligence and creativity, with celebrities such as Lady Gaga and Pharrell Williams claiming to have it.

E. Another fascinating side of synaesthesia is the way it could potentially benefit future generations. In a 2013 study, Dr Witthof and Dr Winawer discovered that grapheme-colour synaesthetes who had never met each other before experienced strikingly similar

pairings between graphemes and colours-pairings which were later traced back to a popular set of Fischer-Price magnets that ten out of eleven participants distinctly remembered possessing as children. This was particularly peculiar as synaesthesia is predominantly considered to be a hereditary condition, and the findings suggested that a synaesthete's environment might play a determining role in establishing synaesthetic associations. If that was true, researchers asked, then might it not be possible that synaesthesia can actually be taught?

F. As it turns out, the benefits of teaching synaesthesia would be tremendous. According to research conducted by Dr Clare Jonas at the University of East London, teaching people to create grapheme-colour associations the same way as a synaesthete may have the possibility to improve cognitive function and memory. As she put it, 'one possibility is guarding against cognitive decline in older people-using synaesthesia in the creation of mnemonics to remember things such as shopping lists.' To that end, researchers in the Netherlands have already begun developing a web browser plug-in that will change the colours of certain letters. Rothen and his colleagues corroborate the theory: in a paper published in 2011, they suggest that synaesthesia might be more than a hereditary condition, as the non-synaesthetic subjects of their study were able to mimic synaesthetic associations long after leaving the lab.

G. There is obviously still a long way to go before we can fully understand synaesthesia and what causes it. Once we do, however, it might not be too long before we find out how to teach non-synaesthetes how to imitate its symptoms in a way that induces the same benefits 4.4% of the world's population currently enjoy.

Questions 1-7

Instructions to follow

- Which paragraph contains the following information?
- Write the correct letter, A-G, in boxes 1-7 on your answer sheet.

1. Some of the disadvantages related to synaesthesia
2. what scientists think about synaesthesia's real-life usefulness
3. a prediction for the future of synaesthesia
4. an example of how grapheme-colour synaesthesia works
5. a brief history of synaesthesia
6. some of the various different types of synaesthesia.
7. information about a study that suggests synaesthetic symptoms aren't arbitrary

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Questions 8-11

Instructions to follow

- Do the following statements agree with the information given in Reading Passage 1?
- In boxes 8-11 on your answer sheet, write

- **TRUE** if the statement is true according to the passage
- **FALSE** if the statement is false according to the passage
- **NOT GIVEN** if the information is not given in the passage

8. There are 60 different types of synaesthesia.
9. Before Professor Simon Baron-Cohen's research, synaesthesia was thought to be a myth.
10. A lot of celebrities are affected by synaesthesia.

11 Most scientists believe that synaesthesia runs in families.

Questions 12-13

Instructions to follow

- Complete the summary.
- Choose ONE WORD ONLY from the passage for each answer.
- Write your answers in boxes 12-14 on your answer sheet.

Synaesthesia is a unique neurological condition that causes different senses to get mixed.

Recent research has suggested that teaching synaesthesia to non-synaesthetes can enhance 12..... and guard against the deterioration of cognitive 13.....

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Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26, which are based on Reading Passage 2 below.

The History of pencil

A. The beginning of the story of pencils started with a lightning. Graphite, the main material for producing pencil, was discovered in 1564 in Boirowdale in England when a lightning struck a local tree during a thunder. Local people found out that the black substance spotted at the root of the unlucky tree was different from burning ash of wood. It was soft, thus left marks everywhere. Chemistry was barely out of its infancy at the time, so people mistook it for lead, equally black but much heavier. It was soon put to use by locals in marking their sheep for signs of ownership and calculation.

B. Britain turns out to be the major country where mines of graphite can be detected and developed. Even so, the first pencil was invented elsewhere. As graphite is soft, it requires some form of encasement. In Italy, graphite sticks were initially wrapped in string or sheepskin for stability, becoming perhaps the very first pencil in the world. Then around 1560, an Italian couple made what are likely the first blueprints for the modem, wood-encased carpentry pencil. Their version was a flat, oval, more compact type of pencil. Their concept involved the hollowing out of a stick of juniper wood. Shortly thereafter in 1662, a superior technique was discovered by German people: two wooden halves were carved, a graphite stick inserted, and the halves then glued together – essentially the same method in use to this day. The news of usefulness of these early pencils spread far

and wide, attracting the attention of artists all over the known world.

C. Although graphite core in pencils is still referred to as lead, modem pencils do not contain lead as the "lead "of the' pencil is actually a mix of finely ground graphite and clay powders. This mixture is important because the amount of clay content added to the graphite depends on intended pencil hardness, and the amount of time spent on grinding the mixture determines the quality of the lead. The more clay you put in, the higher hardness the core has. Many pencils across the world, and almost all in Europe, are graded on the European system. This system of naming used B for black and H for hard; a pencil's grade was described by a sequence or successive Hs or Bs such as BB and BBB for successively softer leads, and HH and HHH for successively harder ones. Then the standard writing pencil is graded HB.

D. In England, pencils continued to be made from whole sawn graphite. But with the mass production of pencils, they are getting drastically more popular in many countries with each passing decade. As demands rise, appetite for graphite soars. According to the United States Geological Survey (USGS), world production of natural graphite in 2012 was 1,100,000 tonnes, of which the following major exporters are: China, India, Brazil, North Korea and Canada. When the value of graphite was realised, the mines were taken over by the government and guarded. One of its chief uses during the reign of Elizabeth I in the second half of the 16th century was as moulds for the manufacture of camion balls. Graphite was transported from Keswick to London in armed stagecoaches. In 1751 an Act of Parliament was passed making it an offence to steal or receive "wad". This crime was punishable by hard labour or transportation.

E. That the United States did not use pencils in the outer space till they spent $1000 to make a pencil to use in zero gravity conditions is in fact a fiction. It is widely known that

astronauts in Russia used grease pencils, which don't have breakage problems. But it is also a fact that their counterparts in the United States used pencils in the outer space before real zero gravity pencil was invented .They preferred mechanical pencils, which produced fine lines, much clearer than the smudgy lines left by the grease pencils that Russians favoured. But the lead tips of these mechanical pencils broke often. That bit of graphite floating around the space capsule could get into someone's eye, or even find its way into machinery or electronics short or other problems. But despite the fact that the Americans did invent zero gravity pencil later, they stuck to mechanical pencils for many years.

F. Against the backcloth of a digitalized world, the prospect of pencils seems bleak. In reality, it does not. The application of pencils has by now become so widespread that they can be seen everywhere, such as classrooms, meeting rooms and art rooms, etc. A spectrum of users are likely to continue to use it into the future: students to do math works, artists to draw on sketch pads, waiters or waitresses to mark on order boards, make-up professionals to apply to faces, and architects to produce blue prints. The possibilities seem limitless.

Questions 14-19

Instructions to follow

- Complete the sentences below.
- Choose ONE WORD ONLY from the passage for each answer.
- Write your answers in boxes 14-19 on your answer sheet

Graphite was found under a 14 _____ in Borrowdale
Ancient people used graphite to sign possession and number of 15 _____ .

The first pencil was graphite wrapped in 16_____ or animal skin.
In the eighteenth century, the 17_____ protect the mines when the value of graphite was realized.
During the reign of Elizabeth I, people was condemnable if they 18_____ or receive the "wad".
Russian astronauts preferred 19_____ pencils to write in the outer space.

Questions 20-26

Instructions to follow

- Do the following statements agree with the information given in Rending Passage 2?
- In boxes 20-26 on your answer sheet write

- **TRUE** if the statement agrees with the information
- **FALSE** if the statement contradicts the information
- **NOT GIVEN** if there is no information on this

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20 Italy is probably the first country of the whole world to make pencils.

21 Germany used various kinds of wood to make pencils.

22 Graphite makes a pencil harder and sharper.

23 Pencils are not produced any more since the reign of Elizabeth

24 Pencil was used during the first American space expedition.

25 American astronauts did not replace mechanical pencils immediately after the zero gravity pencils were invented.

26 Pencils are unlikely to be used in the future.

Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40, which are based on Reading Passage 3 below.

Stealth Forces in Weight Loss

The field of weight loss is like the ancient fable about the blind men and the elephant. Each man investigates a different part of the animal and reports back, only to discover their findings are bafflingly incompatible.

A. The various findings by public-health experts, physicians, psychologists, geneticists, molecular biologists, and nutritionists are about as similar as an elephant's tusk is to its tail. Some say obesity is largely predetermined by our genes and biology; others attribute it to an overabundance of fries, soda, and screen-sucking; still others think we're fat because of viral infection, insulin, or the metabolic conditions we encountered in the womb. "Everyone subscribes to their own little theory," says Robert Berkowitz, medical director of the Center for Weight and Eating Disorders at the University of Pennsylvania School of Medicine. We're programmed to hang onto the fat we have, and some people are predisposed to create and carry more fat than others. Diet and exercise help, but in the end the solution will inevitably be more complicated than pushing away the plate and going for a walk. "It's not as simple as 'You're fat because you're lazy' says Nikhil Dhurandhar, an associate professor at Pennington Biomedical Research Center in Baton Rouge. "Willpower is not a prerogative of thin people. It's distributed equally."

B. Science may still be years away from giving us a miracle formula for fat-loss. Hormone leptin is a crucial player in the brain's weight-management circuitry. Some people produce too little leptin; others become desensitised to it. And when obese people lose weight, their leptin levels plummet along with their metabolism. The body becomes more efficient at using fuel and conserving fat, which makes it tough to keep the weight off. Obese dieters' bodies go into a state of chronic hunger, a feeling Rudolph Leibel, an obesity researcher at Columbia University, compares to thirst. "Some people might be able to tolerate chronic thirst, but the majority couldn't stand it", says Leibel. "Is that a behavioural problem – a lack of willpower? I don't think so."

C. The government has long espoused moderate daily exercise – of the evening-walk or take-the-stairs variety – but that may not do much to budge the needle on the scale. A 150-pound person burns only 150 calories on a half-hour walk, the equivalent of two apples. It's good for the heart, less so for the gut. "Radical changes are necessary," says Deirdre Barrett, a psychologist at Havard Medical School and author of *Waistland*. "People don't lose weight by choosing the small fries or talking a little walk every other day." Barrett suggests taking a cue from the members of the Nation Weight Control Registry (NWCR), a self-selected group of more than 5,000 successful weight-losers who have shed diets an average 66 pounds and kept it off 5.5 years. Some registry members lost weight using low-carb diets; some went low-fat; other eliminated refined foods. Some did it on their own; others relied on counselling. That said, not everyone can lose 66 pounds and not everyone needs to. The goal shouldn't be getting thin, but getting healthy. It's enough to whittle your weight down to the low end of your set range, says Jeffrey Friedman, a geneticist at Rockefeller University. Losing even 10 pounds vastly decreases your risk of diabetes, heart disease, and high blood pressure. The point is to not give up just because you don't look like a swimsuit model.

D. The negotiation between your genes and the environment begins on day one. Your optimal weight, writ by genes, appears to get edited early on by conditions even before birth, inside the womb. If a woman has high blood-sugar levels while she's pregnant, her children arc more likely to be overweight or obese, according to a study of almost 10,000 mother-child pairs. Maternal diabetes may influence a child's obesity risk through a process called metabolic imprinting, says Teresa Hillier, an endocrinologist with Kaiser Permanente's Center for Health Research and the study's lead author. The implication is clear: Weight may be established very early on, and obesity largely passed from mother to child. Numerous studies in both animals and humans have shown that a mother's obesity directly increases her child's risk for weight gain. The best advice for moms-to-be: Get fit before you get pregnant. You'll reduce your risk of complications during pregnancy and increase your chances of having a normal-weight child.

E. It's the $64,000 question: Which diets work? It got people wondering: Isn't there a better way to diet? A study seemed to offer an answer. The paper compared two groups of adults: those who, after eating, secreted high levels of insulin, a hormone that sweeps blood sugar out of the bloodstream and promotes its storage as fat, and those who secreted less. Within each group, half were put on a low-fat diet and half on a low-glycemic-load diet. On average, the low-insulin-secreting group fared the same on both diets, losing nearly 10 pounds in the first six months — but they gained about half of it back by the end of the 18-month study. The high-insulin group didn't do as well on the low-fat plan, losing about 4.5 pounds, and gaining back more than half by the end. But the most successful were the high-insulin-secretors on the low-glycemic-load diet. They lost nearly 13 pounds and kept it off.

F. What if your fat is caused not by diet or genes, but by germs — say, a virus? It sounds like

a sci-fi horror movie, but research suggests some dimension of the obesity epidemic may be attributable to infection by common viruses, says Dhurandhar. The idea of "infectobesity" came to him 20 years ago when he was a young doctor treating obesity in Bombay. He discovered that a local avian virus, SMAM-1, caused chickens to die, sickened with organ damage but also, strangely, with lots of abdominal fat. In experiments, Dhurandhar found that SMAM-1 -infected chickens became obese on the same diet as uninfected ones, which stayed svelte.

G. He later moved to the U.S. and onto a bona fide human virus, adenovirus 36 (AD-36). In the lab, every species of animal Dhurandhar infected with the virus became obese — chickens got fat, mice got fat, even rhesus monkeys at the zoo that picked up the virus from the environment suddenly gained 15 percent of their body weight upon exposure. In his latest studies, Dhurandhar has isolated a gene that, when blocked from expressing itself, seems to turn off the virus's fattening power. Stem cells extracted from fat cells and then exposed to AD-36 reliably blossom into fat cells — but when stem cells are exposed to an AD-36 virus with the key gene inhibited, the stems cells don't differentiate. The gene appears to be necessary and sufficient to trigger AD-36-related obesity, and the goal is to use the research to create a sort of obesity vaccine.

Questions 27-31

Instructions to follow

- Reading Passage 3 has seven paragraphs, A-G.
- Which paragraph contains the following information?
- Write the Correct letter, A-G, in boxes 27-31 on your answer sheet.
- **NB** You may use any letter more than once

27 evaluation on the effect of weight loss on different kinds of diets

28 an example of a research which includes the relatives of the participants

29 an example of a group of people who did not regain weight immediately after weight loss

30 long-term hunger may appear to be acceptable to some of the participants during the period of losing weight program

31 a continuous experiment may lead to a practical application besides diet or hereditary resort

Questions 32-36

Instructions to follow

- Look at the following findings (Question 32-36) and the list of researchers below.
- Match each finding with the correct researcher, A-F
- Write the correct letter, A-F, in boxes 32-36 on your answer sheet.
- NB You may use any letter more than once

32 A person's weight is determined by the interaction of his/her DNA and the environment.

A ○ B ○ C ○ D ○ E ○ F ○

33 Pregnant mothers who are overweight may risk their fetus in gaining weight.

A ○ B ○ C ○ D ○ E ○ F ○

34 The aim of losing weight should be keeping healthy rather than being attractive.

A ○ B ○ C ○ D ○ E ○ F ○

35 Small changes in lifestyle will not help in reducing much weight.

A ○ B ○ C ○ D ○ E ○ F ○

36 Researchers can be divided into different groups with their own point of view about weight loss.

A ○ B ○ C ○ D ○ E ○ F ○

List of Researchers

A Robert Berkowitz.

B Rudolph Leibel.

C Nikhil Dhurandhar.

D Deirdre Barret.

E Jeffrey Friedman.

F Teresa Hillier.

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Questions 37-40

Instructions to follow

- Complete the sentences below
- Choose ONE WORD AND/OR A NUMBER from the passage for each answer.
- Write your answers in boxes 37-40 on your answer sheet.

In Bombay Clinic, a young doctor who came up with the concept 'infectobesity' believed that the obesity is caused by a kind of virus. For years, he conducted experiments on 37_____ . Finally, later as he moved to America, he identified a new virus named 38_____ which proved to be a significant breakthrough in inducing more weight. Although there seems no way to eliminate the virus till now, a kind of 39_____ can be separated as to block the effectiveness of the

virus. In the future, the doctor is aiming at developing a new 40 _____ which might effectively combat against the virus.

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IELTS Reading Test 18

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-14 which are based on Reading Passage 1

Australian culture and culture shock

A. Sometimes work, study or a sense of adventure take us out of our familiar surroundings to go and live in a different culture. The experience can be difficult, even shocking.

B. Almost everyone who studies, lives or works abroad has problems adjusting to a new culture. This response is commonly referred to as 'culture shock'. Culture shock can be defined as 'the physical and emotional discomfort a person experiences when entering a culture different from their own' (Weaver, 1993).

C. For people moving to Australia, Price (2001) has identified certain values which may give rise to culture shock. Firstly, he argues that Australians place a high value on independence and personal choice. This means that a teacher or course tutor will not tell students what to do, but will give them a number of options and suggest they work out which one is the best in their circumstances. It also means that they are expected to take action if something goes wrong and seek out resources and support for themselves.

D. Australians are also prepared to accept a range of opinions rather than believing there is one truth. This means that in an educational setting, students will be expected to form

their own opinions and defend the reasons for that point of view and the evidence for it.

E. Price also comments that Australians are uncomfortable with differences in status and hence idealise the idea of treating everyone equally. An illustration of this is that most adult Australians call each other by their first names. This concern with equality means that Australians are uncomfortable taking anything too seriously and are even ready to joke about themselves.

F. Australians believe that life should have a balance between work and leisure time. As a consequence, some students may be critical of others who they perceive as doing nothing but study.

G. Australian notions of privacy mean that areas such as financial matters, appearance and relationships are only discussed with close friends. While people may volunteer such information, they may resent someone actually asking them unless the friendship is firmly established. Even then, it is considered very impolite to ask someone what they earn. With older people, it is also rude to ask how old they are, why they are not married or why they do not have children. It is also impolite to ask people how much they have paid for something, unless there is a very good reason for asking.

H. Kohls (1996) describes culture shock as a process of change marked by four basic stages. During the first stage, the new arrival is excited to be in a new place, so this is often referred to as the "honeymoon" stage. Like a tourist, they are intrigued by all the new sights and sounds, new smells and tastes of their surroundings. They may have some problems, but usually they accept them as just part of the novelty. At this point, it is the similarities that stand out, and it seems to the newcomer that people everywhere and their way of life are very much alike. This period of euphoria may last from a couple of

weeks to a month, but the letdown is inevitable.

I. During the second stage, known as the 'rejection' stage, the newcomer starts to experience difficulties due to the differences between the new culture and the way they were accustomed to living. The initial enthusiasm turns into irritation, frustration, anger and depression, and these feelings may have the effect of people rejecting the new culture so that they notice only the things that cause them trouble, which they then complain about. In addition, they may feel homesick, bored, withdrawn and irritable during this period as well.

J. Fortunately, most people gradually learn to adapt to the new culture and move on to the third stage, known as 'adjustment and reorientation'. During this stage a transition occurs to a new optimistic attitude. As the newcomer begins to understand more of the new culture, they are able to interpret some of the subtle cultural clues which passed by unnoticed earlier. Now things make more sense and the culture seems more familiar. As a result, they begin to develop problem-solving skills, and feelings of disorientation and anxiety no longer affect them.

K. In Kohls's model, in the fourth stage, newcomers undergo a process of adaptation. They have settled into the new culture, and this results in a feeling of direction and self-confidence. They have accepted the new food, drinks, habits and customs and may even find them selves enjoying some of the very customs that bothered them so much previously. In addition, they realise that the new culture has good and bad things to offer and that no way is really better than another, just different.

Questions 1-6

Instructions to follow

- Do the following statements agree with the information given in the reading passage? Write
- **TRUE** if the statement agrees with the information
- **FALSE** if the statement contradicts the information
- **NOT GIVEN** if there is no information on this.

1. Australian teachers will suggest alternatives to students rather than offer one solution.
2. In Australia, teachers will show interest in students' personal circumstances.
3. Australians use people's first names so that everyone feels their status is similar.
4. Students who study all the time may receive positive comments from their colleagues.
5. It is acceptable to discuss financial issues with people you do not know well.
6. Younger Australians tend to be friendlier than older Australians.

Questions 7-13

THE STAGES OF CULTURE SHOCK

Instructions to follow

- Complete the Sentences.
- Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

	Name	Newcomers' reaction to problems
Stage 1	7 _____	They notice the 8 _____between different nationalities and cultures. They may experience this stage for up to 9 ___
Stage 2	Rejection	They reject the new culture and lose the 10 ___ they had at the beginning.
Stage 3	Adjustment and reorientation	They can understand some 11 _____ which they had not reviously observed. They learn 12 _____ for dealing with difficulties.
Stage 4	13 _____	They enjoy some of the customs that annoyed them before.

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Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26, which are based on Reading Passage 2 below.

Hunting Perfume in Madagascar

A. Ever since the *unguentari* plied their trade in ancient Rome, perfumers have to keep abreast of changing fashions. These days they have several thousand ingredients to choose from when creating new scents, but there is always demand for new combinations. The bigger the "palette7 of smells, the better the perfumer's chance of creating something fresh and appealing. Even with everyday products such as shampoo and soap, kitchen cleaners and washing powders, consumers are becoming increasingly fussy. And many of today's fragrances have to survive tougher treatment than ever before, resisting the destructive power of bleach or a high temperature wash cycle. Chemists can create new smells from synthetic molecules, and a growing number of the odours on the perfumer's palette are artificial. But nature has been in the business far longer.

B. The island of Madagascar is an evolutionary hot spot; 85% of its plants are unique, making it an ideal source for novel fragrances. Last October, Quest International, a company that develops fragrances for everything from the most delicate perfumes to cleaning products, sent an expedition to Madagascar in pursuit of some of nature's most novel fragrances. With some simple technology, borrowed from the pollution monitoring industry, and a fair amount of ingenuity, the perfume hunters bagged 20 promising new aromas in the Madagascan rainforest. Each day the team set out from their "hotel"—a wooden hut lit

by kerosene lamps, and trailed up and down paths and animal tracks, exploring the thick vegetation up to 10 meters on either side of the trail. Some smells came from obvious places, often big showy flowers within easy reach- Others were harder to pin down. “Often it was the very small flowers that were much more interesting, says Clery. After the luxuriance of the rainforest, the little-known island of Nosy Hara was a stark, dry place geologically and biologically very different from the mainland, “Apart from two beaches, the rest of the Island Is impenetrable, except by hacking through the bush, says Clery. One of the biggest prizes here was a sweet- smelling sap weeping from the gnarled branches of some ancient shrubby trees in the parched Interior. So far no one has been able to identify the plant.

C. With most flowers or fruits, the hunters used a technique originally designed to trap and identify air pollutants. The technique itself is relatively simple. A glass bell jar or flask Ỉ S fitted over the flower. The fragrance molecules are trapped in this “headspace” and can be extracted by pumping the air out over a series of filters which absorb different types of volatile molecules. Back home in the laboratory, the molecules are flushed out of the filters and injected into a gas chromatograph for analysis. If it Is Impossible to attach the headspace gear, hunters fix an absorbent probe close to the source of the smell. The probe looks something like a hypodermic syringe, except that the ‘needle’ is made of silicone rubber which soaks up molecules from the air. After a few hours, the hunters retract the rubber needle and seal the tube, keeping the odour molecules inside until they can.be injected into the gas chromatograph in the laboratory.

D. Some of the most promising fragrances were those given, off by resins that oozed from the bark of trees. Resins are the source of many traditional perfumes, including frankincense and myrrh. The most exciting resin came from a Calophyllum tree, which produces a strongly scented medicinal oil. The sap of this Calophyllum smelt rich and

aromatic, a little like church incense. But It also smelt of something the fragrance industry has learnt to live without castoreum a substance extracted from the musk glands of beavers and once a key ingredient in many perfumes. The company does not use animal products any longer, but Ã was wonderful to find a tree with an animal smell.

E. The group also set out from the island to capture the smell of coral reefs. Odors that conjure up sun kissed seas are highly sought after by the perfume industry. “From the ocean, the only thing we have is seaweed, and that has a dark and heavy aroma. We hope to find something unique among the corals,” says Dir. The challenge for the hunters was to extract a smell from water rather than air. This was an opportunity to try Clery’s new “aquaspace” apparatus a set of filters that work underwater. On Nosy Hara, jars were fixed over knobs of coral about 2 meters down and water pumped out over the absorbent filters. So what does coral smell like? “It’s a bit like lobster and crab,” says Clery. The team’s task now is to recreate the best of then captured smells. First they must identify the molecules that make up each fragrance. Some ingredients may be quite common chemicals. But some may be completely novel, or they may be too complex or expensive to make in the lab. The challenge then is to conjure up the fragrances with more readily available materials. “We can avoid the need to import plants from the rainforest by creating the smell with a different set of chemicals from those in the original material,” says Clery. “If we get it right, you can sniff the sample and it will transport you straight back to the moment you smelt it in the rainforest.”

Questions 14-19

The reading passage has seven paragraphs A-E

Instructions to follow

- Which paragraphs contain the following details: Write the correct number, A-E, in boxes 14-18 on your answer sheet.
- **NB** You may use any letter more than once.

14 One currently preferred spot to pick up plants for novel finding

15 A new task seems to be promising yet producing limited finding in fragrance source

16 The demanding conditions for fragrance to endure.

17 A substitute for substance no longer available to the perfume manufacture

18 Description of an outdoor expedition on land chasing new fragrances.

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Questions 19-23

Instructions to follow

- Do the following statements agree with the information given in Reading Passage 2? In boxes 19-23 on your answer sheet, write
  TRUE if the statement is true
  FALSE if the statement is false
  NOT GIVEN if the information is not given in the passage 2

19 Manufacturers can choose to use synthetic odours for the perfume nowadays.

20 Madagascar is chosen to be a place for hunting plants which are rare in other parts of the world.

21 Capturing the smell is one of the most important things for creating new aromas.

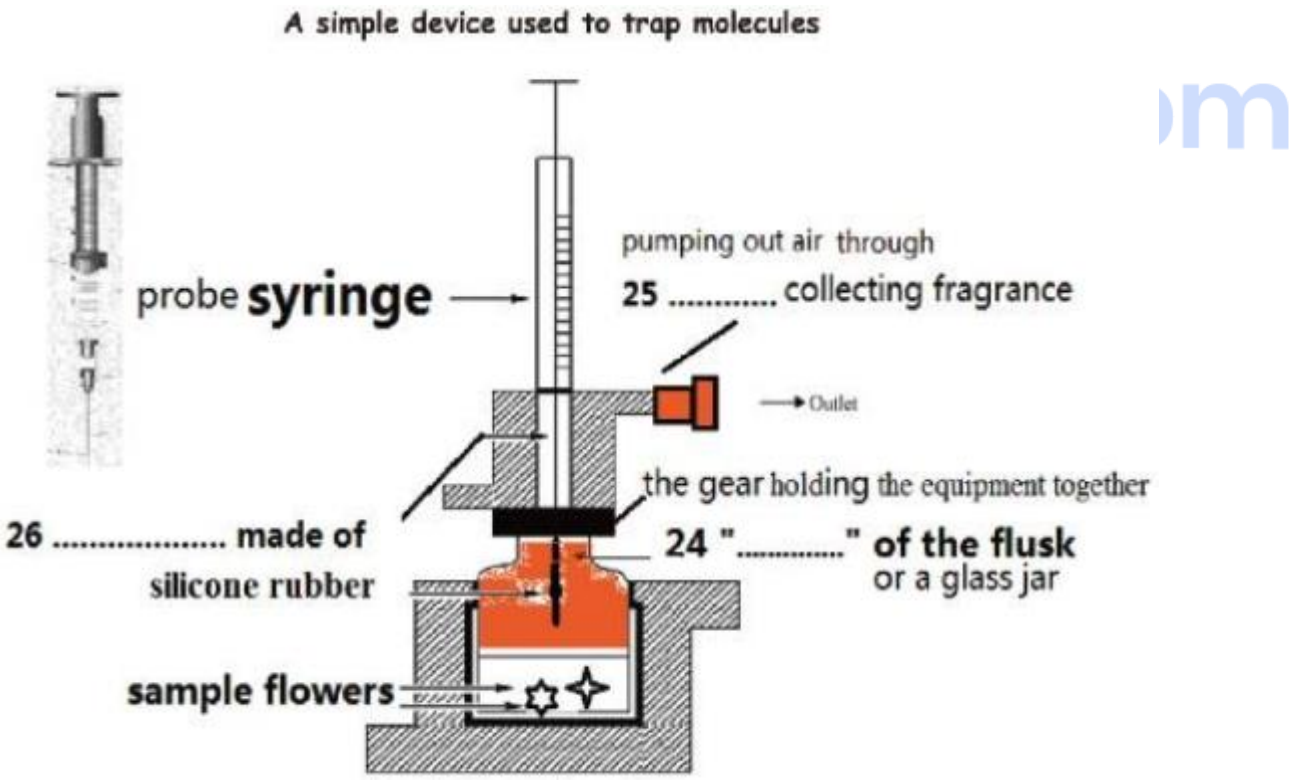
22 The technique the hunters used to trap fragrance molecules is totally out of their ingenuity.

23 Most customers prefer the perfume made of substance extracted from the musk I glands of animals.

Questions 24-26

Instructions to follow

- Filling the blanks and answering the questions below with only one word.



Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40, which are based on Reading Passage 3 below.

Sleep

Why We Sleep?

As the field of sleep research is still relatively new, scientists have yet to determine exactly why people sleep. However, they do know that humans must sleep and, in fact, people can survive longer without food than without sleep. And people are not alone in this need. All mammals, reptiles and birds sleep.

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Scientists have proposed the following theories on why humans require sleep:

- Sleep may be a way of recharging the brain. The brain has a chance to shut down and repair neurons and to exercise important neuronal connections that might otherwise deteriorate due to lack of activity.
- Sleep gives the brain an opportunity to reorganise data to help find a solution to problems, process newly-learned information and organise and archive memories.
- Sleep lowers a person's metabolic rate and energy consumption.
- The cardiovascular system also gets a break during sleep. Researchers have found that people with normal or high blood pressure experience a 20 to 30% reduction in blood pressure and 10 to 20% reduction in heart rate.
- During sleep, the body has a chance to replace chemicals and repair muscles, other tissues and aging or dead cells.

- In children and teenagers, growth hormones are released during deep sleep.

When a person falls asleep and wakes up is largely determined by his or her circadian rhythm, a day-night cycle of about 24 hours. Circadian rhythms greatly influence the timing, amount and quality of sleep.

For many small mammals such as rodents, sleep has other particular benefits, as it provides the only real opportunity for physical rest, and confines the animal to the thermal insulation of a nest. In these respects, sleep conserves much energy in such mammals, particularly as sleep can also develop into a torpor, whereby the metabolic rate drops significantly for a few hours during the sleep period. On the other hand, humans can usually rest and relax quite adequately during wakefulness, and there is only a modest further energy saving to be gained by sleeping. We do not enter torpor, and the fall in metabolic rate for a human adult sleeping compared to lying resting but awake is only about 5-10%.

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A sizeable portion of the workforce is shift workers who work and sleep against their bodies' natural sleep-wake cycle. While a person's circadian rhythm cannot be ignored or reprogrammed, the cycle can be altered by the timing of things such as naps, exercise, bedtime, travel to a different time zone and exposure to light. The more stable and consistent the cycle is, the better the person sleeps. Disruption of circadian rhythms has even been found to cause mania in people with bipolar disorder.

The 'seven deadly sins' formulated by the medieval monks included Sloth. The Bible in Proverbs 6:9 includes the line: 'How long will you sleep, O sluggard? When will you arise out of your sleep?' But a more nuanced understanding of sloth sees it as a disinclination to labour or work. This isn't the same as the desire for healthy sleep. On the contrary, a person can't do work without rest periods and no one can operate at top performance without adequate sleep. The puritan work

ethic can be adhered to and respect still paid to the sleep needs of healthy humans. It is wrong to see sleep as a shameful activity.

Usually, sleepers pass through five stages: 1, 2, 3, 4 and REM (rapid eye movement) sleep. These stages progress cyclically from 1 through REM then begin again. A complete sleep cycle takes an average of 90 to 110 minutes. The first sleep cycles each night have relatively short REM sleeps and long periods of deep sleep but later in the night, REM periods lengthen and deep sleep time decreases. Stage 1 is light sleep where you drift in and out of sleep and can be awakened easily. In this stage, the eyes move slowly and muscle activity slows. During this stage, many people experience sudden muscle contractions preceded by a sensation of falling. In stage 2, eye movement stops and brain waves become slower with only an occasional burst of rapid brain waves. When a person enters stage 3, extremely slow brain waves called delta waves are interspersed with smaller, faster waves. In stage 4, the brain produces delta waves almost exclusively. Stages 3 and 4 are referred to as deep sleep, and it is very difficult to wake someone from them. In deep sleep, there is no eye movement or muscle activity. This is when some children experience bedwetting, sleepwalking or night terrors.

In the REM period, breathing becomes more rapid, irregular and shallow, eyes jerk rapidly and limb muscles are temporarily paralysed. Brain waves during this stage increase to levels experienced when a person is awake. Also, heart rate increases, blood pressure rises and the body loses some of the ability to regulate its temperature. This is the time when most dreams occur, and, if awoken during REM sleep, a person can remember their dreams. Most people experience three to five intervals of REM sleep each night. Infants spend almost 50% of their time in REM sleep. Adults spend nearly half of sleep time in stage 2, about 20% in REM and the other 30% is divided between the other three stages. Older adults spend progressively less time in REM sleep.

As sleep research is still a relatively young field, scientists did not discover REM sleep until 1953, when new machines were developed to monitor brain activity. Before this discovery, it was believed that most brain activities ceased during sleep. Since then, scientists have also disproved the idea that deprivation of REM sleep can lead to insanity and have found that lack of REM sleep can alleviate clinical depression although they do not know why. Recent theories link REM sleep to learning and memory.

Questions 27-30

Instructions to follow

- Choose the correct letter, A, B, C or D.

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27 Among other functions, sleep serves to

A help the adult body develop physically.

B push daily problems from our minds.

C accelerate the learning process significantly.

D re-energise parts of the brain.

28 'Torpor' can be described as

A a very deep sleep.

B a long state of hibernation.

C the sleep all non-human mammals experience.

D A light sleep

29 Unlike small mammals, humans

A ○ don't sleep to conserve energy.

B ○ don't sleep properly.

C ○ save only a small amount of energy by sleeping.

D ○ Show no decrease in their metabolic rate when they sleep.

30 In stage 3 deep sleep

A ○ the eyes move slowly and there's little muscle activity.

B ○ there is an alternation of delta waves and small fast waves.

C ○ there is an occasional burst of rapid brain waves.

D ○ there are no small fast waves.

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Questions 31-35

Instructions to follow

- Complete the flow-chart below.
- Write **NO MORE THAN THREE WORDS** for each answer

The Stages of Sleep

The individual drifts in and out of consciousness and can be woken up easily as they are only in a 31 ..... Eye movement is slow and there is reduced muscle activity.

↓

The speed of 32 ..... activity slows and all movement of the eyes tends to stop.

↓

Brain activity is dominated by delta waves, with a scattering of 33 ..... also in evidence.

↓

In a state of 34 ....., the brain emits delta waves almost exclusively. It is hard to wake

the individual.

↓

A period of rapid eye movement follows, during which 35..... patterns are not consistent and limb muscles enter a temporary state of paralysis.

Questions 36-40

Instructions to follow

- Complete the summary.
- Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

Sleep is so essential to a person that he can actually go longer without food than without sleep. During sleep, the brain has the chance to close down and do some repair work on neuronal connections which could otherwise 36..... in a state of inactivity. Sleep also gives the brain the opportunity to organise data, especially newly-learned information.

During this rest period, the 37..... Drops and energy consumption goes down. At the same time, the cardiovascular system has a much-needed rest. While they go into a deep sleep, humans don't fall into 38....., unlike some small animals such as rodents. A 39..... of 24 hours is described as a person's 40....., and this greatly influences a person's amount of sleep, and the type of sleep he gets.

IELTS Reading Test 19

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-13 which are based on Reading Passage 1

Pollution in the Bay

A. Pouring water into the sea sounds harmless enough. But in Florida Bay, a large and shallow section of the Gulf of Mexico that lies between the southern end of the Everglades and the Florida Keys, it is proving highly controversial. That is because researchers are divided over whether it will help or hinder the plants and animals that live in the bay.

B. What is at risk is the future of the bay's extensive beds of seagrasses. These grow on the bay's muddy floor and act as nurseries for the larvae of shrimps, lobsters and fish – many of the important sport and commercial-fishing species. Also in danger is an impressive range of coral reefs that run the length of the Florida Keys and form the third-largest barrier reef in the world. Since the 1980s, coral cover has dropped by 40%, and a third of the coral species have gone. This has had a damaging effect on the animals that depend on the reef, such as crabs, turtles and nearly 600 species of fish.

C. What is causing such ecological change is a matter of much debate. And the answer is of no small consequence. This is because the American government is planning to devote $8 billion over the next 30 years to revitalise the Everglades. Seasonal freshwater flows into

the Everglades are to be restored in order to improve the region's health. But they will then run off into the bay.

D. Joseph Zieman, a marine ecologist at the University of Virginia, thinks this is a good idea. He believes that a lack of fresh water in the bay is its main problem. The blame, he says, lies with a century of drainage in the Everglades aimed at turning the marshes into farmland and areas for development. This has caused the flow of fresh water into Florida Bay to dwindle, making the water in the bay, overall, more saline. This, he argues, kills the seagrasses, and as these rots, nutrients are released that feed the microscopic plants and animals that live in the water. This, he says, is why the bay's once crystal-clear waters often resemble pea soup. And in a vicious circle, these turbid blooms block out sunlight, causing more seagrasses to die and yet more turbidity.

E. Brian Lapointe, a marine scientist at the Harbour Branch Oceanographic Institution at Fort Pierce in Florida, disagrees. He thinks seagrasses can tolerate much higher levels of salinity than the bay actually displays. Furthermore, he notes that when freshwater flows through the Everglades were increased experimentally in the 1990s, it led to massive plankton blooms. Freshwater running off from well-fertilised farmlands, he says, caused a fivefold rise in nitrogen levels in the bay. This was like pouring fuel on a fire. The result was mass mortality of seagrasses because of increased turbidity from the plankton. Dr Lapointe adds that, because corals thrive only in waters where nutrient levels are low, restoring freshwater rich in nitrogen will do more damage to the reef.

F. It is a plausible theory. The water flowing off crops that are grown on the750,000 acres of heavily fertilised farmland on the northern edge of the Everglades is rich in nitrogen, half of which ends up in the bay. But Bill Kruczynski, of America's Environmental Protection Agency, is convinced that nitrogen from farmlands is not the chief problem.

Some coral reefs well away from any nitrogen pollution are dying and, curiously, a few are thriving. Dr Kruczynski thinks that increased nutrients arriving from local sewage discharges from the thousands of cesspits along the Florida Keys are part of the problem.

G. Such claims and counterclaims make the impact of the restoration plan difficult to predict. If increased salinity is the main problem, the bay's ecology will benefit from the Everglades restoration project. If, however, nitrogen is the problem, increasing the flow of freshwater could mate matters much worse.

H. If this second hypothesis proves correct, the cure is to remove nitrogen from farmland or sewage discharges, or perhaps both. Neither will be easy. Man-made wetlands, at present, being built to reduce phosphate runoff into the bay—also from fertilisers—would need an algal culture (a sort of contained algal bloom) added to them to deal with discharges from farmlands. That would be costly. So too would be the replacement of cesspits with proper sewerage—one estimate puts the cost at $650m. Either way, it is clear that when, on December 1st, 3,000 square miles of sea around the reef are designated as a "protective zone" by the deputy secretary of commerce, Sam Bodman, this will do nothing to protect the reef from pollution.

I. Some argue, though, that there is a more fundamental flaw in the plans for the bay: the very idea of returning it to a Utopian ideal before man wrought his damage. Nobody knows what Florida Bay was like before the 1950s when engineers cut the largest canals in the Everglades and took most of the water away. Dr Kruczynski suspects it was more like an estuary. The bay that many people wish to re-create could have been nothing more than a changing phase in the bay's history.

J. These arguments do not merely threaten to create ecological problems but economic

ones as well. The economy of the Florida Keys depends on tourism—the local tourist industry has an annual turnover of $2.5 billion. People come for fishing-boat trips, for manatee watching, or for scuba diving and snorkeling to view the exotically coloured corals. If the plan to restore the Everglades makes problems in the bay and the reef worse, it could prove a very expensive mistake.

Questions 1-4

Instructions to follow

- The reading Passage has seven paragraphs **A-J**.
- Which paragraph contains the following information?
- Write the correct letter **A-J**, in boxes **1-4** on your answer sheet.

1. See grass turned to be more resistant to the saline water level in the Bay.
2. Significance of finding a specific reason in controversy
3. Expensive proposals raised to solve the nitrogen dilemma
4. A statistic of ecological changes in both the coral area and species

Questions 5-8

Instructions to follow

- Use the information in the passage to match the people (listed **A-C**) with opinions or deeds below.
- Write the appropriate letters **A-C** in boxes **5-8** on your answer sheet.

A Bill Kruczynski

B Brian Lapointe

C Joseph Zieman

5 Drainage system in everglades actually results in high salty water in the bay.

A B C

6 Restoring water high in nitrogen level will make more ecological side effect

A B C

7 High nitrogen levels may be caused by the nearby farmland.

A B C

8 Released sewage rather than nutrients from agricultural area increase the level of Nitrogen.

A B C

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Questions 9-13

Instructions to follow

- Do the following statements agree with the information given in Reading Passage 2
- In boxes **9-13** on your answer sheet, write

- **TRUE** if the statement is true
- **FALSE** if the statement is false
- **NOT GIVEN** if the information is not given in the passage.

9 Everyone agrees with “pouring water into the sea is harmless enough” even in the Florida Bay area.

10 Nitrogen was poured in from different types of crops as water flows through.

11 Everglade restoration project can be effective regardless of the cause of the pollution.

12 Human has changed Florida Bay where old image before 1950s is unrecalled.

13 Tourism contributes fundamentally to the Florida Bay area.

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Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-27 which are based on Reading Passage 2 below.

Is Graffiti Art or Crime?

A. The term graffiti derives from the Italian *graffito* meaning 'scratching' and can be defined as uninvited marking or writing scratched or applied to objects, built structures and natural features. It is not a new phenomenon: examples can be found on ancient structures around the world, in some cases predating the Greeks and Romans. In such circumstances it has acquired invaluable historical and archaeological significance, providing a social history of life and events at that time. Graffiti is now a problem that has become pervasive, as a result of the availability of cheap and quick means of mark-making.

B. It is usually considered a priority to remove graffiti as quickly as possible after it appears. This is for several reasons. The first is to prevent 'copy-cat' emulation which can occur rapidly once a clean surface is defaced. It may also be of a racist or otherwise offensive nature and many companies and councils have a policy of removing this type of graffiti within an hour or two of it being reported. Also, as paints, glues and inks dry out over time they can become increasingly difficult to remove and are usually best dealt with as soon as possible after the incident. Graffiti can also lead to move serious forms of vandalism and, ultimately, the deterioration of an area, contributing to social decline.

C. Although graffiti may be regarded as an eyesore, any proposal to remove it from sensitive historic surfaces should be carefully considered: techniques designed for more robust or utilitarian surfaces may result in considerable damage. In the event of graffiti incidents, it is important that the owners of buildings or other structures and their consultants are aware of the approach they should take in dealing with the problem. The police should be informed as there may be other related attacks occurring locally. An incidence pattern can identify possible culprits, as can stylised signatures or nicknames, known as 'tags', which may already be familiar to local police. Photographs are useful to record graffiti incident and may assist the police in bringing a prosecution. Such images are also required for insurance claims and can be helpful in cleaning operatives, allowing them to see the problem area before arriving on site.

D. There are a variety of methods that are used to remove graffiti. Broadly these divide between chemical and mechanical systems. Chemical preparations are based on dissolving the media; these solvents can range from water to potentially hazardous chemical 'cocktails'. Mechanical systems such as wire-brushing and grit-blasting attempt to abrade or chip the media from the surface. Care should be taken to comply with health and safety legislation with regard to the protection of both passers-by and any person carrying out the cleaning. Operatives should follow product guidelines in terms of application and removal, and wear the appropriate protective equipment. Measures must be taken to ensure that run-off, aerial mists, drips and splashes do not threaten unprotected members of the public. When examining a graffiti incident it is important to assess the ability of the substrate to withstand the prescribed treatment. If there is any doubt regarding this, then small trial areas should be undertaken to assess the impact of more extensive treatment.

E. A variety of preventive strategies can be adopted to combat a recurring problem of graffiti

at a given site. As no two sites are the same, no one set of protection measures will be suitable for all situations. Each site must be looked at individually. Surveillance systems such as closed-circuit television may also help. In cities and towns around the country, prominently placed cameras have been shown to reduce anti-social behavior of all types including graffiti. Security patrols will also act as a deterrent to prevent recurring attacks. However, the cost of this may be too high for most situations. A physical barrier such as a wall, railings, doors or gates can be introduced to discourage unauthorized access to a vulnerable site. However, consideration has to be given to the impact measures have on the structure being protected. In the worst cases, they can be almost as damaging to the quality of the environment as the graffiti they prevent. In others, they might simply provide a new surface for graffiti.

F. One of the most significant problems associated with graffiti removal is the need to remove it from surfaces that are repeatedly attacked. Under these circumstances, the repeated removal of graffiti using even the most gentle methods will ultimately cause damage to the surface material. There may be situations where the preventive strategies mentioned above do not work or are not a viable proposition at a given site. Anti-graffiti coatings are usually applied by brush or spray leaving a thin veneer that essentially serves to isolate the graffiti from the surface.

G. Removal of graffiti from a surface that has been treated in this way is much easier, usually using low-pressure water which reduces the possibility of damage. Depending on the type of barrier selected it may be necessary to reapply the coating after each graffiti removal exercise.

Questions 14-19

Instructions to follow

- Reading passage 2 has seven paragraphs, **A-G**.
- Which paragraph contains the following information?
- Write the correct letter, **A-G**, in boxes **14-19** on your answer sheet.
- **NB** You may use any letter more than once.

14 why chemically cleaning graffiti may cause damage

15 the benefit of a precautionary strategy on the gentle removal

16 the damaging and accumulative impact of graffiti on the community

17 the need for different preventive measures being taken to cope with graffiti

18 a legal proposal made to the owner of building against graffiti

19 the reasons for removing graffiti as soon as possible.

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Questions 20-21

Instructions to follow

- Choose TWO letters, **A-E**
- Write your answers in boxes **20-21** on your answer sheet.

Which two statements are true concerning the removal of graffiti?

A Cocktail removal can be safer than water treatment

B Small patch trial before applying large scale of removing

C Chemical treatments are the most expensive way of removing

D There are risks for both Chemical and medication method

E Mechanical removals are much more applicable than Chemical treatments

Questions 22-23

Instructions to follow

- Choose **TWO** letters, **A-E**.
- Write your answers in boxes **22-23** on your answer sheet.

Which **TWO** of the following preventive measures against graffiti are mentioned effectively in the passage?

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A Organise more anti-graffiti movement in the city communities

B increase the police patrols on the street

C Build a new building with material repelling to water

D installing more visible security cameras

E Provide a whole new surface with a chemical coat

Questions 24-27

Instructions to follow

- Complete the Summary of the paragraphs of Reading Passage 2.
- Use **NO MORE THAN TWO WORDS** from the passage for each answer.
- Write your answers in boxes **24-27** on your answer sheet.

Ancient graffiti is of significance and records the 24..... of details life for that period.

The police can recognize newly committed incidents of graffiti by the signature which is called 25..... that they are familiar with

Operatives ought to comply with relevant rules during the operation, and put on the suitable 26.....

Removal of graffiti from a new type of coating surface can be much convenient of using 27.....

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Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 28-40, which are based on Reading Passage 3 below.

The Story Of Coffee

A. Coffee was first discovered in Eastern Africa in an area we know today as Ethiopia. A popular legend refers to a goat herder by the name of Kaldi, who observed his goats acting unusually friskily after eating berries from a bush. Curious about this phenomenon, Kaldi tried eating the berries himself. He found that these berries gave him renewed energy.

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B. The news of this energy laden fruit quickly moved throughout the region. Coffee berries were transported from Ethiopia to the Arabian Peninsula, and were first cultivated in what today is the country of Yemen. Coffee remained a secret in Arabia before spreading to Turkey and then to the European continent by means of Venetian trade merchants.

C. Coffee was first eaten as a food though later people in Arabia would make a drink out of boiling the beans for its narcotic effects and medicinal value. Coffee for a time was known as Arabian wine to Muslims who were banned from alcohol by Islam. It was not until after coffee had been eaten as a food product, a wine and a medicine that it was discovered, probably by complete accident in Turkey, that by roasting the beans a delicious drink could be made. The roasted beans were first crushed and then boiled in water, creating a crude version of the beverage we enjoy today. The first coffee houses were opened in Europe in the 17th Century and in 1675, the Viennese established the habit of refining

the brew by filtering out the grounds, sweetening it, and adding a dash of milk.

D. If you were to explore the planet for coffee, you would find about 60 species of coffee plants growing wild in Africa, Malaysia, and other regions. But only about ten of them are actually cultivated. Of these ten, two species are responsible for almost all the coffee produced in the world: Coffea Arabica and Coffea Canephora (usually known as Robusta). Because of ecological differences existing among the various coffee producing countries, both types have undergone many mutations and now exist in many sub-species.

E. Although wild plants can reach 10 - 12 metres in height, the plantation one reaches a height of around four metres. This makes the harvest and flowering easier, and cultivation more economical. The flowers are white and sweet-scented like the Spanish jasmine. Flowers give way to a red, darkish berry. At first sight, the fruit is like a big cherry both in size and in colour. The berry is coated with a thin, red film (epicarp) containing a white, sugary mucilaginous flesh (mesocarp). Inside the pulp there are the seeds in the form of two beans coupled at their flat surface. Beans are in turn coated with a kind of resistant, golden yellow parchment, (called endocarp). When peeled, the real bean appears with another very thin silvery film. The bean is bluish green verging on bronze, and is at the most 11 millimetres long and 8 millimetres wide.

F. Coffee plants need special conditions to give a satisfactory crop. The climate needs to be hot-wet or hot temperate, between the Tropic of Cancer and the Tropic of Capricorn, with frequent rains and temperatures varying from 15 to 25 Degrees C. The soil should be deep, hard, permeable, well irrigated, with well-drained subsoil. The best lands are the hilly ones or from just-tilled woods. The perfect altitude is between 600 and 1200 metres, though some varieties thrive at 2000-2200 metres. Cultivation aimed at protecting the plants at every stage of growth is needed. Sowing should be in sheltered nurseries from

which, after about six months, the seedlings should be moved to plantations in the rainy season where they are usually alternated with other plants to shield them from wind and excessive sunlight. Only when the plant is five years old can it be counted upon to give a regular yield. This is between 400 grams and two kilos of arabica beans for each plant, and 600 grams and two kilos for robusta beans.

G. Harvesting time depends on the geographic situation and it can vary greatly therefore according to the various producing countries. First, the ripe beans are picked from the branches. Pickers can selectively pick approximately 250 to 300 pounds of coffee cherry a day. At the end of the day, the pickers bring their heavy burlap bags to pulping mills where the cherry coffee can be pulped (or wet milled). The pulped beans then rest, covered in pure rainwater to ferment overnight. The next day the wet beans are hand-distributed upon the drying floor to be sun dried. This drying process takes from one to two weeks depending on the amount of sunny days available. To make sure they dry evenly, the beans need to be raked many times during this drying time. Two weeks later the sun dried beans, now called parchment, are scooped up, bagged and taken to be milled. Huge milling machines then remove the parchment and silver skin, which renders a green bean suitable for roasting. The green beans are roasted according to the customers' specifications and, after cooling, the beans are then packaged and mailed to customers.

Questions 28 – 33

Instructions to follow

- The reading passage on The Story of Coffee has **7** paragraphs **A – G**.
- From the list of headings below choose the most suitable headings for paragraphs **B – G**.
- Write the appropriate number (**i – xi**) in boxes **28 – 33** on your answer sheet.
- **NB** There are more headings than paragraphs, so you will not use them all.

i. Growing Coffee
ii. Problems with Manufacture
iii. Processing the Bean
iv. First Contact
v. Arabian Coffee
vi. Coffee Varieties
vii. Modern Coffee
viii. The Spread of Coffee
ix. Consuming Coffee
x. Climates for Coffee
xi. The Coffee Plant

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Example	Answer
Paragraph A	Iv

28 Paragraph B

29 Paragraph C

30 Paragraph D

31 Paragraph E

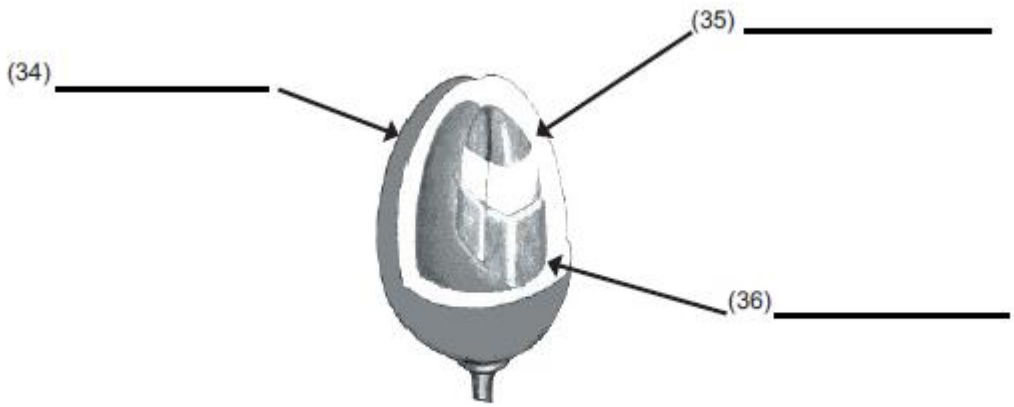
32 Paragraph F

33 Paragraph G

Questions 34 – 36

Instructions to follow

- Complete the labels on the diagram of a coffee bean below.
- Choose your answers from the text and write them in boxes **34 - 36** on your answer sheet.



Questions 37 – 40

Instructions to follow

- Using the information in the passage, complete the flow chart below.
- Write your answers in boxes **37 – 40** on your answer sheet.
- Use **NO MORE THAN THREE WORDS** from the passage for each answer.

The Coffee Production Process

The coffee **(eg)**_____ is picked by hand and delivered to mills. Answer: **cherry**

The coffee cherry is pulped or (37)_____

The pulp beans are left (38)_____ to ferment in pure water.

The wet beans are sun dried for one or 2 weeks to make parchment – they are (39)_____ often to ensure an even drying procedure.

The parchment is then bagged and taken to be milled to make the green beans.

The green beans are then roasted to (40)_____

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The roasted beans are then cooled.

The finished product is packaged and mailed to the customer.

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IELTS Reading Test 20

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-14 which are based on Reading Passage 1

Keep a Watchful Eye on the Bridges

A. Most road and rail bridges are only inspected visually, if at all. Every few months, engineers have to clamber over the structure in an attempt to find problems before the bridge shows obvious signs of damage. Technologies developed at Los Alamos National Laboratory, New Mexico, and Texas A&M University may replace these surveys with microwave sensors that constantly monitor the condition of bridges.

B. "The device uses microwaves to measure the distance between the sensor and the bridge, much like radar does," says Albert Migliori, a Los Alamos physicist "Any load on the bridge – such as traffic induces displacements, which change that distance as the bridge moves up and down." By monitoring these movements over several minutes, the researchers can find out how the bridge resonates. Changes in its behaviour can give an early warning of damage.

C. The Interstate 40 bridge over the Rio Grande river in Albuquerque provided the researchers with a rare opportunity to test their ideas. Chuck Farrar, an engineer at Los Alamos, explains: "The New Mexico authorities decided to raze this bridge and replace it.

We were able to mount instruments on it, test it under various load conditions and even inflict damage just before it was demolished." In the 1960s and 1970s, 2500 similar bridges were built in the US. They have two steel girders supporting the load in each section. Highway experts know that this design is "fracture critical" because a failure in either girder would cause the bridge to fail.

D. After setting up the microwave dish on the ground below the bridge, the Los Alamos team installed conventional accelerometers at several points along the span to measure its motion. They then tested the bridge while traffic roared across it and while subjecting it to pounding from a "shaker", which delivered precise punches to a specific point on the road.

E. "We then created damage that we hoped would simulate fatigue cracks that can occur in steel girders," says Farrar. They first cut a slot about 60 centimetres long in the middle of one girder. They then extended the cut until it reached the bottom of the girder and finally they cut across the flange – the bottom of the girder's "I" shape.

F. The initial, crude analysis of the bridge's behaviour, based on the frequency at which the bridge resonates, did not indicate that anything was wrong until the flange was damaged. But later the data were reanalysed with algorithms that took into account changes in the mode shapes of the structure – shapes that the structure takes on when excited at a particular frequency. These more sophisticated algorithms, which were developed by Norris Stubbs at Texas A&M University, successfully identified and located the damage caused by the initial cut.

G. "When any structure vibrates, the energy is distributed throughout with some points not moving, while others vibrate strongly at various frequencies," says Stubbs. "My

algorithms use pattern recognition to detect changes in the distribution of this energy." NASA already uses Stubbs' method to check the behaviour of the body flap that slows space shuttles down after they land.

H. A commercial system based on the Los Alamos hardware is now available, complete with the Stubbs algorithms, from the Quatro Corporation in Albuquerque for about $100,000. Tim Darling, another Los Alamos physicist working on the microwave interferometer with Migliori, says that as the electronics become cheaper, a microwave inspection system will eventually be applied to most large bridges in the US. "In a decade I would like to see a battery or solar-powered package mounted under each bridge, scanning it every day to detect changes," he says.

Questions 1-4

Instructions to follow

- Choose the correct answer A, B, C or D and write your answer next to 1-4 on your answer sheet.

1 How did the traditional way to prevent damage to the bridges before the invention of the new monitoring system?

A ○ Bridges have to be tested in every movement on two points.

B ○ Bridges have to be closely monitored by microwave devices.

C ○ Bridges have already been monitored by sensors.

D ○ Bridges have to be frequently inspected by professional workers with naked eyes.

2 How does the new microwave monitors find out the problems of bridges?

A by changeling the distance between the positions of devices

B by controlling the traffic flow on the bridges

C by monitoring the distance caused by traffic between two points

D by displacement of the several critical parts in the bridges

3 Why did the expert believe there is a problem for the design called “fracture critical”?

A Engineers failed to apply the newly developed construction materials.

B There was not enough finance to repair the bridges.

C The supporting parts of the bridges may crack and cause the bridge to fail.

D There were bigger traffic load conditions than the designers had anticipated.

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4 The defect was not recognized by a basic method in the beginning?

A until the mid of faces of bridges has fractured.

B until the damage appears along and down to the flanges.

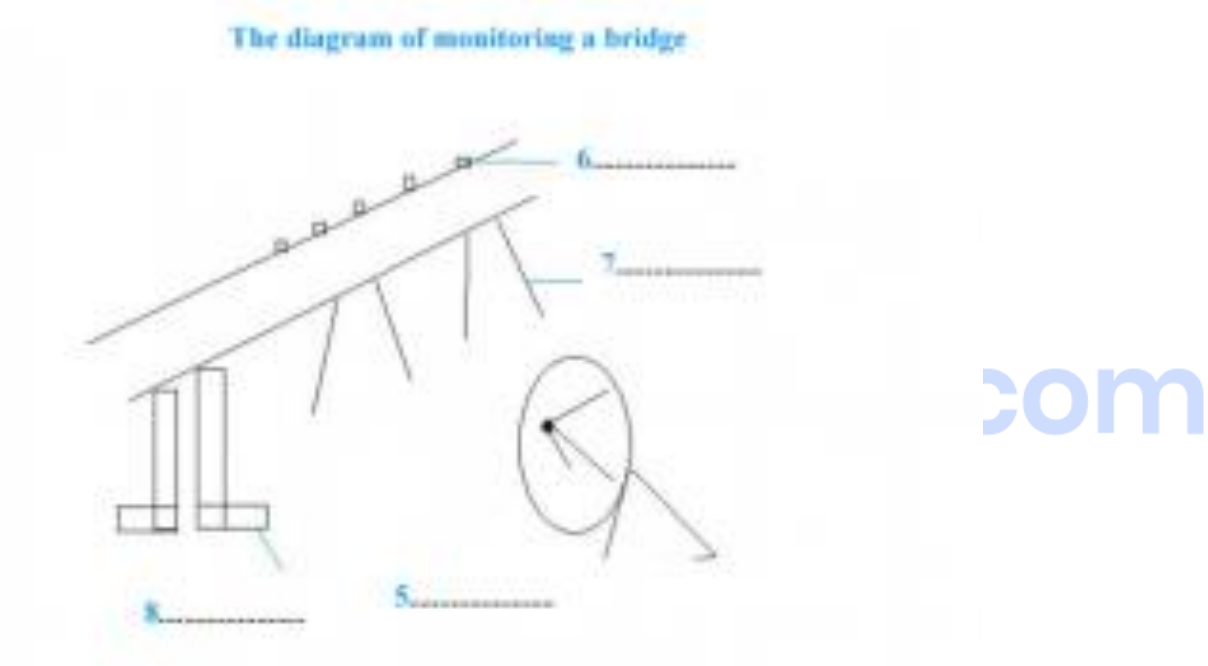
C until the points on the road have been punched.

D until the frequency of resonates appears disordered.

Questions 5-8

Instructions to follow

- Filling the blanks in the diagram labels.
- Write the correct answer in the blank space next to 5-8 on your answer sheet



Questions 9-13

Instructions to follow

- The reading passage has eight paragraphs, A-H.
- Which paragraph contains the following information?
- Write the correct letter, A-H, in boxes on your answer sheet.

9 how is the pressure that they have many a great chance to test bridges. _____

10 A ten-year positive change for microwave device. _____

11 the chance they get an honourable contract. _____

12 explanation of the mechanism for the new microwave monitoring to work. _____

13 how is the damage deliberately created by the researchers. _____

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Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26 which are based on Reading Passage 2 below.

Coral Reefs

Coral reefs are underwater structures made from calcium carbonate secreted by corals. Coral reefs are colonies of tiny living animals found in marine waters that contain few nutrients. Most coral reefs are built from stony corals, which in turn consist of polyps that cluster in groups.

A. Coral reefs are estimated to cover 284,300 km2 just under 0.1% of the oceans‘ surface area, about half the area of France. The Indo-Pacific region accounts for 91.9% of this total area. Southeast Asia accounts for 32.3% of that figure, while the Pacific including Australia accounts for 40.8%. Atlantic and Caribbean coral reefs account for 7.6%. Yet often called —rainforests of the sea‖, coral reefs form some of the most diverse ecosystems on Earth. They provide a home for 25% of all marine species, including fish, mollusks worms, crustaceans, echinoderms, sponges, tunicates and other cnidarians. Paradoxically, coral reefs flourish even though they are surrounded by ocean waters that provide few nutrients. They are most commonly found at shallow depths in tropical waters, but deep water and cold water corals also exist on smaller scales in other areas. Although corals exist both in temperate and tropical waters, shallow-water reefs form only in a zone extending from 30°N to 30°S of the equator. Deepwater coral can exist at greater depths and colder temperatures at much higher latitudes, as far north as Norway. Coral reefs are rare along the American and African west coasts. This is due primarily to upwelling and

strong cold coastal currents that reduce water temperatures in these areas (respectively the Peru, Benguela and Canary streams). Corals are seldom found along the coastline of South Asia from the eastern tip of India (Madras) to the Bangladesh and Myanmar borders. They are also rare along the coast around northeastern South America and Bangladesh due to the freshwater released from the Amazon and Ganges Rivers, respectively.

B. Coral reefs deliver ecosystem services to tourism, fisheries and coastline protection. The global economic value of coral reefs has been estimated at as much as $US375 billion per year. Coral reefs protect shorelines by absorbing wave energy, and many small islands would not exist without their reef to protect them.

C. The value of reefs in biodiverse regions can be even higher. In parts of Indonesia and the Caribbean where tourism is the main use, reefs are estimated to be worth US$1 million per square kilometer, based on the cost of maintaining sandy beaches and the value of attracting snorkelers and scuba divers. Meanwhile, a recent study of the Great Barrier Reef in Australia found that the reef is worth more to the country as an intact ecosystem than an extractive reserve for fishing. Each year more than 1.8 million tourists visit the reef, spending an estimated AU$4.3 billion (Australian dollars) on reef-related industries from diving to boat rental to posh island resort stays. In the Caribbean, says UNEP, the net annual benefits from diver tourism were US$2 billion in 2000 with US$625 million spent directly on diving on reefs. Further, reef tourism is an important source of employment, especially for some of the world's poorest people. UNEP says that of the estimated 30 million small-scale fishers in the developing world, most are dependent to a greater or lesser extent on coral reefs. In the Philippines, for example, more than one million small-scale fishers depend directly on coral reefs for their livelihoods. The report estimates that reef fisheries were worth between $15,000 and $150,000 per square

kilometer a year, while fish caught for aquariums were worth $500 a kilogram against $6 for fish caught as food. The aquarium fish export industry supports around 50,000 people and generates some US$5.5 million a year in Sri Lanka along.

D. Unfortunately, coral reefs are dying around the world. In particular, coral mining, agricultural and urban runoff, pollution (organic and inorganic), disease, and the digging of canals and access into islands and bays are localized threats to coral ecosystems. Broader threats are sea temperature rise, sea-level rise and pH changes from ocean acidification, all associated with greenhouse gas emissions. Some current fishing practices are destructive and unsustainable. These include cyanide fishing, overfishing and blast fishing. Although cyanide fishing supplies live reef fish for the tropical aquarium market, most fish caught using this method are sold in restaurants, primarily in Asia, where live fish are prized for their freshness. To catch fish with cyanide, fishers dive down to the reef and squirt cyanide in coral crevices and on the fast-moving fish, to stun the fish making them easy to catch. Overfishing is another leading cause for coral reef degradation. Often, too many fish are taken from one reef to sustain a population in that area. Poor fishing practices, such as banging on the reef with sticks (muro-ami), destroy coral formations that normally function as fish habitat. In some instances, people fish with explosives (blast fishing), which blast apart the surrounding coral.

E. Tourist resorts that empty their sewage directly into the water surrounding coral reefs contribute to coral reef degradation. Wastes kept in poorly maintained septic tanks can also leak into surrounding groundwater, eventually seeping out to the reefs. Careless boating, diving, snorkeling and fishing can also damage coral reefs. Whenever people grab, kick, and walk on, or stir up sediment in the reefs, they contribute to coral reef destruction. Corals are also harmed or killed when people drop anchors on them or when people collect coral.

F. To find answers for these problems, scientists and researchers study the various factors that impact reefs. The list includes the ocean's role as a carbon dioxide sink, atmospheric changes, ultraviolet light, ocean acidification, viruses, impacts of dust storms carrying agents to far-flung reefs, pollutants, algal blooms and others. Reefs are threatened well beyond coastal areas. General estimates show approximately 10% of the worlds coral reefs are dead. About 60% of the world's reefs are at risk due to destructive, human-related activities. The threat to the health of reefs is particularly strong in Southeast Asia, where 80% of reefs are endangered.

G. In Australia, the Great Barrier Reef is protected by the Great Barrier Reef Marine Park Authority and is the subject of much legislation, including a biodiversity action plan. Inhabitants of Ahus Island, Manus Province, Papua New Guinea, have followed a generations-old practice of restricting fishing in six areas of their reef lagoon. Their cultural traditions allow line fishing, but not net or spearfishing. The result is both the biomass and individual fish sizes are significantly larger in these areas than in places where fishing is unrestricted.

Questions 14-19

Instructions to follow

- The reading Passage has seven paragraphs A-G.
- Which paragraph contains the following information?
- Write the correct letter A-G, in boxes 14-19 on your answer sheet.

- **NB** You may use any letter more than once

14 Geographical Location of the world's coral reef

15 How does coral reef benefit economy locally

16 The statistics of coral reef‘s economic significance

17 The listed reasons for the declining number of coral reef

18 Physical approach to the coral reef by people

19 Unsustainable fishing methods are applied in regions of the world

Questions 20-25

Instructions to follow

- Do the following statements agree with the information given in Reading Passage 2?
- Write your answers in boxes 20-25 on your answer sheet.

- **TRUE** if the statement is true
- **FALSE** if the statement is false
- **NOT GIVEN** if the information is not given in the passage

20 Coral reefs provide habitat to a variety of marine life.

21 Coral reef distributes around the ocean disproportionally.

22 Coral reef is increasingly important for scientific purpose.

23 Coral reefs are greatly exchanged among and exported to other counties.

24 Reef tourism is of economic essence generally for some poor people.

25 As with other fishing business, coral fishery is not suitable to women and children

Question 26

Instructions to follow

- Choose the correct letter, **A, B, C or D.**
- Write your answers in boxes **26** on your answer sheet.

26 What is the main purpose of this passage?

A Demonstrate how coral reef growth in the ocean

B To tell that coral reef is widely used as a scientific project

C Present the general benefits and an alarming situation of coral reef

D To show the vital efforts made to protect the coral reef in Australia

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Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40, which are based on Reading Passage 3 below.

The Future of Fish

A. The face of the ocean has changed completely since the first commercial fishers cast their nets and hooks over a thousand years ago. Fisheries intensified over the centuries, but even by the nineteenth century it was still felt, justifiably, that the plentiful resources of the sea were for the most part beyond the reach of fishing, and so there was little need to restrict fishing or create protected areas. The twentieth century heralded an escalation in fishing intensity that is unprecedented in the history of the oceans, and modern fishing technologies leave fish no place to hide. Today, the only refuges from fishing are those we deliberately create. Unhappily, the sea trails far behind the land in terms of the area and the quality of protection given. For centuries, as fishing and commerce have expanded, we have held onto the notion that the sea is different from the land. We still view it as a place where people and nations should be free to come and go at will, as well as somewhere that should be free for us to exploit. Perhaps this is why we have been so reluctant to protect the sea. On land, protected areas have proliferated as human populations have grown. Here, compared to the sea, we have made greater headway in our struggle to maintain the richness and variety of wildlife and landscape. Twelve percent of the world's land is now contained in protected areas, whereas the corresponding figure for the sea is but three-fifths of one percent. Worse still, most marine protected areas allow some fishing to continue. Areas off-limits to all exploitation

cover something like one five-thousandth of the total area of the world's seas.

B. Today, we are belatedly coming to realise that 'natural refuges' from fishing have played a critical role in sustaining fisheries, and maintaining healthy and diverse marine ecosystems. This does not mean that marine reserves can rebuild fisheries on their own - other management measures are also required for that. However, places that are off-limits to fishing constitute the last and most important part of our package of reform for fisheries management. They underpin and enhance all our other efforts. There are limits to protection though.

C. Reserves cannot bring back what has died out. We can never resurrect globally extinct species, and restoring locally extinct animals may require reintroductions from elsewhere, if natural dispersal from remaining populations is insufficient. We are also seeing, in cases such as northern cod in Canada, that fishing can shift marine ecosystems into different states, where different mixes of species prevail. In many cases, these species are less desirable, since the prime fishing targets have gone or are much reduced in numbers, and changes may be difficult to reverse, even with a complete moratorium on fishing. The Mediterranean sailed by Ulysses, the legendary king of ancient Greece, supported abundant monk seals, loggerhead turtles and porpoises. Their disappearance through hunting and overfishing has totally restructured food webs, and recovery is likely to be much harder to achieve than their destruction was. This means that the sooner we act to protect marine life, the more certain will be our success.

D. To some people, creating marine reserves is an admission of failure. According to their logic, reserves should not be necessary if we have done our work properly in managing the uses we make of the sea. Many fisheries managers are still wedded to the idea that one day their models will work, and politicians will listen to their advice. Just give the

approach time, and success will be theirs. How much time have we got? This approach has been tried and refined for the last 50 years. There have been few successes which to feather the managers' caps, but a growing litany of failure. The Common Fisheries Policy, the European Union's instrument for the management of fisheries and aquaculture, exemplifies the worst pitfalls: flawed models, flawed advice, watered-down recommendations from government bureaucrats and then the disregard of much of this advice by politicians. When it all went wrong, as it inevitably had to, Europe sent its boats to other countries in order to obtain fish for far less than they were actually worth. We are squandering the wealth of oceans. If we don't break out of this cycle of failure, humanity will lose a key source of protein, and much more besides. Disrupting natural ecosystem processes, such as water purification, nutrient cycling, and carbon storage, could have ramifications for human life itself. We can go a long way to avoiding this catastrophic mistake with simple common sense management. Marine reserves lie at the heart of the reform. But they will not be sufficient if they are implemented only here and there to shore up the crumbling edifice of the 'rational fisheries management' envisioned by scientists in the 1940s and 1950s. They have to be placed centre stage as a fundamental underpinning for everything we do in the oceans. Reserves are a first resort, not a final resort when all else fails.

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Questions 27-31

Instructions to follow

- Do the following statements agree with the views of the writer in Reading Passage 3? Write
- **YES** if the statement agrees with the claims of the writer
- **NO** if the statement contradicts the claims of the writer
- **NOT GIVEN** if it is impossible to say what the writer thinks about this

27 It is more than a thousand years since people started to catch fish for commercial use.

28 In general, open access to the oceans is still regarded as desirable.

29 Sea fishing is now completely banned in the majority of protected areas.

30 People should be encouraged to reduce the amount of fish they eat.

31 The re-introduction of certain mammals to the Mediterranean is a straightforward task.

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Questions 32-34

Instructions to follow

- Choose the correct letter, **A, B, C** or **D** and write them in boxes 32,33,34 on your answer sheet

32 What does the writer mean with the question, 'How much time have we got?' in the fifth paragraph?

A Fisheries policies are currently based on uncertain estimates.

B Accurate predictions will allow governments to plan properly.

C Fisheries managers should provide clearer information.

D Action to protect fish stocks is urgently needed.

33 What is the writer's comment on the Common Fisheries Policy?

A Measures that it advocated were hastily implemented.

B Officials exaggerated some of its recommendations.

C It was based on predictions which were inaccurate.

D The policy makers acquired a good reputation.

34 What is the writer's conclusion concerning the decline of marine resources?

A The means of avoiding the worst outcomes needs to be prioritised.

B Measures already taken to avoid a crisis are probably sufficient.

C The situation is now so severe that there is no likely solution.

D It is no longer clear which measures would be most effective.

Questions 35-40

Instructions to follow

- Complete the summary using the list of words/phrases, **A-J**, below.

Measures to protect the oceans

Up till the twentieth century the world's supply of fish was sufficient for its needs.
It was unnecessary to introduce 35_____ of any kind, because large areas of the oceans were inaccessible.
However, as 36_____improved, this situation changed, and in the middle of the twentieth century, policies were introduced to regulate 37_____
These policies have not succeeded. Today, by comparison with 38_____ the oceans have very little legal protection.
Despite the doubts that many officials have about the concept of 39_____ , these should be at the heart of any action taken.
The consequences of further 40_____ are very serious, and may even affect our continuing existence.

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A action

B controls

C failure

D fish catches

E fish processing

F fishing techniques

G large boats

A marine reserves

I the land

J the past

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IELTS Reading Test 21

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-13 which are based on Reading Passage 1

How to Spot a liar

A. However much we may abhor it, deception comes naturally to all living things. Birds do it by feigning injury to lead hungry predators away from nesting young. Spider crabs do it by disguise: adorning themselves with strips of kelp and other debris, they pretend to be something they are not – and so escape their enemies. Nature amply rewards successful deceivers by allowing them to survive long enough to mate and reproduce. So it may come as no surprise to learn that human beings- who, according to psychologist Gerald Johnson of the University of South California, or lied to about 200 times a day, roughly one untruth every 5 minutes- often deceive for exactly the same reasons: to save their own skins or to get something they can't get by other means.

B. But knowing how to catch deceit can be just as important a survival skill as knowing how to tell a lie and get away with it. A person able to spot falsehood quickly is unlikely to be swindled by an unscrupulous business associate or hoodwinked by a devious spouse. Luckily, nature provides more than enough clues to trap dissemblers in their own tangled webs- if you know where to look. By closely observing facial expressions, body language and tone of voice, practically anyone can recognise the tell-tale signs of lying. Researchers are even programming computers – like those used on Lie Detector -to get at the truth by

analysing the same physical cues available to the naked eye and ear. “With the proper training, many people can learn to reliably detect lies,” says Paul Ekman, professor of psychology at the University of California, San Francisco, who has spent the past 15 years studying the secret art of deception.

C. In order to know what kind of Lies work best, successful liars need to accurately assess other people’s emotional states. Ackman’s research shows that this same emotional intelligence is essential for good lie detectors, too. The emotional state to watch out for is stress, the conflict most liars feel between the truth and what they actually say and do.

D. Even high-tech lie detectors don’t detect lies as such; they merely detect the physical cues of emotions, which may or may not correspond to what the person being tested is saying. Polygraphs, for instance, measure respiration, heart rate and skin conductivity, which tend to increase when people are nervous – as they usually are when lying.

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E. Nervous people typically perspire, and the salts contained in perspiration conducts electricity. That’s why sudden leap in skin conductivity indicates nervousness -about getting caught, perhaps -which makes, in turn, suggest that someone is being economical with the truth. On the other hand, it might also mean that the lights in the television Studio are too hot- which is one reason polygraph tests are inadmissible in court. “Good lie detectors don’t rely on a single thing” says Ekma ,but interpret clusters of verbal and non-verbal clues that suggest someone might be lying.”

F. The clues are written all over the face. Because the musculature of the face is directly connected to the areas of the brain that processes emotion, the countenance can be a window to the soul. Neurological studies even suggest that genuine emotions travel different pathways through the brain than insincere ones. If a patient paralyzed by stroke

on one side of the face, for example, is asked to smile deliberately, only the mobile side of the mouth is raised. But tell that same person a funny joke, and the patient breaks into a full and spontaneous smile. Very few people -most notably, actors and politicians- are able to consciously control all of their facial expressions. Lies can often be caught when the liars true feelings briefly leak through the mask of deception. We don't think before we feel, Ekman says. "Expressions tend to show up on the face before we're even conscious of experiencing an emotion."

G. One of the most difficult facial expressions to fake- or conceal, if it's genuinely felt - is sadness. When someone is truly sad, the forehead wrinkles with grief and the inner corners of the eyebrows are pulled up. Fewer than 15% of the people Ekman tested were able to produce this eyebrow movement voluntarily. By contrast, the lowering of the eyebrows associated with an angry scowl can be replicated at will but almost everybody. " If someone claims they are sad and the inner corners of their eyebrows don't go up, Ekmam says, the sadness is probably false."

H. The smile, on the other hand, is one of the easiest facial expressions to counterfeit. It takes just two muscles -the zygomaticus major muscles that extend from the cheekbones to the corners of the lips- to produce a grin. But there's a catch. A genuine smile affects not only the corners of the lips but also the orbicularis oculi, the muscle around the eye that produces the distinctive "crow's feet" associated with people who laugh a lot. A counterfeit grin can be unmasked if the corners of the lips go up, the eyes crinkle, but the inner corners of the eyebrows are not lowered, a movement controlled by the orbicularis oculi that is difficult to fake. The absence of lowered eyebrows is one reason why the smile looks so strained and stiff.

Questions 1-5

Instructions to follow

- Do the following statements agree with the claims of the writer in Reading Passage?
- In boxes **1-5** on your answer sheet, write

- **YES** if the statement agrees with the information
- **NO** if the statement contradicts the information
- **NOT GIVEN** if there is no information on this

1. All living animals can lie.
2. Some people tell lies for self-preservation.
3. Scientists have used computers to analyze which part of the brain is responsible for telling lies.
4. Lying as a survival skill is more important than detecting a lie.
5. To be a good liar, one has to understand other people's emotions.

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Questions 6-9

Instructions to follow

- Choose the correct letter **A, B, C** or **D**.
- Write your answers in boxes **6-9**.

6. How does the lie detector work?

A ○ It detects whether one's emotional state is stable.

B ○ It detects one’s brain activity level.

C ○ It detects body behavior during one's verbal response.

D ○ It analyses one's verbal response word by word.

7 Lie detectors can't be used as evidence in a court of law because

A Lights often cause lie detectors to malfunction.

B They are based on too many verbal and non-verbal clues.

C Polygraph tests are often inaccurate.

D There may be many causes of certain body behavior.

8 Why does the author mention the paralyzed patients?

A To demonstrate how a paralyzed patient smiles

B To show the relation between true emotions and body behavior

C To examine how they were paralyzed

D To show the importance of happiness from recovery

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9 The author uses politicians to exemplify that they can

A Have emotions.

B Imitate actors.

C Detect other people's lives.

D Mask their true feelings.

Questions 10-13

Instructions to follow

- Write correct letters **A, B, or C** in boxes 10-13
- Classify the following facial traits are referring to

A Sadness

B Anger

C Happiness

10 ABC Inner corners of eyebrows raised

A B C

11 ABC The whole eyebrows lowered

A B C

12 ABC Lines formed around

A B C

13 ABC Lines form above eyebrows

A B C

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Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26, which are based on Reading Passage 2 below

The Study of Chimpanzee Culture

A. After studying the similarities between chimpanzees and humans for years, researchers have recognised these resemblances run much deeper than anyone first thought in the latest decade. For instance, the nut cracking observed in the Tai Forest is not a simple chimpanzee behaviour, but a separate adaptation found only in that particular part of Africa, as well as a trait which is considered to be an expression of chimpanzee culture by biologists. These researchers frequently quote the word 'culture' to describe elementary animal behaviours, like the regional dialects of different species of songbirds, but it turns out that the rich and varied cultural traditions chimpanzees enjoyed rank secondly in complexity only to human traditions.

B. During the past two years, the major research group which studies chimpanzees collaborated unprecedentedly and documented some distinct cultural patterns, ranging from animals' use of tools to their forms of communication and social customs. This emerging picture of chimpanzees affects how human beings ponder upon these amazing creatures. Also, it alters our conception of human uniqueness and shows us the extraordinary ability of our ancient ancestors to create cultures.

C. Although we know that Homo sapiens and Pan Troglodytes have coexisted for hundreds of millennia and their genetic similarities surpass 98 per cent, we still knew next to

nothing about chimpanzee behaviour in the wild until 40 years ago. All this began to change in the 1960s when Toshisada Nishida of Kyoto University in Japan and renowned British primatologist Jane Goodall launched their studies of wild chimpanzees at two field sites in Tanzania. (Goodall's research station at Gombe—the first of its kind—is more famous, but Nishida's site at Mahale is the second oldest chimpanzee research site in the world.)

D. During these primary studies, as the chimpanzees became more and more accustomed to close observation, the remarkable discoveries emerged. Researchers witnessed a variety of unexpected behaviours, ranging from fashioning and using tools, hunting, meat eating, food sharing to lethal fights between members of neighbouring communities.

E. In 1973, 13 forms of tool use and 8 social activities which appeared to differ between the Gombe chimpanzees and chimpanzee species elsewhere were recorded by Goodall. She speculated that some variations shared what she referred to as a 'cultural origin'. But what exactly did Goodall mean by 'culture'? According to the Oxford Encyclopedic English Dictionary, culture is defined as 'the customs. . .and achievements of a particular time or people.' The diversity of human cultures extends from technological variations to marriage rituals, from culinary habits to myths and legends. Of course, animals do not have myths and legends, but they do share the capacity to pass on behavioural traits from one generation to another, not through their genes but via learning. From biologists' view, this is the fundamental criterion for a cultural trait—something can be learnt by observing the established skills of others and then passed on to following generations.

F. What are the implications for chimpanzees themselves? We must place a high value upon the tragic loss of chimpanzees, who are decimated just when finally we are coming to appreciate these astonishing animals more completely. The population of chimpanzees

has plummeted and continued to fall due to illegal trapping, logging and, most recently, the bushmeat trade within the past century. The latter is particularly alarming because logging has driven roadways, which are now used to ship wild animal meat—including chimpanzee meat to consumers as far afield as Europe, into forests. Such destruction threatens not only the animals themselves but also a host of fascinatingly different ape cultures.

G. However, the cultural richness of the ape may contribute to its salvation. For example, the conservation efforts have already altered the attitudes of some local people. After several organisations showed videotapes illustrating the cognitive prowess of chimpanzees, one Zairian viewer was heard to exclaim, 'Ah, this ape is so like me, I can no longer eat him.'

H. How did an international team of chimpanzee experts perform the most comprehensive survey of the animals ever attempted? Although scientists have been delving into chimpanzee culture for several decades, sometimes their studies contained a fatal defect. So far, most attempts to document cultural diversity among chimpanzees have solely relied upon officially published accounts of the behaviours reported at each research site. But this approach probably neglects a good deal of cultural variation for three reasons.

I. First, scientists normally don't publish an extensive list of all the activities they do not see at a particular location. Yet this is the very information we need to know—which behaviours were and were not observed at each site. Second, there are many reports describing chimpanzee behaviours without expressing how common they are; without this information, we can't determine whether a particular action was a transient phenomenon or a routine event that should be considered part of its culture. Finally, researchers' description of potentially significant chimpanzee behaviours often lacks

sufficient detail, which makes it difficult for scientists from other spots to report the presence or absence of the activities.

J. To tackle these problems, my colleague and I determined to take a new approach. We asked field researchers at each site to list all the behaviours which they suspected were local traditions. With this information, we assembled a comprehensive list of 65 candidates for cultural behaviours.

K. Then we distributed our list to team leaders at each site. They consulted with their colleagues and classified each behaviour regarding its occurrence or absence in the chimpanzee community. The major brackets contained customary behaviour (occurs in most or all of the able-bodied members of at least one age or sex class, such as all adult males), habitual (less common than customary but occurs repeatedly in several individuals), present (observed at the site but not habitual), absent (never seen), and unknown.

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Questions 14-18

Instructions to follow

- Reading Passage 2 has eleven paragraphs, A-K.
- Which paragraph contains the following information?
- Write the correct letter, A-K, in boxes 14-18 on your answer sheet.

14 an approach to research on chimpanzees culture that is only based on official sources

15 mention of a new system designed by two scientists who aim to solve the problem

16 reasons why previous research on ape culture is problematic

17 new classification of data observed or collected

18 an example showing that the tragic outcome of animals leads to an indication of a change in local people's attitude in the preservation

Questions 19-23

Instructions to follow

- Do the following statements agree with the information given in Reading Passage 2?
- In boxes 19-23 on your answer sheet, write

- **TRUE** if the statement is true
- **FALSE** if the statement is false
- **NOT GIVEN** if the information is not given in the passage

D The research found that scientists can make chimpanzees possess the same complex culture as human beings.

20 Humans and apes lived together long time ago and shared most of their genetic substance.

21 Even Toshisada Nishida and Jane Goodall's beginning studies observed many surprising features of civilised behaviours among chimpanzees.

22 Chimpanzees, like humans, have the ability to deliver cultural behaviours mostly from genetic inheritance.

23 For decades, researchers have investigated chimpanzees by data obtained from both unobserved and observed approaches.

Questions 24-27

Instructions to follow

- Answer the questions below.
- Choose NO MORE THAN TWO WORDS AND/OR A NUMBER from the passage for each answer.
- Write your answers in boxes **24-27** on your answer sheet.

When did the unexpected discoveries of chimpanzee behaviour start?

24 .....

Which country is the researching site of Toshisada Nishida and Jane Goodall?

25 .....

26 .....

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What term can be used to depict that Jane Goodall found the chimpanzees in different regions used the different tools in 1973?

27 .....

Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40, which are based on Reading Passage 3 below.

Section A

Shoes—we wear them nearly every day. We walk, run, jump, climb, and stand in them for hours on end. Yet we hardly think about them because they are such an ordinary part of our daily lives. Shoes were not always an important part of people's wardrobes. The ancient Greeks, Egyptians, and Persians made and wore sandals, but actually went barefoot most of the time. These people lived in regions where the weather was temperate, and shoes were not needed to keep their feet warm. Archaeologists have found shoes in the ruins of these civilizations, but they seem to have been worn mainly by royalty, who could afford to employ tailors and shoemakers.

Section B

As shoes became more common in ancient Egypt, the first ones were simple sandals created mainly to protect the soles of the feet from rough surfaces. The easiest way to make shoes in these ancient times was to use materials that were readily available, including tree bark, leaves, and grasses. In ancient Egypt, sandals were made of rushes, which are grassy plants with hollow stalks. Rushes are the same plants used today to make chair bottoms, mats, and baskets.

Among the ancient Greeks, sandals were woven of similar plant materials, but the Greeks also varied the process by tying small pieces of wood together with dried grass. In later years, they

made sandals with leather from the hides of animals. The first Greek shoes were purely functional, but over time most were dyed and decorated to make fashion statements. Women began to wear soft, enclosed leather shoes, and these grew increasingly fancy in the later years of the Greek civilization.

The Romans wore sandals much like the Greeks did, but used more pieces of leather to make them. Some Roman sandals had straps that wrapped around the ankles. Shoemakers often dyed these sandals in bright colors that represented the different jobs held by the people wearing them. The patricians, or privileged classes, wore red sandals with moon-shaped ornaments on the back. Senators wore brown shoes with four black leather straps wound around the lower leg. Consuls, or legal officers, wore white shoes, and soldiers wore heavy leather sandals that were more like boots—but with bare toes!

Meanwhile, people who lived in cold northern climates were making their shoes from the hides of furry animals, such as polar bears and yaks. The soles and tops of these shoes were made from pieces of soft leather sewn together. This type of shoe—whether or not it used fur—was called a moccasin. Some Native American groups made and wore moccasins for thousands of years. Some moccasins were plain, and others were adorned with beadwork.

Section C

As the centuries passed, the primary material for shoes continued to be leather, and the process of making shoes did not change quickly. A wood and metal framework called a “last” was wrapped with pieces of leather that were then sewn together. As late as the mid-1800s, lasts were straight on both sides; this meant that there was no difference in shape between left and right shoes. It also meant that shoes were uncomfortable and that breaking them in was not easy. The lasts were made in different sizes, but for a long time only two widths were available—thin

and stout.

For centuries, shoes were sewn by hand, just as they had been by the ancient Egyptians. Machines to assist shoemakers were not used until the rolling machine was invented in 1845. This device was used to pound pieces of leather into thin strips. About the same time, Elias Howe invented the sewing machine, and pieces of shoe leather could now be sewn together more quickly. Another inventor, Lyman Reed Blake, created a machine for sewing the soles of shoes to the upper parts. Because shoes could be made faster and more cheaply, people who had never owned shoes before could now afford to buy and wear them.

Section D

In Europe and North America during the seventeenth century, most people wore boots because they were practical. Even in many large cities, dirt roads were common, and people had to walk along muddy pathways and across streams. By the eighteenth century, however, more city streets were paved with cobblestones, and it was easier to keep shoes clean. Shoes became more decorative, and fancy buckles of gold and silver were often used. Most shoes worn in the United States throughout the nineteenth century were patterned after European styles.

The major change in shoes over the last century has been the use of materials other than leather. Humphrey O'Sullivan invented the first rubber heel for shoes in 1898. Rubber heels were popular because they lasted much longer than heels made of leather. The use of rubber soles came next. The first rubbersoled shoes were called plimsolls, and they were manufactured in the United States in the late 1800s.

The first American shoes made without leather were invented in 1917. The upper material was made of a flexible canvas. Those were the original "sneakers," a word that was used because the

rubber sole made the shoe very quiet, unlike most leather shoes, which often squeaked when people walked.

Many people today choose athletic shoes for casual wear, but not until the late 1970s were shoes designed with amateur athletes in mind. Shoes made of rubber and canvas were worn by tennis, volleyball, and basketball players. By the 1980s, companies began to design athletic shoes for specific sports, helping athletes perform better while protecting their feet and providing comfort.

Shoes have come a long way since the ancient Egyptians created their first sandals. Many more types of materials are used, and shoes have never been more comfortable or supportive for feet. Even so, it is interesting that the basic sandal, crafted by people more than four thousand years ago, still has many similarities to shoes we wear today.

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Questions 28 – 31

Instructions to follow

- Look at the sections **A – D**. For which sections are the following headings true? Choose the correct number.

28 SECTION A

29 SECTION B

30 SECTION C

31 SECTION D

1 Shoes have come a long way

2 The first American shoes

3 New Trends, Materials, and Designs

4 The leather shoes

5 Shoes in Early Civilizations

6 Shoes for royalty

7 From Sandals to Sneakers Shoes Step Forward

8 The Shoemaking Process

Questions 32 - 36

Instructions to follow

- Choose the correct answer.

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32 What was the purpose of the first shoe?

A Comfortable

B Fashionable

C Functional

D Popularity

33 Which event happened first in the history of shoes?

A the making and wearing of moccasins

B the making and wearing of sandals

C the making and wearing of boots

D the making and wearing of sneakers

34 Which civilization was the first to wear shoes to make a fashion statement?

A Greek

B Roman

C Egyptian

D Persian

35 The First American shoes were made of which material

A Leather

B flexible canvas

C Grass

D Animal hide

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36 What is the author's purpose in writing the passage?

A to inform about the first sneaker

B to inform about the history of moccasins

C to inform about ancient Greeks

D to inform about the history of shoes

Questions 37 - 40

Instructions to follow

- Complete the sentences by using one or three words and/ or a number.

The first American Shoes were 37 _____

During 17th century, Europeans and North American mostly wore 38 _____

The word sneaker is used because the rubber sole shoes are 39 _____

In 1980s, companies made personalized 40 _____ shoes.

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IELTS Reading Test 22

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-12 which are based on Reading Passage 1

Architecture - Reaching for the Sky

Architecture is the art and science of designing buildings and structures. A building reflects the scientific and technological achievements of the age as well as the ideas and aspirations of the designer and client. The appearance of individual buildings, however, is often controversial.

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The use of an architectural style cannot be said to start or finish on a specific date. Neither is it possible to say exactly what characterises a particular movement. But the origins of what is now generally known as modern architecture can be traced back to the social and technological changes of the 18th and 19th centuries.

Instead of using timber, stone and traditional building techniques, architects began to explore ways of creating buildings by using the latest technology and materials such as steel, glass and concrete strengthened steel bars, known as reinforced concrete. Technological advances also helped bring about the decline of rural industries and an increase in urban populations as people moved to the towns to work in the new factories. Such rapid and uncontrolled growth helped to turn parts of cities into slums.

By the 1920s architects throughout Europe were reacting against the conditions created by

industrialisation. A new style of architecture emerged to reflect more idealistic notions for the future. It was made possible by new materials and construction techniques and was known as Modernism.

By the 1930s many buildings emerging from this movement were designed in the International Style. This was largely characterised by the bold use of new materials and simple, geometric forms, often with white walls supported by stilt-like pillars. These were stripped of unnecessary decoration that would detract from their primary purpose — to be used or lived in.

Walter Gropius, Charles Jeanneret (better known as Le Corbusier) and Ludwig Mies van der Rohe were among the most influential of the many architects who contributed to the development of Modernism in the first half of the century. But the economic depression of the 1930s and the second world war (1939-45) prevented their ideas from being widely realised until the economic conditions improved and war-torn cities had to be rebuilt. By the 1950s, the International Style had developed into a universal approach to building, which standardised the appearance of new buildings in cities across the world.

Unfortunately, this Modernist interest in geometric simplicity and function became exploited for profit. The rediscovery of quick-and-easy-to-handle reinforced concrete and an improved ability to prefabricate building sections meant that builders could meet the budgets of commissioning authorities and handle a renewed demand for development quickly and cheaply. But this led to many badly designed buildings, which discredited the original aims of Modernism.

Influenced by Le Corbusier's ideas on town planning, every large British city built multi-storey housing estates in the 1960s. Mass- produced, low-cost high-rises seemed to offer a solution to the problem of housing a growing inner-city population. But far from meeting human needs, the new estates often proved to be windswept deserts lacking essential social facilities and services.

Many of these buildings were poorly designed and constructed and have since been demolished.

By the 1970s, a new respect for the place of buildings within the existing townscape arose. Preserving historic buildings or keeping only their facades (or fronts) grew common. Architects also began to make more use of building styles and materials that were traditional to the area. The architectural style usually referred to as High Tech was also emerging. It celebrated scientific and engineering achievements by openly parading the sophisticated techniques used in construction. Such buildings are commonly made of metal and glass; examples are Stansted airport and the Lloyd's building in London.

Disillusionment at the failure of many of the poor imitations of Modernist architecture led to interest in various styles and ideas from the past and present. By the 1980s the coexistence of different styles of architecture in the same building became known as Post Modern. Other architects looked back to the classical tradition. The trend in architecture now favours smaller scale building design that reflects a growing public awareness of environmental issues such as energy efficiency. Like the Modernists, people today recognise that a well designed environment improves the quality of life but is not necessarily achieved by adopting one well defined style of architecture.

Twentieth century architecture will mainly be remembered for its tall buildings. They have been made possible by the development of light steel frames and safe passenger lifts. They originated in the US over a century ago to help meet the demand for more economical use of land. As construction techniques improved, the skyscraper became a reality.

Questions 1-7

Instructions to follow

- Complete the table below using information from Reading Passage .
- Write **NO MORE THAN THREE WORDS** for each answer.
- Write your answers in boxes **1-7** on your answer sheet.

PERIOD	STYLE OF PERIOD	BUILDING MATERIALS	CHARACTERISTICS
Before 18th century	*Example* traditional	1 _____	
1920s	introduction of 2 _____	steel, glass and concrete	exploration of latest technology
1930s - 1950s	3 _____		geometric forms
1960s	decline of Modernism	pre-fabricated sections	4 _____
1970s	end of Modernist era	traditional materials	5 _____ of historic buildings
1970s	beginning of 6 _____- era	metal and glass	sophisticated techniques paraded

1980s	Postmodernism		7 _____

Questions 8-12

Instructions to follow

- Reading Passage describes a number of cause and effect relationships. Match each Cause (8-12) in List A, with its Effect (**A-H**) in List B.
- Write your answers (**A-H**) in boxes **9-12** on your answer sheet.
- **NB** There are more effects in List B than you will need, so you will not use all of them. You may use any effect more than once if you wish.

List A CAUSES	List B EFFECTS
8 A rapid movement of people from rural areas to cities is triggered by technological advance. 9 Buildings become simple and functional. 10 An economic depression and the second world war hit Europe. 11 Multi-storey housing estates are built according to contemporary ideas on town planning. 12 Less land must be used for building.	A The quality of life is improved. B Architecture reflects the age. C A number of these have been knocked down. D Light steel frames and lifts are developed. E Historical buildings are preserved. B All decoration is removed. G Parts of cities become slums. H Modernist ideas cannot be put into practice until the second half of the 20th century.

Section 2

A. In the middle of Rome's trendiest neighborhood, surrounded by sushi restaurants and nightclubs with names like Rodeo Steakhouse and Love Story, sits the ancient world's biggest garbage dump—a 150-foot-tall mountain of discarded Roman amphoras, the shipping drums of the ancient world. It takes about 20 minutes to walk around Monte Testaccio, from the Latin testa and Italian cocci, both meaning "potsherd." But despite its size—almost a mile in circumference—it's easy to walk by and not really notice unless you are headed for some excellent pizza at Velavevodetto, a restaurant literally stuck into the mountain's side. Most local residents don't know what's underneath the grass, dust, and scattering of trees. Monte Testaccio looks like a big hill, and in Rome people are accustomed to hills.

B. Although a garbage dump may lack the attraction of the Forum or Colosseum, I have come to Rome to meet the team excavating Monte Testaccio and to learn how scholars are using its evidence to understand the ancient Roman economy. As the modern global economy depends on light sweet crude, so too the ancient Romans depended on oil—olive oil. And for more than 250 years, from at least the first century A.D., an enormous number of amphoras filled with olive oil came by ship from the Roman provinces into the city itself, where they were unloaded, emptied, and then taken to Monte Testaccio and thrown away. In the absence of written records or literature on the subject, studying these amphoras is the best way to answer some of the most vexing questions concerning the Roman economy—How did it operate? How much control did the emperor exert over it? Which sectors were supported by the state and which operated in a free market environment or in the private sector?

C. Monte Testaccio stands near the Tiber River in what was ancient Rome's commercial

district. Many types of imported foodstuffs, including oil, were brought into the city and then stored for later distribution in the large warehouses that lined the river. So, professor, just how many amphoras are there?" I ask José Remesal of the University of Barcelona, co-director of the Monte Testaccio excavations. It's the same question that must occur to everyone who visits the site when they realize that the crunching sounds their footfalls make are not from walking on fallen leaves, but on pieces of amphoras. (Don't worry, even the small pieces are very sturdy.) Remesal replies in his deep baritone, "Something like 25 million complete ones. Of course, it's difficult to be exact," he adds with a typical Mediterranean shrug. I, for one, find it hard to believe that the whole mountain is made of amphoras without any soil or rubble. Seeing the incredulous look on my face as I peer down into a 10-foot-deep trench, Remesal says, "Yes, it's really only amphoras." I can't imagine another site in the world where archaeologists find so much—about a ton of pottery every day. On most Mediterranean excavations, pottery washing is an activity reserved for blisteringly hot afternoons when digging is impossible. Here, it is the only activity for most of Remesal's team, an international group of specialists and students from Spain and the United States. During each year's two-week field season, they wash and sort thousands of amphoras handles, bodies, shoulders, necks, and tops, counting and cataloguing, and always looking for stamped names, painted names, and numbers that tell each amphora's story.

D. Although scholars worked at Monte Testaccio beginning in the late 19th century, it's only within the past 30 years that they have embraced the role amphoras can play in understanding the nature of the Roman imperial economy. According to Remesal, the main challenge archaeologists and economic historians face is the lack of "serial documentation," that is, documents for consecutive years that reflect a true chronology. This is what makes Monte Testaccio a unique record of Roman commerce and provides a vast amount of datable evidence in a clear and unambiguous sequence. "There's no other

place where you can study economic history, food production and distribution, and how the state controlled the transport of a product," Remesal says. "It's really remarkable."

Questions 13-16

Instructions to follow

- Reading Passage 2 has four paragraphs **A-D.** Which paragraph contains what information?
- Write the correct letter, **A-D**, in boxes **13-16** on your answer sheet.

13 Questions about the Roman economy_____

14 A unique feature _____

15 Description of the dump _____

16 Dialogue with a professor _____

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Questions 17–21

Instructions to follow

- Do the following statements agree with the information given in Reading Passage 2?
- In boxes **17–21** on your answer sheet, write

- **TRUE** if the statement agrees with the information
- **FALSE** if the statement contradicts the information
- **NOT GIVEN** if there is no information on this

17 World's biggest garbage dump is surrounded by restaurants and nightclubs.

18 The garbage dump is as popular as the Colosseum in Rome.

19 Ancient Roman economy depended on oil.

20 There is no information on how many amphoras are there.

21 Remesal says that Monte Testaccio is a great place to study economics.

Questions 22–26

Instructions to follow

- Complete the sentences below.
- Write **NO MORE THAN THREE WORDS** from the passage for each answer.
- Write your answers in boxes **22–26** on your answer sheet.

22 It is unknown for…….. what's underneath the grass, dust, and scattering of trees.

23 Monte Testaccio stands near the ancient Rome's ……..

24 Remesal doesn't believe that the whole mountain is made of …….. without any soil or rubble.

25 Remesal's team washes and sorts thousands of amphoras each year's two-week …….. .

26 ……..started working at Monte Testaccio in the late 19th century.

Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40, which are based on Reading Passage 3 below.

Mystery in Easter Island!

A. One of the world's most famous yet least visited archaeological sites, Easter Island is a small, hilly, now treeless island of volcanic origin. Located in the Pacific Ocean at 27 degrees south of the equator and some 2200 miles (3600 kilometers) off the coast of Chile, it is considered to be the world's most remote inhabited island. The island is, technically speaking, a single massive volcano rising over ten thousand feet from the Pacific Ocean floor. The island received its most well-known current name, Easter Island, from the Dutch sea captain Jacob Roggeveen who became the first European to visit Easter Sunday, April 5, 1722.

B. In the early 1950s, the Norwegian explorer Thor Heyerdahl popularized the idea that the island had been originally settled by advanced societies of Indians from the coast of South America. Extensive archaeological, ethnographic and linguistic research has conclusively shown this hypothesis to be inaccurate. It is now recognized that the original inhabitants of Easter Island are of Polynesian stock (DNA extracts from skeletons have confirmed this), that they most probably came from the Marquesas or Society islands, and that they arrived as early as 318 AD (carbon dating of reeds from a grave confirms this). At the time of their arrival, much of the island was forested, was teeming with land birds, and was perhaps the most productive breeding site for seabirds in the Polynesia region. Because of the plentiful bird, fish and plant food sources, the human population grew and gave

rise to a rich religious and artistic culture.

C. That culture's most famous features are its enormous stone statues called moai, at least 288 of which once stood upon massive stone platforms called ***ahu***. There are some 250 of these ***ahu*** platforms spaced approximately one-half mile apart and creating an almost unbroken line around the perimeter of the island. Another 600 moai statues, in various stages of completion, are scattered around the island, either in quarries or along ancient roads between the quarries and the coastal areas where the statues were most often erected. Nearly all the moai are carved from the tough stone of the ***Rano Raraku*** volcano. The average statue is 14 feet and 6 inches tall and weighs 14 tons. Some moai were as large as 33 feet and weighed more than 80 tons. Depending upon the size of the statues, it has been estimated that between 50 and 150 people were needed to drag them across the countryside on sledges and rollers made from the island's trees.

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D. Scholars are unable to definitively explain the function and use of the moai statues. It is assumed that their carving and erection derived from an idea rooted in similar practices found elsewhere in Polynesia but which evolved in a unique way on Easter Island. Archaeological and iconographic analysis indicates that the statue cult was based on an ideology of male, lineage-based authority incorporating anthropomorphic symbolism. The statues were thus symbols of authority and power, both religious and political. But they were not only symbols. To the people who erected and used them, they were actual repositories of sacred spirit. Carved stone and wooden objects in ancient Polynesian religions, when properly fashioned and ritually prepared, were believed to be charged by a magical spiritual essence called ***mana***. The ahu platforms of Easter Island were the sanctuaries of the people, and the moai statues were the ritually charged sacred objects of those sanctuaries.

E. Besides its more well-known name, Easter Island is also known as ***Te-Pito-O-Te-Henua*b**, meaning 'The Navel of the World', and as ***Mata-Ki-Te-Rani***, meaning 'Eyes Looking at Heaven'. These ancient name and a host of mythological details ignored by mainstream archaeologists point to the possibility that the remote island may once have been a geodetic marker and the site of an astronomical observatory of a long-forgotten civilization. In his book, Heaven's Mirror, Graham Hancock suggests that Easter Island may once have been a significant scientific outpost of this antediluvian civilization and that its location had extreme importance in a planet-spanning, mathematically precise grid of sacred sites. Two other alternative scholars, Christopher Knight and Robert Lomas, have extensively studied the location and possible function of these geodetic markers. In their fascinating book, Uriel's Machine, they suggest that one purpose of the geodetic markers was as part of a global network of sophisticated astronomical observatories dedicated to predicting and preparing for future commentary impacts and crystal displacement cataclysms.

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F. In the latter years of the 20th century and the first years of the 21st century, various writers and scientists have advanced theories regarding the rapid decline of Easter Island's magnificent civilization around the time of the first European contact. Principal among these theories, and now shown to be inaccurate, is that postulated by Jared Diamond in his book ***Collapse: How Societies Choose to Fail or Survive.*** Basically, these theories state that a few centuries after Easter Island's initial colonization the resource needs of the growing population had begun to outpace the island's capacity to renew itself ecologically. By the 1400s the forests had been entirely cut, the rich ground cover had eroded away, the springs had dried up, and the vast flocks of birds coming to roost on the island had disappeared. With no logs to build canoes for offshore fishing, with depleted bird and wildlife food sources, and with declining crop yields because of the erosion of good soil, the nutritional intake of the people plummeted. First famine, then

cannibalism, set in. Because the island could no longer feed the chiefs, bureaucrats and priests who kept the complex society running, the resulting chaos triggered a social and cultural collapse. By 1700 the population dropped to between one-quarter and one-tenth of its former number, and many of the statues were toppled during supposed “clan wars” of the 1600 and 1700s.

G. The faulty notions presented in these theories began with the racist assumptions of Thor Heyerdahl and have been perpetuated by writers, such as Jared Diamond, who do not have sufficient archaeological and historical understanding of the actual events which occurred on Easter Island. The real truth regarding the tremendous social devastation which occurred on Easter Island is that it was a direct consequence of the inhumane behaviour of many of the first European visitors, particularly the slavers who raped and murdered the islanders, introduced smallpox and other diseases, and brutally removed the natives to mainland South America.

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Questions 27-30

The reading passage has seven paragraphs, **A-G**

Instructions to follow

- Choose the correct heading for paragraphs **A-G** from the list below.
- Write the correct number, **i-xi**, in boxes **27-30** on your answer sheet.
- **NB** There are more headings than paragraphs

List of headings

i. The famous moai
ii. The status represented symbols of combined purposes
iii. The ancient spots which indicate the scientific application

iv. The story of the name
v. Early immigrants, rise and prosperity
vi. The geology of Easter Island
vii. The begin of Thor Heyerdahl's discovery
viii. The countering explanation to the misconceptions politically manipulated
ix. Symbols of authority and power
x. The Navel of the World
xi. The Norwegian Invaders' legacy

Example

Paragraph **A**	iv
Paragraph **C**	I

27 Paragraph **B**

28 Paragraph **D**

29 Paragraph **E**

30 Paragraph **G**

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Questions 31-36

Instructions to follow

- Do the following statements agree with the information given in Reading Passage 3?
- In boxes **31-36** on your answer sheet write
- **TRUE** if the statement is true
- **FALSE** if the statement is false
- **NOT GIVEN** if the information is not given in the passage

31 The first inhabitants of Easter Island are Polynesian, from the Marquesas or Society islands.

32 Construction of some moai statues on the island was not finished.

33 The Moai can be found not only on Easter Island but also elsewhere in Polynesia.

34 Most archaeologists recognised the religious and astronomical functions for an ancient society.

35 The structures of Easter Island work as an astronomical outpost for extraterrestrial visitors.

36 the theory that depleted natural resources leading to the fall of Easter Island actual have a distorted perspective

Questions 37-40

Instructions to follow

- Complete the following summary of the paragraphs of Reading Passage
- Using **NO MORE THAN THREE WORDS** from the Reading Passage for each answer.
- Write your answers in boxes **37-40** on your answer sheet.

Many theories speculated that Easter Island's fall around the era of the initial European contact. Some say the resources are depleted by a 37 .....; The erroneous theories began with a root of the 38 ..... advanced by some scholars. Early writers did not have adequate 39 ..... understandings to comprehend the true nature of events on the island. The social devastation was, in fact, a direct result of 40 ..... of the first European settlers.

IELTS Reading Test 23

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-13 which are based on Reading Passage 1

Can We Believe Our Own Eyes?

A. An optical illusion refers to a visually perceived image that is deceptive or misleading in that information transmitted from the eye to the brain is processed in a way that the related assumption or deduction does not represent the true physical reality. Our perceptions of what we think we see can be influenced by a number of external factors; 'illusions' can be classified into two main categories these being 'physiological illusions' and 'cognitive' illusions, the latter category can then be divided again into four sub-types.

B. Physiological illusions occur as a result of excessive stimulation of the eyes and brain which leads to a temporary state of confusion and mixed messages. For example, after exposure to extremely vivid lights, the eyes may need time to adapt and immediately after the stimulus, we may see things that would not be the norm. In the same way a contingent perceptual after-effect may be experienced after staring at a particular colour and the receptors in the brain may process subsequent colours inaccurately until overload has passed.

C. Cognitive illusions, on the other hand, are said to arise not as a result of neurone activity

as with the aforementioned category, but due to assumptions we may consciously make based on our knowledge and experience of the world. The four categories of cognitive illusion are 'ambiguous' illusions, 'distorting' illusions 'paradox' illusions and 'fictional' illusions. Inclusion of 'fictional' illusions into the cognitive group is somewhat misleading; however, as this type of illusion is unique in that it is only seen by an individual in a given situation and exists in no tangible form. A fictional illusion is in reality a hallucination which arises as a result of drug use or a brain condition such as schizophrenia.

D. Ambiguous illusions are pictures or objects which are structured in such a way that alternative perceptions of their structure are possible. Different individuals may instantly perceive the object or picture in a different way than another and, in fact, the same individual is often able to see and interpret the image or object in more than one form. A classic example of an ambiguous illusion is the Necker cube. This cube is a standard line drawing which our visual senses generally interpret as a three dimensional box. Wien the lines of the box cross, the picture intentionally does not define which is in front and which is behind. However, when individuals view the box, it is the automatic response of the mind to interpret what is seen. Generally our thought process patterns work in the way that we view objects from above; for this reason, when most people look at the Necker Cube they will interpret the lower left face as being the front of the box, the base of the front face being parallel to the floor as their thought processes convert the image to three dimensions. However, it is also possible to interpret the image differently in that the front of the box could also be seen to be in a different position.

E. The Necker Cube made contributions to researchers' understanding of the human visual system, providing evidence that the brain is a neural network with two distinct and interchangeable states. It has also been used in epistemology – the study of knowledge – as evidence to disprove the theory upheld by 'direct realism' that the way the human

mind perceives the world is the way the world actually is. To illustrate, with the´ Necker cube we are generally able to see one or both versions of a three dimensional cube, when in fact only a two dimensional drawing comprised of 12 lines exists.

F. Distorting illusions affect an individual's ability to judge size, length, or curvature; the Muller-Lyer illusion which consists of three lines with arrow-like endings is a prime example. In this illusion the middle arrow has both arrow ends pointing out, while the line above it has arrow' ends pointing in and the third and final line possesses one inward pointing and one outward pointing arrow' end. ¿Most respondents from certain backgrounds generally respond that the middle arrow is the longest (though all are in fact the same). However, cultural backgrounds affect perceptions related to this illusion; international research having shown that non-Western subjects, particularly those generally not exposed to rectangular shaped buildings and door frames in their day to day life, are less likely to misinterpret the true length of the three drawings.

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G. Paradox illusions encourage the mind to believe that we are seeing something we know to be impossible. The Penrose Stairs and the Penrose Triangle, developed by Lionel Penrose are examples of models created to illustrate this phenomenon. Many naturally occurring optical illusions also exist. Throughout the world there a number of locations where objects can be perceived to roll uphill; our cognitive and pre-learned knowledge inform us that this is impossible; however information received by the visual senses of observers creates conflict. These areas are often known as 'gravity hills or 'magnetic' hills and are often popular with tourists; the mystical properties of the area often promoted vigorously to add mystique or claimed to arise as a result of the special properties and magnetic influence of the area's land.

H. The scientific explanation for such phenomenon is that such areas are set on slightly

sloping ground without a visible horizon against which to establish perspective. In addition, surrounding points of reference we would generally expect to be perpendicular, such as trees, are in fact on a slope. The interpretation of what observers believe they are experiencing is therefore confused, downward slopes may be perceived to be horizontal or tilting upwards and cars with hand brakes released on such ground appear to roll upwards when in fact they a rolling, as gravity dictates, in a downhill direction. While our innate sense of balance under normal situations helps us determine the inclination of the ground, interference from the visual stimuli as outlined above and lack of reference from points on the horizon can override this ability in such situations, especially if the gradient is gentle.

Questions 1-3

Instructions to follow

- Answer the questions below.
- Choose **NO MORE THAN THREE WORDS** from the passage for each answer.
- Write your answers in boxes **1-3** on your answer sheet.

1. What type of illusion is a result of interference with neurone activity?
2. Which two factors influence the way we process information on a cognitive level?
3. Which theory holds that individuals see only the true reality of a situation?

Questions 4-8

Instructions to follow

- Write the correct letter **A-D** in boxes **4-8** on your answer sheet.

According to the information in Reading Passage, classify the following as relating to

A Fictional illusions

B Paradox illusions

C Distorting illusions

D Ambiguous illusions

4 may be perceived differently by individuals of diverse ethnic origin

A B C D

5 may override our natural ability to make rational judgement

A B C D

6 may be interpreted differently even by the same subject

A B C D

7 may result due to chemical stimulation

A B C D

8 has been used to question the validity of arguments in a different field

A B C D

Questions 9-13

Instructions to follow

- Choose the correct letter, **A, B, C or D**.
- Write your answers in boxes **21-25** on your answer sheet.

9 Fictional illusions

A ○ may eventually lead to schizophrenia.

B ○ are the only type which are completely subjective.

C ○ are very similar to paradox illusions.

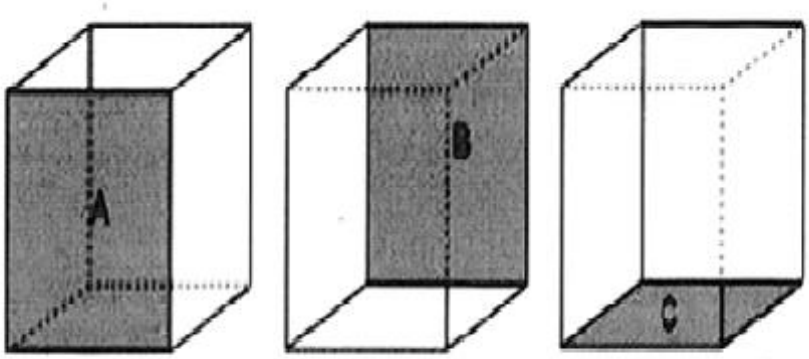
D ○ are typical of cognitive illusions.

10 According to ambiguous illusion theory, which face of the Necker Cube is interpreted to be the front of the box due to the general tendency to view objects from above?

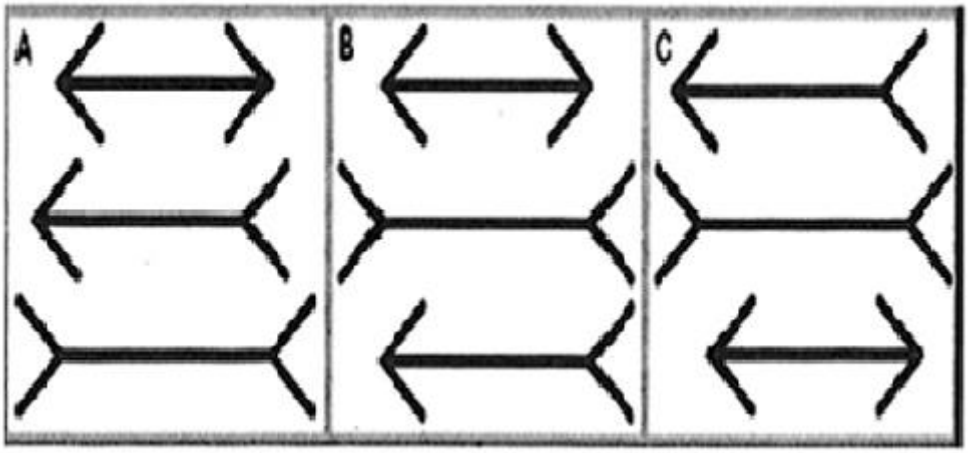
A ○

B ○

C ○



11 Which diagram represents the Muller-Lyer illusion?



A ○

B ○

C ○

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12 The Penrose Stairs are an example of a model which

A ○ can persuade the viewer they are seeing something infeasible.

B ○ has disproven established theories on knowledge.

C ○ is a naturally occurring paradox illusion.

D ○ can be seen in a number of international locations.

13 Occurrences on 'gravity' or 'magnetic' hills result due to

A ○ the mineral content of soil in the area.

B ○ factors currently unexplained from a scientific perspective.

C ○ misleading natural points of reference.

D ○ rising slopes being misinterpreted as on a decline.

Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26, which are based on Reading Passage 2 below.

Children's Literature

A. Stories and poems aimed at children have an exceedingly long history: lullabies, for example, were sung in Roman times, and a few nursery games and rhymes are almost as ancient. Yet so far as written-down literature is concerned, while there were stories in print before 1700 that children often seized on when they had the chance, such as translations of Aesop's fables, fairy-stories and popular ballads and romances, these were not aimed at young people in particular. Since the only genuinely child-oriented literature at this time would have been a few instructional works to help with reading and general knowledge, plus the odd Puritanical tract as an aid to morality, the only course for keen child readers was to read adult literature. This still occurs today, especially with adult thrillers or romances that include more exciting, graphic detail than is normally found in the literature for younger readers.

B. By the middle of the 18th century there were enough eager child readers, and enough parents glad to cater to this interest, for publishers to specialize in children's books whose first aim was pleasure rather than education or morality. In Britain, a London merchant named Thomas Boreham produced Cajanus, The Swedish Giant in 1742, while the more famous John Newbery published A Little Pretty Pocket Book in 1744. Its contents - rhymes, stories, children's games plus a free gift ('A ball and a pincushion')——in many ways anticipated the similar lucky-dip contents of children's annuals this century. It is a

tribute to Newbery's flair that he hit upon a winning formula quite so quickly, to be pirated almost immediately in America.

C. Such pleasing levity was not to last. Influenced by Rousseau, whose Emile(1762) decreed that all books for children save Robinson Crusoe were a dangerous diversion, contemporary critics saw to it that children's literature should be instructive and uplifting. Prominent among such voices was Mrs. Sarah Trimmer, whose magazine The Guardian of Education (1802) carried the first regular reviews of children's books. It was she who condemned fairy-tales for their violence and general absurdity; her own stories, Fabulous Histories (1786) described talking animals who were always models of sense and decorum.

D. So the moral story for children was always threatened from within, given the way children have of drawing out entertainment from the sternest moralist. But the greatest blow to the improving children's book was to come from an unlikely source indeed: early 19th-century interest in folklore. Both nursery rhymes, selected by James Orchard Halliwell for a folklore society in 1842, and collection of fairy-stories by the scholarly Grimm brothers, swiftly translated into English in 1823, soon rocket to popularity with the young, quickly leading to new editions, each one more child-centered than the last. From now on younger children could expect stories written for their particular interest and with the needs of their own limited experience of life kept well to the fore. What eventually determined the reading of older children was often not the availability of special children's literature as such but access to books that contained characters, such as young people or animals, with whom they could more easily empathize, or action, such as exploring or fighting, that made few demands on adult maturity or understanding.

E. The final apotheosis of literary childhood as something to be protected from unpleasant

reality came with the arrival in the late 1930s of child-centered best-sellers intend on entertainment at its most escapist. In Britain novelist such as Enid Blyton and Richmal Crompton described children who were always free to have the most unlikely adventures, secure in the knowledge that nothing bad could ever happen to them in the end. The fact that war broke out again during her books' greatest popularity fails to register at all in the self-enclosed world inhabited by Enid Blyton's young characters. Reaction against such dream-worlds was inevitable after World War II, coinciding with the growth of paperback sales, children's libraries and a new spirit of moral and social concern. Urged on by committed publishers and progressive librarians, writers slowly began to explore new areas of interest while also shifting the settings of their plots from the middle-class world to which their chiefly adult patrons had always previously belonged.

F. Critical emphasis, during this development, has been divided. For some, the most important task was to rid children's books of the social prejudice and exclusiveness no longer found acceptable. Others concentrated more on the positive achievements of contemporary children's literature. That writers of these works are now often recommended to the attentions of adult as well as child readers echoes the 19th-century belief that children's literature can be shared by the generations, rather than being a defensive barrier between childhood and the necessary growth towards adult understanding.

Questions 14-18

Instructions to follow

- Complete the table below.
- Choose **NO MORE THAN TWO WORDS** from Reading Passage 2 for each answer.
- Write your answers in boxes **14-18** on your answer sheet.

DATE	FEATURES	AIM	EXAMPLE
Before 1700	Not aimed at young children	Education and morality	Puritanical tract
By the middle of 18th century	Collection of 14 ..... and games	Read for pleasure	A Little Pretty Pocket Book (exported to 15 .....)
Early 19th century	Growing interest in 16	To be more children-centered	Nursery rhymes and 17 .....
Late 1930s	Stories of harm-free 18	Entertainment	Enid Blyton and Richmal Crompton's novels

Questions 19-21

Instructions to follow

- Look at the following people and the list of statements below.
- Match each person with the correct statement.
- Write the correct letter **A-E** in boxes **19-21** on your answer sheet.

List of statements

A Wrote criticisms of children's literature

B Used animals to demonstrate the absurdity of fairy tales

C Was not a writer originally

D Translated a book into English

E Didn't write in the English language

D Thomas Boreham

A B C D E

20 Mrs. Sarah trimmer

A B C D E

21 Grimm Brothers

A B C D E

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Questions 22-26

Instructions to follow

- Do the following statements agree with the information given in Reading Passage 268?
- In boxes **22-26** on your answer sheet write

- **TRUE** if the statement agrees with the information
- **FALSE** if the statement contradicts the information
- **NOT GIVEN** if there is no information on this

22 Children didn't start to read books until 1700.

23 Sarah Trimmer believed that children's books should set good examples.

24 Parents were concerned about the violence in children's books.

25 An interest in the folklore changed the direction of the development of children's books.

26 Today children's book writers believe their works should appeal to both children and adults.

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Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40, which are based on Reading Passage 3 below.

Soviet's New Working Week

Historian investigates how Stalin changed the calendar to keep the Soviet people continually at work

A. "There are no fortresses that Bolsheviks cannot storm". With these words, Stalin expressed the dynamic self-confidence of the Soviet Union's Five Year Plan: weak and backward Russia was to turn overnight into a powerful modern industrial country. Between 1928 and 1932, production of coal, iron and steel increased at a fantastic rate, and new industrial cities sprang up, along with the world's biggest dam. Everyone's life was affected, as collectivised farming drove millions from the land to swell the industrial proletariat. Private enterprise disappeared in city and country, leaving the State supreme under the dictatorship of Stalin. Unlimited enthusiasm was the mood of the day, with the Communists believing that iron will and hard-working manpower alone would bring about a new world.

B. Enthusiasm spread to time itself, in the desire to make the state a huge efficient machine, where not a moment would be wasted, especially in the workplace. Lenin had already been intrigued by the ideas of the American Frederick Winslow Taylor (1856-1915), whose time-motion studies had discovered ways of stream-lining effort so that every worker could produce the maximum. The Bolsheviks were also great admirers of Henry Ford's assembly line mass production and of his Fordson tractors

that were imported by the thousands. The engineers who came with them to train their users helped spread what became a real cult of Ford. Emulating and surpassing such capitalist models formed part of the training of the new Soviet Man, a heroic figure whose unlimited capacity for work would benefit everyone in the dynamic new society. All this culminated in the Plan, which has been characterized as the triumph of the machine, where workers would become supremely efficient robot-like creatures.

C. Yet this was Communism whose goals had always included improving the lives of the proletariat. One major step in that direction was the sudden announcement in 1927 that reduced the working day from eight to seven hours. In January 1929, all Industries were ordered to adopt the shorter day by the end of the Plan. Workers were also to have an extra hour off on the eve of Sundays and holidays. Typically though, the state took away more than it gave, for this was part of a scheme to increase production by establishing a three-shift system. This meant that the factories were open day and night and that many had to work at highly undesirable hours.

D. Hardly had that policy been announced, though, then Yuri Larin, who had been a close associate of Lenin and architect of his radical economic policy, came up with an idea for even greater efficiency. Workers were free and plants were closed on Sundays. Why not abolish that wasted day by instituting a continuous workweek so that the machines could operate to their full capacity every day of the week? When Larin presented his ides to the Congress of Soviets in May 1929, no one paid much attention. Soon after, though, he got the ear of Stalin, who approved. Suddenly, in June, the Soviet press was filled with articles praising the new scheme. In August, the Council of Peoples' Commissars ordered that the continuous workweek be brought into immediate effect, during the height of enthusiasm for the Plan, whose goals the

new schedule seemed guaranteed to forward.

E. The idea seemed simple enough but turned out to be very complicated in practice. Obviously, the workers couldn't be made to work seven days a week, nor should their total work hours be increased. The solution was ingenious: a new five-day week would have the workers on the job for four days, with the fifth day free; holidays would be reduced from ten to five, and the extra hour off on the eve of rest days would be abolished. Staggering the rest-days between groups of workers meant that each worker would spend the same number of hours on the job, but the factories would be working a full 360 days a year instead of 300. The 360 divided neatly into 72 five-day weeks. Workers in each establishment (at first factories, then stores and offices) were divided into five groups, each assigned a colour which appeared on the new Uninterrupted Work Week calendars distributed all over the country. Colour-coding was a valuable mnemonic device since workers might have trouble remembering what their day off was going to be, for it would change every week. A glance at the colour on the calendar would reveal the free day, and allow workers to plan their activities. This system, however, did not apply to construction or seasonal occupations, which followed a six-day week, or to factories or mines which had to close regularly for maintenance: they also had a six-day week, whether interrupted (with the same day off for everyone) or continuous. In all cases, though, Sunday was treated like any other day.

F. Official propaganda touted the material and cultural benefits of the new scheme. Workers would get more rest; production and employment would increase (for more workers would be needed to keep the factories running continuously); the standard of living would improve. Leisure time would be more rationally employed, for cultural activities (theatre, clubs, sports) would no longer have to be crammed into a weekend,

but could flourish every day, with their facilities far less crowded. Shopping would be easier for the same reasons. Ignorance and superstition, as represented by organized religion, would suffer a mortal blow, since 80 per cent of the workers would be on the job on any given Sunday. The only objection concerned the family, where normally more than one member was working: well, the Soviets insisted, the narrow family was har less important than the vast common good and besides, arrangements could be made for husband and wife to share a common schedule. In fact, the regime had long wanted to weaken or sideline the two greatest potential threats to its total dominance: organised religion and the nuclear family. Religion succumbed, but the family, as even Stalin finally had to admit, proved much more resistant.

G. The continuous work week, hailed as a Utopia where time itself was conquered and the sluggish Sunday abolished forever, spread like an epidemic. According to official figures, 63 per cent of industrial workers were so employed by April 1930; in June, all industry was ordered to convert during the next year. The fad reached its peak in October when it affected 73 per cent of workers. In fact, many managers simply claimed that their factories had gone over to the new week, without actually applying it. Conforming to the demands of the Plan was important; practical matters could wait. By then, though, problems were becoming obvious. Most serious (though never officially admitted), the workers hated it. Coordination of family schedules was virtually impossible and usually ignored, so husbands and wives only saw each other before or after work; rest days were empty without any loved ones to share them – even friends were likely to be on a different schedule. Confusion reigned: the new plan was introduced haphazardly, with some factories operating five-, six- and seven-day weeks at the same time, and the workers often not getting their rest days at all.

H. The Soviet government might have ignored all that (It didn't depend on public

approval), but the new week was far from having the vaunted effect on production. With the complicated rotation system, the work teams necessarily found themselves doing different kinds of work in successive weeks. Machines, no longer consistently in the hands of people how knew how to tend them, were often poorly maintained or even broken. Workers lost a sense of responsibility for the special tasks they had normally performed.

I. As a result, the new week started to lose ground. Stalin's speech of June 1931, which criticised the "depersonalised labor" its too hasty application had brought, marked the beginning of the end. In November, the government ordered the widespread adoption of the six-day week, which had its own calendar, with regular breaks on the 6th, 12th, 18th, 24th, and 30th, with Sunday usually as a working day. By July 1935, only 26 per cent of workers still followed the continuous schedule, and the six-day week was soon on its way out. Finally, in 1940, as part of the general reversion to more traditional methods, both the continuous five-day week and the novel six-day week were abandoned, and Sunday returned as the universal day of rest. A bold but typically ill-conceived experiment was at an end.

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Questions 27-34

Reading Passage 3 has nine paragraphs **A-I.**

Instructions to follow

- Choose the correct heading for each paragraph from the list of headings below.
- Write the correct number **i-xii** in boxes **27-34** on your answer sheet.

List of Headings

i Benefits of the new scheme and its resistance
ii Making use of the once wasted weekends
iii Cutting work hours for better efficiency
iv Optimism of the great future
v Negative effects on the production itself
vi Soviet Union's five-year plan
vii The abolishment of the new work-week scheme
viii The Ford model
ix Reaction from factory workers and their families
x The color-coding scheme
xi Establishing a three-shift system
xii Foreign inspiration

Example	Answer
Paragraph C	V

27 Paragraph A

28 Paragraph B

29 Paragraph D

30 Paragraph E

31 Paragraph F

32 Paragraph G

33 Paragraph H

34 Paragraph I

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Questions 35-37

Instructions to follow

- Choose the correct letter **A**, **B**, **C** or **D**.
- Write your answers in boxes **35-37** on your answer sheet.

35 According to paragraph A, the Soviet's five-year plan was a success because

A ○ Bolsheviks built a strong fortress.

B ○ Russia was weak and backward.

C ○ industrial production increased.

D ○ Stalin was confident about the Soviet's potential.

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36 Daily working hours were cut from eight to seven to

A ○ improve the lives of all people

B ○ boost industrial productivity.

C ○ get rid of undesirable work hours.

D ○ change the already establish three-shift work system.

37 Many factory managers claimed to have complied with the demands of the new work week because

A ○ they were pressurized by the state to do so.

B ○ they believed there would not be any practical problems.

C ○ they were able to apply it.

D ○ workers hated the new plan.

Questions 38-40

Instructions to follow

- Answer the questions below using **NO MORE THAN TWO WORDS** from the passage for each answer.
- Write your answers in boxes **38-40** on your answer sheet.

38 Whose ideas of continuous work week did Stalin approve and helped to implement?

39 What method was used to help workers to remember the rotation of their off days?

40 What was the most resistant force to the new work week scheme?

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IELTS Reading Test 24

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-13 which are based on Reading Passage 1.

Man or Machine

A. During July 2003, the Museum of Science in Cambridge, Massachusetts exhibited what Honda calls 'the world's most advanced humanoid robot', ASIMO (the Advanced Step in Innovative Mobility). Honda's brainchild is on tour in North America and delighting audiences wherever it goes. After 17 years in the making, ASIMO stands at four feet tall, weighs around 115 pounds and looks like a child in an astronaut's suit. Though it is difficult to see ASIMO's face at a distance, on closer inspection it has a smile and two large 'eyes' that conceal cameras. The robot cannot work autonomously – its actions are 'remote-controlled' by scientist through the computer in its backpack. Yet watching AIMIO perform at a show in Massachusetts it seemed uncannily human. The audience cheered as ASIMO walked forwards and backwards, side to side and up and downstairs. After the show, a number of people told me that they would like robots to play more of a role in daily life – one even said that the robot would be like 'another person'.

B. While the Japanese have made huge strides in solving some of the engineering problems of human kinetics and bipedal movements, for the past 10 years scientists at MIT's former Artificial Intelligence (AI) lab (recently renamed the Computer Science

and Artificial Intelligence Laboratory, CSAIL) have been making robots that can behave like humans and interact with humans. One of MIT's robots, Kismet, is an anthropomorphic head and has two eyes (complete with eyelids), ears, a mouth, and eyebrows. It has several facial expressions, including happy, sad, frightened and disgusted. Human interlocutors are able to read some of the robot's facial expressions, and often change their behavior towards the machine as a result – for example, playing with it when it appears 'sad'. Kismet is now in MIT's museum, but the ideas developed here continue to be explored in new robots.

C. Cog (short for Cognition) is another pioneering project from MIT's former AI lab. Cog has a head, eyes, two arms, hands and a torso – and its proportions were originally measured from the body of a researcher in the lab. The work on Cog has been used to test theories of embodiment and developmental robotics, particularly getting a robot to develop intelligence by responding to its environment via sensors, and to learn through these types of interactions.

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D. MIT is getting furthest down the road to creating human-like and interactive robots. Some scientists argue that ASIMO is a great engineering feat but not an intelligent machine – because it is unable to interact autonomously with unpredictabilities in its environment in meaningful ways, and learn from experience. Robots like Cog and Kismet and new robots at MIT's CSAIL and media lab, however, are beginning to do this.

E. These are exciting developments. Creating a machine that can walk, make gestures and learn from its environment is an amazing achievement. And watch this space: these achievements are likely rapidly to be improved upon. Humanoid robots could have a plethora of uses in society, helping to free people from everyday tasks. In

Japan, for example, there is an aim to create robots that can do the tasks similar to an average human and also act in more sophisticated situations as firefighters, astronauts or medical assistants to the elderly in the workplace and in homes – partly in order to counterbalance the effects of an ageing population.

F. Such robots say much about the way in which we view humanity, and they bring out the best and worst of us. On one hand, these developments express human creativity – our ability to invent, experiment, and to extend our control over the world. On the other hand, the aim to create a robot like a human being is spurred on by dehumanized ideas – by the sense that human companionship can be substituted by machines; that humans lose their humanity when they interact with technology; or that we a little more than surface and ritual behaviors, that can be simulated with metal and electrical circuits.

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Questions 1-6

Reading passage 1 has six paragraphs, **A-F**.

Instructions to follow

- Which paragraph contains the following information?
- Write the correct letter, **A-F**, in boxes **1-6** on your answer sheet.
- **NB** You may use any letter more than once

1 different ways of using robots

A ○ B ○ C ○ D ○ E ○ F ○

2 a robot whose body has the same proportion as that of an adult

A ○ B ○ C ○ D ○ E ○ F ○

3 the fact that human can be copied and replaced by robots

A ○ B ○ C ○ D ○ E ○ F ○

4 a comparison between ASIMO for Honda and other robots

A ○ B ○ C ○ D ○ E ○ F ○

5 the pros and cons of creating robots

A ○ B ○ C ○ D ○ E ○ F ○

6 a robot that has eyebrows

A ○ B ○ C ○ D ○ E ○ F ○

Questions 7-13

Instructions to follow

- Complete the following summary of the paragraphs of Reading Passage 1.
- Using **NO MORE THAN TWO WORDS** from the Reading Passage for each answer.
- Write your answers in boxes **7-13** on your answer sheet.

In 2003, Massachusetts displayed a robot named ASIMO which was invented by Honda, after a period of 7 ..... in the making. The operating information is stored in the computer in its 8 ..... so that scientists can control ***ASIMO's*** movement. While Japan is making great progress, MIT is developing robots that are human-like and can 9 ..... Humans. What is special about Kismet is that it has different 10 ..... which can be read by human interlocutors 11 ..... is another robot from MIT, whose body's proportion is the same as an adult. By responding to the surroundings through 12 ....., it could develop its 13 .....

Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-26 which are based on Reading Passage 2.

How to Reduce Employee Turn Over

A. The chief executive of a large hotel became aware that his company was experiencing an annual employee turnover of about 60 per cent, at an annual cost estimated between $10 to $15 million. This large amount of money was calculated based on three factors: the money spent hiring and training replacements; the cost to the business in lower productivity due to employees becoming familiar with the requirements of their new job; and reduced occupancy rates, due to poor guest satisfaction levels.

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B. The Chief Executive knew that in order to save his company, he had to reduce the high turnover costs. Making up for the lost income due to turnover is not an easy task and many companies have not declared war on unwanted employee turnover because they have not taken the time to work out the costs of lost revenues and productivity. But the hotel boss decided to tackle the issue head-on by implementing a 4 point plan, the hotel first took the time to calculate their turnover costs; secondly to evaluate the main causes for the staff turnover and; thirdly to discuss some of the solutions to the problems and lastly to prioritize actions and evaluate future returns following implemented changes.

C. Within a two-year period, the results were significant. The annual employee turnover was reduced by 78 per cent and this impacted downtime due to training and guest

satisfaction. The result was a $10 million savings for the company. Because most do not know the root causes of employee turnover and costs have often not been accurately estimated, causes are usually not known. As a result, solutions are commonly not targeted at a company's individual, specific causes. The following is an examination of what the Chief Executive did to turn the hotel around.

D. Two factors were considered in relation to the calculation of costs: those departments who had the highest rates of turnover and those whose turnover had the greatest potential effect on profit. After some investigation, it was shown that some of the positions with the highest turnover rates such as cleaners and gardeners did not carry with them high associated costs. In fact, what was revealed was that only 6 per cent of employees accounted for 43 per cent of the turnover. Positions that involved a substantial amount of time in training were the ones that attracted the highest costing. The analysis revealed that those positions within the hotel which had the greatest impact on profit were people like the front office receptionists and those working in accounts.

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E. As unusual as it may sound, it is now a common understanding that offering employees more money is not necessarily a good solution to high employee turnover – often they leave because they simply dislike the work. Therefore, it was important to tackle the analysis from the perspective of what were the chief causes for staff leaving. A holistic approach was undertaken and several key findings emerged. The hotel found that fundamentally they adopted poor recruiting and selection practices. For example, it was shown that almost 35 per cent of the cleaning staff left after the first week and a further 25% during the first month. Candidates were being over-sold the job by recruiters and left soon after they encountered unrealistic job expectations.

F. Devising solutions to these issues was the other half of the equation. As far a recruiting

was concerned, they changed their approach by getting personnel from the hotel to handle it. Once this change was made, the attrition rates decreased substantially. To add to employee motivation, new staff were made aware of the mission and goals of the organization and how they would be paid above industry standard for striving to attain hotel values. New staff were shown where the hotel was heading and how they would have a guaranteed, stable employment situation with a major force in the hotel industry' – it was even suggested that after a period of employment, new staff might be given the opportunity to contribute to organizational goal setting.

G. They had been losing many of their employees during the first month or two of employment, so they made new staff aware that bonuses would be offered to newly-hired employees at the end of their first three months which greatly assisted in goal setting. Staff luncheons and the in-house volleyball and basketball competitions remained an effective part of staff unity and development and a support program was also introduced to help all staff with any job-related issues which gave employees a heightened sense of being cared for by the establishment. Another area of change that proved successful was the introduction of the Valuable Employee Program (VEP). When a person was employed in the past they were assigned a senior member of staff who assisted them with getting used to their new job.

H. Due to the limitations of the senior member's position however, they were often not in a position to explain any details regarding future advancement. Now, when staff are employed, they are clearly told what is expected in the job and where it might lead to the right candidate. Hotel surveys revealed that over 30 per cent of employees were not satisfied with the career opportunities in their current jobs so the articulation of the definite and realistic opportunity for advancement through the VEP led to a major decrease in employee attrition. Once the ship had been righted and the relative returns

on human resource investments had been calculated, setting priorities became a formality. Although at first a daunting task, the enormous cost of employee turnover offered an excellent opportunity for the hotel to improve profitability.

Question 14-18

Instructions to follow

- Complete the summary below of paragraphs **A-D** of Reading Passage 2.
- Choose ONE OR TWO WORDS from the passage for each answer.
- Write your answers in blank spaces next to **14-18** on your answer sheet.

Training new employees; downtime as new employees get used to their new job, and unfavourable guest satisfaction levels all led to a large 14_____ for a large hotel. It was determined that the solution to these problems, was in the reduction of the company's 15_____. The hotel addressed these issues in 4 ways through the implementation of a 16_____ . The efforts of the hotel chief executive decreased downtime and reduced employee turnover which, in turn, resulted in improvements in 17_____. The company position was improved by $10 million. It is not common for big companies to experience such 18_____

Question 19-21

Instructions to follow

- Do the following statements reflect the claims of the writer in Reading Passage 2?
- In boxes 19-21 on your answer sheet write

- **YES** if the statement reflects the claims of the writer
- **NO** if the statement contradicts the claims of the writer
- **NOT GIVEN** if it is impossible to say what the writer thinks about this

19 It was surprising that positions with the highest turnover were not connected to high costs.

20 There was a clear connection between high costs and length of training.

21 New employees were given an incorrect description of their job.

Question 22-26

Instructions to follow

- Choose these changes from list A-L below.
- Write the appropriate letters A-L in boxes 22-26 on your answer sheet.

Reading Passage 2 gives FIVE effective changes that the hotel introduced for staff.

A changes

B discussed future plans

C introduced regular staff luncheons

D started a regular sports program

AE clearly defined job expectations

F did their own staff recruiting

G built new sporting facilities

AH involved new staff in goal setting

I offered bonuses to proven, committed new staff

J began meeting regularly with new staff

K implemented a support program

AL began recruiting through an employment service

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22 _____

23 _____

24 _____

25 _____

26 _____

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Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 27-40 which are based on Reading Passage 3.

Grimm's Fairy Tales

A. The Brothers Grimm, Jacob and Wilhelm, named their story collection Children's and Household Tales and published the first of its seven editions in Germany in 1812. The table of contents reads like an A-list of fairy-tale celebrities: Cinderella, Sleeping Beauty, Snow White, Little Red Riding Hood, Rapunzel, Rumpelstiltskin, Hansel and Gretel, the Frog King. Drawn mostly from oral narratives, the 210 stories in die Grimm's' collection represent an anthology of fairy tales, animal fables, rustic farces, and religious allegories that remain unrivalled to this day.

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B. Such lasting fame would have shocked the humble Grimms. During their lifetimes the collection sold modestly in Germany, at first only a few hundred copies a year. The early editions were not even aimed at children. The brothers initially refused to consider illustrations, and scholarly footnotes took up almost as much space as the tales themselves. Jacob and Wilhelm viewed themselves as patriotic folklorists, not as entertainers of children. They began their work at a time when Germany had been overrun by the French under Napoleon, who was intent on suppressing local culture. As young, workaholic scholars, single and sharing a cramped flat, the Brothers Grimm undertook the fairy-tale collection with the goal of serving the endangered oral tradition of Germany.

C. For much of the 19th-century teachers, parents, and religious figures, particularly in the United States, deplored the Grimms' collection for its raw, uncivilized content. Offended adults objected to the gruesome punishments inflicted on the stories' villains. In the original "Snow White" the evil stepmother is forced to dance in red-hot iron shoes until she falls down dead. Even today some protective parents shy from the Grimms' tales because of their reputation for violence.

D. Despite its sometimes rocky reception, Children's and Household Tales gradually took root with the public. The brothers had not foreseen that the appearance of their work would coincide with a great flowering of children's literature in Europe. English publishers led the way, issuing high-quality picture books such as Jack and the Beanstalk and handsome folktale collections, all to satisfy a newly literate audience seeking virtuous material for the nursery. Once the Brothers Grimm sighted this new public, they set about refining and softening their tales, which had originated centuries earlier as earthy peasant fare. In the Grimms' hands, cruel mothers became nasty stepmothers, unmarried lovers were made chaste, and the incestuous father was recast as the devil.

E. In the 20th century, the Grimms' fairy tales have come to rule the bookshelves of children's bedrooms. The stories read like dreams come true: handsome lads and beautiful damsels, armed with magic, triumph over giants and witches and wild beasts. They outwit mean, selfish adults. Inevitably the boy and girl fall in love and live happily ever after. And parents keep reading because they approve of the finger-wagging lessons inserted into the stories: keep your promises, don't talk to strangers, work hard, obey your parents. According to the Grimms, the collection served as "a manual of manners".

F. Altogether some 40 persons delivered tales to the Grimms. Many of the storytellers came to the Grimms' house in Kassel. The brothers particularly welcomed the visits of Dorothea

Viehmann, a widow who walked to town to sell produce from her garden. An innkeeper daughter, Viehmann had grown up listening to stories from travellers on the road to Frankfurt. Among her treasure was “Aschenputtel” -Cinderella. Marie Hassenpflug was a 20-year-old friend of their sister, Charlotte, from a well-bred, French-speaking family. Marie’s wonderful stories blended motifs from the oral tradition and from Perrault’s influential 1697 book, Tales of My Mother Goose, which contained elaborate versions of “Little Red Riding Hood”, “Snow White”, and “Sleeping Beauty”, among others. Many of these had been adapted from earlier Italian tales.

G. Given that the origins of many of the Grimm fairy tales reach throughout Europe and into the Middle East and Orient, the question must be asked: How German are the Grimm tales? Very, says scholar Heinz Rolleke. Love of the underdog, rustic simplicity, creative energy—these are Teutonic traits. The coarse texture of life during medieval times in Germany, when many of the tales entered the oral tradition, also coloured the narratives. Throughout Europe, children were often neglected and abandoned, like Hansel and Gretel. Accused witches were burned at the stake, like the evil mother-in-law in “The Six Swans”. “The cruelty in the stories was not the Grimm’s fantasy”, Rolleke points out” It reflected the law-and-order system of the old times”.

H. The editorial fingerprints left by the Grimms betray the specific values of 19th-century Christian, bourgeois German society. But that has not stopped the tales from being embraced by almost every culture and nationality in the world. What accounts for this widespread, enduring popularity? Bernhard Lauer points to the “universal style” of the writing, you have no concrete descriptions of the land, or the clothes, or the forest, or the castles. It makes the stories timeless and placeless,” The tales allow us to express ‘our utopian longings’,” says Jack Zipes of the University of Minnesota, whose 1987 translation of the complete fairy tales captures the rustic vigour of the original text. They show a

striving for happiness that none of us knows but that we sense is possible. We can identify with the heroes of the tales and become in our mind the masters and mistresses of our own destinies."

I. Fairy tales provide a workout for the unconscious, psychoanalysts maintain. Bruno Bettelheim famously promoted the therapeutic of the Grimms' stories, calling fairy tales the "great comforters. By confronting fears and phobias, symbolized by witches, heartless stepmothers, and hungry wolves, children find they can master their anxieties. Bettelheim's theory continues to be hotly debated. But most young readers aren't interested in exercising their unconsciousness. The Grimm tales, in fact, please in an infinite number of ways, something about them seems to mirror whatever moods or interests we bring to our reading of them. The flexibility of interpretation suits them for almost any time and any culture.

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Questions 27-32

Instructions to follow

- Do the following statements agree with the information given in Reading Passage 1?
- In boxes **27-32** on your answer sheet, write

- **YES** if the statement is true
- **NO** if the statement is false
- **NOT GIVEN** if the information is not given in the passage

27 The Grimm brothers believed they would achieve international fame.

28 The Grimm brothers were forced to work in secret.

29 Some parents today still think Grimm fairy tales are not suitable for children.

30 The first edition of Grimm's fairy tales sold more widely in England than in Germany.

31 Adults like reading Grimm's fairy tales for reasons different from those of children.

32 The Grimm brothers based the story "Cinderella" on the life of Dorothea Viehmann

Questions 33-35

Instructions to follow

- Choose the correct letter, A, B, C or D.
- Write your answers in boxes 33-35 on your answer sheet.

33 In paragraph 4, what changes happened at that time in Europe?

A Literacy levels of the population increased.

B The development of printing technology made it easier to publish.

C Schools were open to children.

D People were fond of collecting superb picture books.

34 What changes did the Grimm Brothers make in later editions?

A They made the stories shorter.

B They used more oral language.

C The content of the tales became less violent.

D They found other origins of the tales.

35 What did Marie Hassenpflug contribute to the Grimm's Fairy tales?

A She wrote stories.

B She discussed the stories with them.

C She translated a popular book for the brothers using her talent for languages.

D She told the oral stories that were based on traditional Italian stories.

Questions 36-40

Instructions to follow

- Complete the following summary of the paragraphs of Reading Passage
- Using NO MORE THAN TWO WORDS from the Reading Passage for each answer.
- Write your answers in boxes 36-40 on your answer sheet.

36 Heinz Rolleke said the Grimm's tales are "German" because the tales

A B C D E F G H

37 Heinz Rolleke said the abandoned children in tales

A B C D E F G H

38 Bernhard Lauer said the writing style of the Grimm brothers is universal because they

A B C D E F G H

39 Jack Zipes said the pursuit of happiness in the tales means they

A B C D E F G H

40 Bruno Bettelheim said the therapeutic value of the tales means that the fairy tales

A B C D E F G H

A reflect what life was like at that time

B help children deal with their problems

C demonstrate the outdated system

D tell of the simplicity of life in the German countryside

E encourage people to believe that they can do anything

F recognize the heroes in the real life

G contribute to the belief in nature power

A avoid details about characters' social settings.

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IELTS Reading Test 25

Section 1

Instructions to follow

- You should spend about 20 minutes on Questions 1-13 which are based on Reading Passage.

Early Childhood Education

New Zealand's National Party spokesman on education, Dr Lockwood Smith, recently visited the US and Britain. Here he reports on the findings of his trip and what they could mean for New Zealand's education policy.

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A. 'Education To Be More' was published last August. It was the report of the New Zealand Government's Early Childhood Care and Education Working Group. The report argued for enhanced equity of access and better funding for childcare and early childhood education institutions. Unquestionably, that's a real need; but since parents don't normally send children to pre-schools until the age of three, are we missing out on the most important years of all?

B. A 13 year study of early childhood development at Harvard University has shown that, by the age of three, most children have the potential to understand about 1000 words - most of the language they will use in ordinary conversation for the rest of their lives. Furthermore, research has shown that while every child is born with a natural curiosity, if can be suppressed dramatically during the second and third years of life. Researchers claim that the human personality is formed during

the first two years of life, and during the first three years children learn the basic skills they will use in all their later learning both at home and at school. Once over the age of three, children continue to expand on existing knowledge of the world.

C. It is generally acknowledged that young people from poorer socio-economic backgrounds fend to do less well in our education system. That's observed not just in New Zealand, but also in Australia, Britain and America. In an attempt to overcome that educational under-achievement, a nationwide programme called 'Headstart' was launched in the United Slates in 1965. A lot of money was poured into it. It took children into pre-school institutions at the age of three and was supposed to help the children of poorer families succeed in school. Despite substantial funding, results have been disappointing. It is thought that there are two explanations for this. First, the programme began too late. Many children who entered it at the age of three were already behind their peers in language and measurable intelligence. Second, the parents were not involved. At the end of each day, 'Headstart' children returned to the same disadvantaged home environment.

D. As a result of the growing research evidence of the importance of the first three years of a child's life and the disappointing results from 'Headstart', a pilot programme was launched in Missouri in the US that focused on parents as the child's first teachers. The 'Missouri' programme was predicated on research showing that working with the family, rather than bypassing the parents, is the most effective way of helping children get off to the best possible start in life. The four-year pilot study included 380 families who were about to have their first child and who represented a cross-section of socio-economic status, age and family configurations. They included single-parent and two-parent families, families in

which both parents worked, and families with either the mother or father at home. The programme involved trained parent- educators visiting the parents' home and working with tire parent, or parents, and the child. Information on child development, and guidance on things to look for and expect as the child grows were provided, plus guidance in fostering the child's intellectual, language, social and motor-skill development. Periodic check-ups of the child's educational and sensory development (hearing and vision) were made to detect possible handicaps that interfere with growth and development. Medical problems were referred to professionals. Parent-educators made personal visits to homes and monthly group meetings were held with other new parents to share experience and discuss topics of interest. Parent resource centres, located in school buildings, offered learning materials for families and facilitators for child core.

E. At the age of three, the children who had been involved in the 'Missouri' programme were evaluated alongside a cross-section of children selected from the same range of socio-economic backgrounds and family situations, and also a random sample of children that age. The results were phenomenal. By the age of three, the children in the programme were significantly more advanced in language development than their peers, had made greater strides in problem solving and other intellectual skills, and were further along in social development, tn fact, the average child on the programme was performing at the level of the top 15 to 20 per cent of their peers in such things as auditory comprehension, verbal ability and language ability. Most important of all, the traditional measures of 'risk', such as parents' age and education, or whether they were a single parent, bore little or no relationship to the measures of achievement and language development. Children in the programme performed equally well regardless of socio-economic disadvantages. Child abuse was virtually eliminated. The one

factor that was found to affect the child's development was family stress leading to a poor quality of parent-child interaction. That interaction was not necessarily bad in poorer families.

F. These research findings are exciting. There is growing evidence in New Zealand that children from poorer socio-economic backgrounds are arriving at school less well developed and that our school system tends to perpetuate that disadvantage. The initiative outlined above could break that cycle of disadvantage. The concept of working with parents in their homes, or at their place of work, contrasts quite markedly with the report of the Early Childhood Care and Education Working Group. Their focus is on getting children and mothers access to childcare and institutionalised early childhood education. Education from the age of three to five is undoubtedly vital, but without a similar focus on parent education and on the vital importance of the first three years, some evidence indicates that it will not be enough to overcome educational inequity.

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Questions 1-4

Reading Passage has six sections, A-F.

Instructions to follow

- Which paragraph contains the following information?
- Write the correct letter A-F in boxes 1-4 on your answer sheet.

1. details of the range of family types involved in an education programme
2. reasons why a child's early years are so important
3. reasons why an education programme failed

4 a description of the positive outcomes of an education programme

Questions 5-10

Instructions to follow

- Write the correct letter A. B, C or D in boxes 5-10 on your answer sheet.

Classify the following features as characterising

A the ' Headstart' programme

B the 'Missouri' programme

C both the 'Headstart' and the 'Missouri' programmes

D neither the 'Headstart' nor the 'Missouri'programme

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5 was administered to a variety of poor and wealthy families

A ○ B ○ C ○ D ○

6 continued with follow-up assistance in elementary schools

A ○ B ○ C ○ D ○

7 did not succeed in its aim

A ○ B ○ C ○ D ○

8 supplied many forms of support and training to parents

A ○ B ○ C ○ D ○

9 received insufficient funding

A B C D

10 was designed to improve pre-schoolers' educational development

A B C D

Questions 11-13

Instructions to follow

- Do the following statements agree with the information given in Reading Passage?
- In boxes 11-13 on your answer sheet, write

- **TRUE** if the statement agrees with the information
- **FALSE** if the statement contradicts the information
- **NOT GIVEN** if there is no information on this

11 Most 'Missouri' programme three-year-olds scored highly in areas such as listening, speaking, reasoning and interacting with others.

12 'Missouri' programme children of young, uneducated, single parents scored less highly on the tests.

13 The richer families in the 'Missouri' programme had higher stress levels.

Section 2

Instructions to follow

- You should spend about 20 minutes on Questions 14-27 which are based on Reading Passage 2.

The Reconstruction of Community in Talbot Park, Auckland

A. An architecture of disguise is almost complete at Talbot Park in the heart of Auckland's Glen Innes. The place was once described as a state housing ghetto, rife with crime, vandalism and other social problems. But today after a $48 million urban renewal makeover, the site is home to 700 residents – 200 more than before – and has people regularly inquiring whether they can buy or rent there. "It doesn't look like social housing," Housing New Zealand housing services manager Dene Busby says of the tidy brick and weatherboard apartments and townhouses which would look just as much at home in "there is no reason why public housing should look cheap in my view," says Design Group architect Neil of the eight three-bedroom terrace houses his firm designed.

B. Talbot Park is a triangle of government-owned land bounded by Apirana Ave, Pilkington Rd and Point England Rd. in the early 1960s, it was developed for state housing built around a linear park that ran through the middle. Initially, there was a strong sense of a family-friendly community. Former residents recall how the Talbot Park reserve played a big part in their childhoods – a place where the kids in the block came together to play softball, cricket, tiggy, leapfrog and bullrush. Sometimes they'd play "Maoris against Pakehas" but without any animosity. "It was all just good fun", says Georgie Thompson in Ben Schrader's We Call it Home: A History of State Housing in New Zealand. "We had

respect for our neighbours and addressed them by title Mr. and Mrs. so-and-so," she recalls.

C. Quite what went wrong with Talbot Park is not clear. We call it Home Records that the community began to change in the late 1970s as more Pacific Islanders and Europeans moved in. The new arrivals didn't readily integrate with the community, a "them and us" mentality developed, and residents interact with their neighbours less. What was clear was the buildings were deteriorating and becoming dilapidated, petty crime was on the rise and the reserve – the focus of fond childhood memories – had become a wasteland and was considered unsafe.

D. But it wasn't until 2002 that Housing New Zealand decided the properties needed upgrading. The master renewal plan didn't take advantage of the maximum accommodation density allowable (one unit per 100 sq metres) but did increase density to one unit per 180 sq m by refurbishing all 108 star flat units, removing the multis and building 111 new home. The Talbot strategy can be summed up as mix, match and manage. Mix up the housing with various plans from a mix of architects, match house styles to what's built by the private sector, match tenants to the mix, and manage their occupancy. Inevitably cost comes into the equation. "If you're going to build low-cost homes, you've got to keep them simple and you can't afford a fancy bit on them." Says Michael Thompson of *Architectus* which designed the innovative three-level Atrium apartments lining two sides of a covered courtyard. At $300,000 per two-bedroom unit, the building is more expensive but provides for independent disabled accommodation as well as offering solar hot water heating and rainwater collection for toilet cisterns and outside taps.

E. The renewal project budget at $1.5 million which will provide park pathways, planting,

playgrounds, drinking fountains, seating, skateboard rails, a half-size basketball hard court, and a pavilion. But if there was any doubt this is a low socio-economic area, the demographics for the surrounding Tamaki area are sobering. Of the 5000 households there, 55 per cent are statehouses, 28 per cent privately owned (compared to about 65 per cent nationally) and 17 per cent are private rental. The area has a high concentration of households with incomes in the $5000 to $15,000 range and very few with an income of over $70,000. That's in sharp contrast to the more affluent suburbs like Kohimarama and St John's that surround the area.

F. "The design is for people with different culture background," says architect James Lunday of Common Ground which designed the 21 large family homes. "Architecturally we decided to be relatively conservative – a nice house in its own garden with a bit of space and good indoor-outdoor flow." There's a slight reflection of the whare and a Pacific fale, but not overplayed "The private sector is way behind in urban design and sustainable futures," says Bracey. "Redesigning streets and parks is a big deal and very difficult to do. The private sector won't do it, because it's so hard.

G. There's no doubt good urban design and good architecture play a significant part in the scheme. But probably more important is a new standard of social control. Housing New Zealand calls it "intensive tenancy management". Others view it as social engineering. "It's a model that we are looking at going forward," according to Housing New Zealand's central Auckland regional manager Graham Bodman. "The focus is on frequent inspections, helping tenants to get to know each other and trying to create an environment of respect for neighbours," says Bodman. That includes some strict rules – no loud parties after 10 pm, no dogs, no cats in the apartments, no washing hung over balcony rails and a requirement to mow lawns and keep the property tidy. Housing New Zealand has also been active in organising morning teas and street barbecues for

residents to meet their neighbours. “It’s all based on the intensification,” says Community Renewal project manager Stuart Bracey. “We acknowledge if you are going to put more people living closer together, you have to actually help them to live closer together because it creates tension – especially for people that aren’t used to it.”

Questions 14-20

The Reading Passage has seven paragraphs A-G

Instructions to follow

- Choose the correct heading for paragraphs, A-G, from the list below.
- Write the correct number, i-x, in boxes 14-20 on your answer sheet.

List of Headings

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i. Financial hardship of community
ii. A good tendency of strengthening the supervision
iii. Details of plans for the community’s makeover and upgrade
iv. Architecture suits families of various ethnic origins
v. Problems arise then the mentality of alienation developed later
vi. Introduction of a social housing community with unexpected high standard
vii. A practical design and need assist and cooperate in future
viii. closer relationship among neighbors in the original site
ix. different need from a makeup of a low financial background should be considered
x. How to make the community feel safe
xi. A plan with details for the house structure.

14 Paragraph A

15 Paragraph B

16 Paragraph C

17 Paragraph D

18 Paragraph E

19 Paragraph F

20 Paragraph G

Questions 21-23

Instructions to follow

- Use the information in the passage to match the people (listed A-E) with opinions or deeds below.
- Write the appropriate letters, A-E, in boxes 21-23 on your answer sheet.

List of people

A Michael Thompson

B Graham Bodman

C Stuart Bracey

D James Lunday

A Dene Busby

21 Design should meet the need of mix-raced cultural background

A B C D E

22 for a better living environment, regulations and social control should be imperative

A B C D E

23 organising more community's activities helps to strengthen the relationship in the community

A B C D E

Questions 24-27

Instructions to follow

- Complete the following summary of the paragraphs of Reading Passage 2
- Choose **NO MORE THAN TWO WORDS** from the passage for each answer.
- Write your answers in boxes **24-27** on your answer sheet.

In the year 2002, the Talbot decided to raise housing standard, yet the plan was to build homes go much beyond the accommodation limit and people complain about the high living 24 ……

And as the various plans were complemented under the designs of many 25 …….. together, made house styles go with the part designed by individuals, matched tenants from a different culture. As for the finance, reconstruction program's major concern is to build a house within low 26 ……; finally, just as expert predicted, residents will agree on building a relatively conventional house in its own 27 ……, which provides considerable space to move around.

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Section 3

Instructions to follow

- You should spend about 20 minutes on Questions 28-40 which are based on Reading Passage 3.

Elephant communication

A. A postdoctoral fellow at Stanford University, O'Connell-Rodwell has come to Namibia's premiere wildlife sanctuary to explore the mysterious and complex world of elephant communication. She and her colleagues are part of a scientific revolution that began nearly two decades ago with the stunning revelation that elephants communicate over long distances using low-frequency sounds, also called infrasounds, that are too deep to be heard by most humans.

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B. As might be expected, the African elephant's ability to sense seismic sound may begin in the ears. The hammer bone of the elephant's inner ear is proportionally very large for a mammal, buy typical for animals that use vibrational signals. It may, therefore, be a sign that elephants can communicate with seismic sounds. Also, the elephant and its relative the manatee are unique among mammals in having reverted to a reptilian-like cochlear structure in the inner ear. The cochlea of reptiles facilitates a keen sensitivity to vibrations and may do the same in elephants.

C. But other aspects of elephant anatomy also support that ability. First, their enormous bodies, which allow them to generate low-frequency sounds almost as powerful as those of a jet takeoff, provide ideal frames for receiving ground vibrations and conducting them to the inner ear. Second, the elephant's toe bones rest on a fatty pad that might help

focus vibrations from the ground into the bone. Finally, the elephant's enormous brain lies in the cranial cavity behind the eyes in line with the auditory canal. The front of the skull is riddled with sinus cavities that may function as resonating chambers for vibrations from the ground.

D. How the elephants sense these vibrations is still unknown, but O'Connell-Rodwell who just earned a graduate degree in entomology at the University of Hawaii at Manoa, suspects the pachyderms are "listening" with their trunks and feet. The trunk may be the most versatile appendage in nature. Its uses include drinking, bathing, smelling, feeding and scratching. Both trunk and feet contain two kinds of pressure-sensitive nerve endings – one that detects infrasonic vibrations and another that responds to vibrations with slightly higher frequencies. For O'Connell-Rodwell, the future of the research is boundless and unpredictable: "Our work is really at the interface of geophysics, neurophysiology and ecology," she says. "We're asking questions that no one has really dealt with before."

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E. Scientists have long known that seismic communication is common in small animals, including spiders, scorpions, insects and a number of vertebrate species such as white-lipped frogs, blind mole rats, kangaroo rats and golden moles. They also have found evidence of seismic sensitivity in elephant seals – 2-ton marine mammals that are not related to elephants. But O'Connell-Rodwell was the first to suggest that a large land animal also in sending and receiving seismic messages. O'Connell-Rodwell noticed something about the freezing behavior of Etosha's six-ton bulls that reminded her of the tiny insects back in her lab. "I did my masters thesis on seismic communication in planthoppers," she says. "I'd put a male planthopper on a stem and playback a female call, and the male would do the same thing the elephants were doing: He would freeze, then press down on his legs, go forward a little bit, then freeze again. It was just so fascinating to me, and it's what got me to think, maybe there's something else going on

other than acoustic communication."

F. Scientists have determined that an elephant's ability to communicate over long distances is essential for its survival, particularly in a place like Etosha, where more than 2,400 savanna elephants range over an area larger than New Jersey. The difficulty of finding a mate in this vast wilderness is compounded by elephant reproductive biology. Females breed only when in estrus – a period of sexual arousal that occurs every two years and lasts just a few days. "Females in estrus make these very low, long calls that bulls home in on, because it's such a rare event," O'Connell-Rodwell says. These powerful estrus calls carry more than two miles in the air and maybe accompanied by long-distance seismic signals, she adds. Breeding herds also use low-frequency vocalizations to warn of predators. Adult bulls and cows have no enemies, except for humans, but young elephants are susceptible to attacks by lions and hyenas. When a predator appears, older members of the herd emit intense warning calls that prompt the rest of the herd to clump together for protection, then flee. In 1994, O'Connell-Rodwell recorded the dramatic cries of a breeding herd threatened by lions at Mushara. "The elephants got really scared, and the matriarch made these very powerful warning calls, and then the herd took off screaming and trumpeting," she recalls. "Since then, every time we've played that particular call at the water hole, we get the same response – the elephants take off."

G. Reacting to a warning call played in the air is one thing, but could the elephants detect calls transmitted only through the ground? To find out, the research team in 2002 devised an experiment using electronic equipment that allowed them to send signals through the ground at Mushara. The results of our 2002 study showed us that elephants do indeed detect warning calls played through the ground," O'Connell-Rodwell observes. "We expected them to clump up into tight groups and leave the area, and that's in fact what they did. But since we only played back one type of call, we couldn't really say whether

they were interpreting it correctly. Maybe they thought it was a vehicle or something strange instead of a predator warning."

H. An experiment last year was designed to solve that problem by using three different recordings – the 1994 warning call from Mushara, an anti-predator call recorded by scientist Joyce Poole in Kenya and an artificial warble tone. Although still analyzing data from this experiment, O'Connell-Rodwell is able to make a few preliminary observations: "The data I've seen so far suggest that the elephants were responding as I had expected. When the '94 warning call was played back, they tended to clump together and leave the water hole sooner. But what's really interesting is that the unfamiliar anti-predator call from Kenya also caused them to clump up, get nervous and aggressively rumble – but they didn't necessarily leave. I didn't think it was going to be that clear cut."

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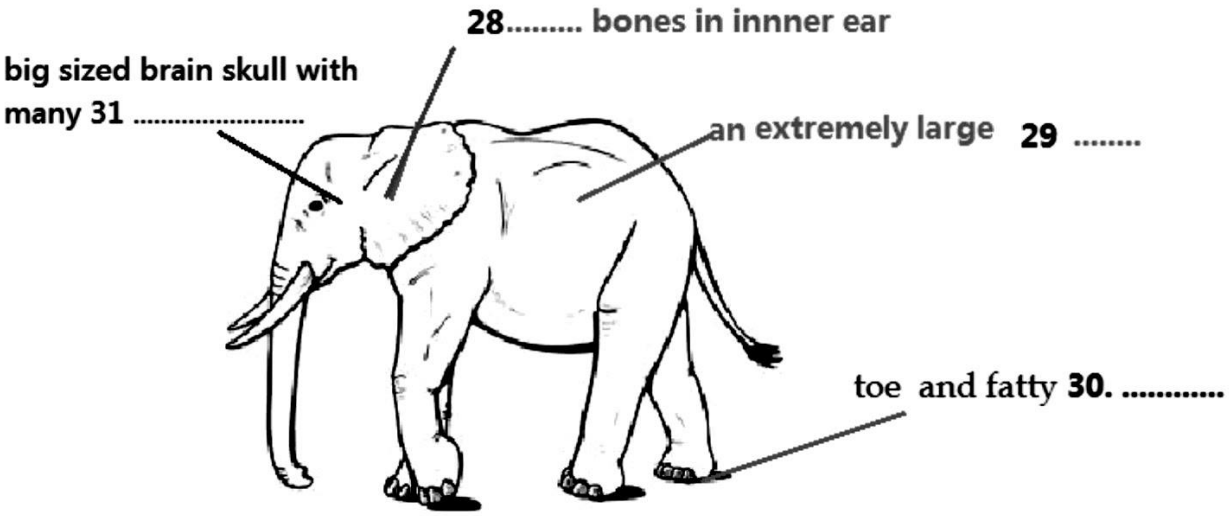
Questions 28-31

Instructions to follow

- Complete the following summary of the paragraphs of Reading Passage
- Using **NO MORE THAN THREE WORDS** from the Reading Passage for each answer.
- Write your answers in boxes **28-31** on your answer sheet.



Questions 32-38

Instructions to follow

- Complete the following summary of the paragraphs of Reading Passage.
- Using **NO MORE THREE WORDS OR A NUMBER** from the Reading Passage for each answer.
- Write your answers in boxes **32-38** on your answer sheet.

How the elephants sense these sound vibrations is still unknown, but O'Connell-Rodwell, a fresh graduate in entomology at the University of Hawaii, proposes that the elephants are "listening" with their 32....., by two kinds of nerve endings – that responds to vibrations with both 33..... frequency and slightly higher frequencies. O'Connell-Rodwell work is at the combination of geophysics, neurophysiology and 34....," and it also was the first to indicate that a large land animal also is sending and receiving 35....., O'Connell-Rodwell noticed the freezing behavior by putting a male planthopper communicative approach other than 36....."

Scientists have determined that an elephant's ability to communicate over long distances is essential, especially, when elephant herds are finding a 37....., or are warning of predators. Finally, the results of our 2002 study showed us that elephants can detect warning calls played through the 38....."

Questions 39-40

Instructions to follow

- Choose the correct letter, **A**, **B**, **C** or **D**.
- Write your answers in boxes **39-40** on your answer sheet.

39 According to the passage, it is determined that an elephant need to communicate over long distances for its survival

A When a threatening predator appears.

B When young elephants meet humans.

C When older members of the herd want to flee from the group.

D When a male elephant is in estrus.

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40 What is the author's attitude toward the experiment by using three different recordings in the paragraph:

A The outcome is definitely out of the original expectation

B The data can not be very clearly obtained

C The result can be somewhat undecided or inaccurate

D The result can be unfamiliar to the public

Answer Keys

Reading Test 1

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	TRUE	15	D	28	A
2	FALSE	16	A	29	D
3	NOT GIVEN	17	B	30	A
4	TRUE	18	D	31	B
5	Coconut shell	19	D	32	C
6	Soot	20	B	33	B
7	Liquid	21	C	34	autonomous
8	Heartwood	22	C	35	Non-human persons
9	Wing Bone	23	B	36	Habeas corpus
10	(the) forehead	24	A	37	protection
11	Chin (area)	25	A	38	all
12	Mother's ancestry	26	C	39	succeeded

13	Vertical lines	27	C	40	perceptions
14	triangles				

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Reading Test 2

Section 1	Section 2			Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	YES	14	ii	28	A
2	NO	15	vi	29	D
3	YES	16	iii	30	G
4	YES	17	iv	31	I
5	NOT GIVEN	18	C	32	FALSE
6	Brings success	19	E	33	TRUE
7	(very) insecure/jealous/envious	20	A	34	NOT GIVEN
8	Block	21	H	35	FALSE
9	Companies and enterprise	22	B	36	H
10	Co-operation and contacts	23	A	37	I
11	(the) academic world	24	B	38	A

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12	(the) stereotypical academic	25	A	39	B
13	Cambridge/around Cambridge/Cambridge in England	26	C	40	G
		27	A		

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Reading Test 3

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	C	14	E	27	B
2	B	15	G	28	C
3	A	16	A	29	F
4	D	17	C	30	A
5	B	18	F	31	starch
6	B	19	D	32	fermentation
7	NOT GIVEN	20	A	33	condensation
8	YES	21	S	34	polymer
9	NOT GIVEN	22	M	35	B
10	NO	23	S	36	C
11	F	24	(it has) double(d)/doubling	37	A
12	C	25	de-layering	38	D
13	E	26	Demographic trends	39	A

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				40	C

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Reading Test 4

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	FALSE	14	F	28	C
2	NOT GIVEN	15	C	29	F
3	NOT GIVEN	16	E	30	G
4	TRUE	17	D	31	A
5	FALSE	18	B	32	Genetically Modified Organisms/GMOs
6	tram	19	A	33	Skepticism
7	1954	20	Design(s)	34	Absurd
8	Beach volleyball	21	pathogens	35	ill health
9	environment	22	tuberculosis	36	L
10	Wealthy people	23	wards	37	F
11	manly	24	communal	38	G
12	Bondi	25	public	39	I

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13	Tiled roofs	26	miasmas	40	K
		27	cholera		

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Reading Test 5

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	FALSE	14	D	27	C
2	NOT GIVEN	15	F	28	B
3	FALSE	16	E	29	D
4	TRUE	17	C	30	A
5	NOT GIVEN	18	A	31	C
6	TRUE	19	D	32	F
7	NOT GIVEN	20	A	33	NOT GIVEN
8	The rich	21	C	34	TRUE
9	Commercial (possibilities)	22	C	35	FALSE
10	mauve	23	A	36	TRUE
11	Robert Pullar	24	C	37	B
12	France	25	C	38	A
13	Malaria	26	C	39	D

				40	C

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Reading Test 6

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	vi	14	E	27	B
2	v	15	G	28	C
3	viii	16	A	29	A
4	i	17	B	30	A
5	iv	18	H	31	YES
6	vii	19	B	32	NOT GIVEN
7	Thousands of years	20	B	33	NO
8	(tree) bark	21	C	34	NOT GIVEN
9	Overseas museum	22	A	35	YES
10	School walls	23	The poetics	36	NO
11	B	24	Tragedy	37	F
12	D	25	landmarks	38	B

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13	C	26	Flaws/weakness	39	A
				40	D

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Reading Test 7

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	E	14	v	27	YES
2	B	15	viii	28	NO
3	G	16	vi	29	YES
4	F	17	vii	30	NOT GIVEN
5	D	18	iii	31	NO
6	FALSE	19	i	32	Hot dry air
7	TRUE	20	ii	33	moist
8	NOT GIVEN	21	Equal opportunity	34	Infrared radiation
9	FALSE	22	Internal costs	35	Pure distilled water
10	NOT GIVEN	23	C	36	condenser
11	NOT GIVEN	24	C	37	fans

12	D	25	A	38	Solar panels
13	B	26	B	39	Construction costs
				40	Environmentally-friendly

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Reading Test 8

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	types	14	F	27	G
2	tunnels	15	A	28	C
3	areas	16	D	29	B
4	cracks	17	A	30	F
5	fractures	18	Genetic traits	31	G
6	passages	19	Heat loss	32	FALSE
7	streams	20	ears	33	FALSE
8	erosion	21	(insulating) fats	34	FALSE
9	A	22	(carbon) emissions	35	TRUE
10	E	23	B	36	TRUE
11	TRUE	24	C	37	NOT GIVEN
12	TRUE	25	A	38	C

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13	NOT GIVEN	26	C	39	C
				40	D

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Reading Test 9

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	NOT GIVEN	14	vi	27	dopamine
2	TRUE	15	ii	28	pleasure
3	FALSE	16	iv	29	caudate
4	TRUE	17	viii	30	Anticipatory phase
5	Mason	18	i	31	food
6	Holes	19	v	32	B
7	Metal/Iron Wedges	20	B	33	C
8	Split	21	E	34	A
9	Bricks	22	A	35	B
10	Heating	23	E	36	D
11	C	24	(national) newspaper	37	F

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12	E	25	Arms dealers	38	B
13	F	26	victory	39	E
				40	C

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Reading Test 10

Section 1	Section 2			Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	YES	14	A	27	YES
2	NOT GIVEN	15	D	28	NOT GIVEN
3	NO	16	A	29	NO
4	NOT GIVEN	17	C	30	NO
5	YES	18	D	31	YES
6	NOT GIVEN	19	C	32	controversial
7	NO	20	B	33	tapped
8	Rock	21	D	34	expensive
9	Teeth	22	B	35	competitive
10	Descendants	23	C	36	E
11	Canoes	24	NO	37	D
12	Trade winds	25	YES	38	B
13	Seabirds and Turtles	26	NOT GIVEN	39	A

				40	C

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Reading Test 11

Section 1	Section 2			Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	FALSE	14	word	28	iv
2	NOT GIVEN	15	syllable	29	vii
3	FALSE	16	Single sound/phoneme	30	iii
4	FALSE	17	TRUE	31	ii
5	TRUE	18	FALSE	32	ix
6	TRUE	19	FALSE	33	F
7	Chemical Engineering	20	TRUE	34	B
8	Ascanio Sobrero	21	FALSE	35	D
9	Gunpowder	22	TRUE	36	A
10	Stockholm	23	TRUE	37	FALSE
11	Detonator	24	C	38	NOT GIVEN

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12	Pneumatic Drill	25	B	39	TRUE
13	Cost	26	E	40	TRUE
		27	A		

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Reading Test 12

Section 1	Section 2			Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	85 DBA	14	F	27	F
2	High frequency	15	C	28	B
3	Stomach problems	16	D	29	E
4	Noise maps/maps	17	B	30	D
5	E	18	H	31	A
6	D	19	B	32	C
7	C	20	B	33	Mantis Shrimp
8	D	21	E	34	Panoramic camera
9	A	22	B	35	Sahara Desert
10	B	23	incredible	36	Polarized light
11	D	24	interest	37	D

12	C	25	survey	38	A
13	D	26	antidote	39	F
				40	C

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Reading Test 13

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	TRUE	14	C	27	D
2	FALSE	15	A	28	A
3	NOT GIVEN	16	B	29	G
4	TRUE	17	F	30	B
5	D	18	D	31	H
6	G	19	D	32	F
7	F	20	B	33	A
8	D	21	A	34	D
9	D	22	C	35	C
10	A	23	YES	36	FALSE
11	A	24	NO	37	NOT GIVEN
12	B	25	NOT GIVEN	38	TRUE
13	C	26	NOT GIVEN	39	TRUE
				40	FALSE

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Reading Test 14

Section 1	Section 2			Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	TRUE	14	Nearest star	27	E
2	FALSE	15	mass	28	B
3	FALSE	16	radiation	29	G
4	FALSE	17	density	30	D
5	TRUE	18	pressure	31	A
6	TRUE	19	hydrogen	32	H
7	NOT GIVEN	20	The radiation zone	33	F
8	46	21	The photosphere	34	C
9	Human eye/ human eye accommodation	22	The corona	35	A
10	Indo-European	23	6 billion years	36	C

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11	Richard Brocklesby	24	(a) Planetary energy	38	F
12	Royal Institution	25	(the) magnetic energy	39	H
13	Gas lighting	26	Power cuts	40	D

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Reading Test 15

Section 1	Section 2			Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	H	14	i	28	misidentified
2	C	15	v	29	emotions
3	B	16	ii	30	Cultural background
4	I	17	viii	31	isolated
5	D	18	vi	32	exposed
6	A	19	iii	33	C
7	Two decades	20	vii	34	A
8	Crowd/noise	21	1950	35	D
9	Invisible (disability/disabilities)	22	Shy/shyness	36	H
10	Objective 3	23	starvation	37	D
11	A	24	Native (fish)	38	B
12	C	25	Partnership project/network	39	B

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			(of sites)/partnership project network		
13	C	26	Otter and brown-hare	40	D
		27	B		

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Reading Test 16

Section 1		Section 2		Section 3	
Question	Answer	Question	Answer	Question	Answer
1	B	15	FALSE	29	K
2	I	16	NOT GIVEN	30	D
3	C	17	TRUE	31	G
4	E	18	TRUE	32	C
5	G	19	NOT GIVEN	33	L
6	H	20	FALSE	34	M
7	A	21	TRUE	35	B
8	D	22	Europe and Asia	36	D
9	Naringin	23	John Rae	37	F
10	Poisonous	24	Scurvy	38	C
11	Supertasters	25	Sick books	39	G
12	Tastebuds	26	Accidents and Injuries	40	H
13	A	27	B		

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14	D	28	A

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Reading Test 17

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	D	14	Tree	27	E
2	F	15	Sheep	28	D
3	G	16	String	29	C
4	A	17	Government	30	B
5	C	18	Steal	31	G
6	B	19	Grease	32	F
7	E	20	TRUE	33	F
8	FALSE	21	NOT GIVEN	34	E
9	NOT GIVEN	22	FALSE	35	D
10	NOT GIVEN	23	FALSE	36	A
11	TRUE	24	NOT GIVEN	37	Chickens
12	Memory	25	TRUE	38	Adenovirus36/AD-36

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13	Functions	26	FALSE	39	Gene
				40	Vaccine

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Reading Test 18

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	TRUE	14	B	27	D
2	NOT GIVEN	15	E	28	A
3	TRUE	16	A	29	C
4	FALSE	17	D	30	B
5	FALSE	18	B	31	Light Sleep
6	NOT GIVEN	19	TRUE	32	Brain
7	Honeymoon	20	TRUE	33	Smaller, faster waves
8	Similarities	21	NOT GIVEN	34	Deep Sleep
9	One-Month	22	FALSE	35	Breathing
10	Enthusiasm	23	NOT GIVEN	36	Deteriorate
11	Clues	24	Headspace	37	Metabolic Rate
12	Skills	25	Filter	38	Torpor

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13	Adaption	26	Needle	39	Da
				40	Circadian Rhythm

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Reading Test 19

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	E	14	D	27	(Low Pressure) Water
2	C	15	G	28	viii
3	H	16	B	29	ix
4	B	17	E	30	vi
5	C	18	C	31	xi
6	B	19	B	32	i
7	B	20	B/D	33	iii
8	A	21	B/D	34	Epicarp
9	FALSE	22	B/D	35	Mesocarp
10	NOT GIVEN	23	B/D	36	Endocarp
11	FALSE	24	Social History	37	Wet milled
12	TRUE	25	Tag	38	Overnight

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13	TRUE	26	Protective Environment	39	Raked (many times)
				40	Customer's Specifiations

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Reading Test 20

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	D	14	A	27	YES
2	C	15	C	28	YES
3	C	16	C	29	NO
4	B	17	D	30	NOT GIVEN
5	Microwave dish	18	E	31	NO
6	Accelerometers	19	D	32	D
7	Steel girders	20	TRUE	33	C
8	Flange	21	TRUE	34	A
9	C	22	NOT GIVEN	35	B
10	H	23	NOT GIVEN	36	F
11	G	24	TRUE	37	D
12	B	25	NOT GIVEN	38	I
13	E	26	C	39	H

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	40	C

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Reading Test 21

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	YES	14	H	28	7
2	YES	15	J	29	5
3	NOT GIVEN	16	I	30	8
4	NO	17	K	31	3
5	YES	18	G	32	C
6	C	19	NOT GIVEN	33	B
7	D	20	TRUE	34	A
8	B	21	TRUE	35	B
9	D	22	FALSE	36	D
10	A	23	FALSE	37	Without leather
11	B	24	In the 1960s	38	Boots
12	C	25	Tanzania	39	Very quiet

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13	A	26	Close observation	40	Sports
		27	Cultural origin		

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Reading Test 22

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	Timber and stone	14	D	27	V
2	Modernism	15	A	28	Ii
3	International style	16	C	29	Iii
4	Multistorey housing	17	TRUE	30	Viii
5	Preservation	18	FALSE	31	NOT GIVEN
6	Hi-tech	19	TRUE	32	TRUE
7	Co-existence style	20	FALSE	33	FALSE
8	G	21	TRUE	34	FALSE
9	F	22	Most local residents	35	NOT GIVEN
10	H	23	Commercial districts	36	TRUE

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11	C	24	Amphoras	37	Growing population
12	D	25	Field season	38	Racist assumption
13	B	26	Scholars	39	Archeological and Historical
				40	Inhuman behaviour

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Reading Test 23

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	Physiological	14	Rhymes, stories	27	Iv
2	Knowledge and experience	15	America	28	Xii
3	Direct realism	16	Folklore	29	Ii
4	C	17	Fairy-tale/Fairy-tale stories	30	X
5	B	18	Adventures	31	I
6	D	19	C	32	Ix
7	A	20	A	33	V
8	D	21	E	34	Vii
9	B	22	FALSE	35	C
10	A	23	TRUE	36	B

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11	B	24	NOT GIVEN	37	A
12	A	25	TRUE	38	Yuri Larin
13	C	26	TRUE	39	Colour
				40	Family

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Reading Test 24

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	E	14	Annual costs	27	NO
2	C	15	Turnover costs	28	NOT GIVEN
3	F	16	Plan	29	YES
4	D	17	Guest satisfaction	30	NOT GIVEN
5	F	18	Savings	31	YES
6	B	19	NOT GIVEN	32	NO
7	17 Years	20	YES	33	A
8	Backpack	21	YES	34	C
9	Interact with	22	A	35	D
10	Facial Expressions	23	D	36	D
11	Cognition	24	E	37	A
12	Sensors	25	H	38	H

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13	Intelligence	26	J	39	E
				40	B

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Reading Test 25

Section 1		Section 2		Section 3	
Question	**Answer**	**Question**	**Answer**	**Question**	**Answer**
1	D	14	vi	28	Hammer
2	B	15	viii	29	Body
3	C	16	v	30	Pad
4	E	17	iii	31	Sinus cavities
5	B	18	ix	32	Trunk and feet
6	B	19	vii	33	Infrasonic
7	A	20	ii	34	Ecology
8	B	21	D	35	Seismic messages
9	D	22	B	36	Acoustic communication
10	C	23	C	37	Mate
11	TRUE	24	Density	38	Ground
12	FALSE	25	Architects	39	A

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13	NOT GIVEN	26	Budgets	40	C
		27	Garden		

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