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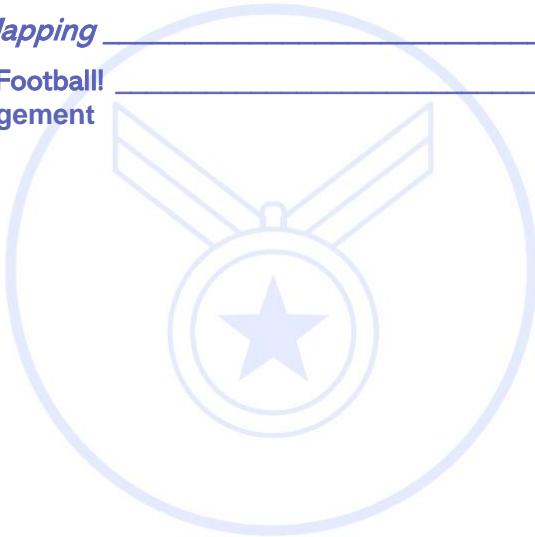
## IELTS ACADEMIC READING PASSAGES AUGUST- DECEMBER 2022

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## **OVERVIEW OF READING:**

It takes **60 minutes total**; 20 minutes per section.

This total includes the time to transfer your answers from your Question Sheet to the Answer Sheet

It has **three different sections** with different types of passages: The 3 texts are longer and more complex than for general candidates. The texts are of an academic nature and taken from books, magazines, and journals. It has **40 questions/items total**

## **TYPES OF QUESTIONS:**

### The Three Categories of IELTS Reading Question Types

- IELTS Reading Question Types: Matching

[Matching Sentence Endings](#)

[Matching Headings](#)

[Matching Features](#)

[Matching Information](#)

- “Answer the Question” Types

[True/False/Not Given and Yes/No/Not Given Questions](#)

[Short Answer](#)

[Multiple Choice](#)

- “Completion” IELTS Reading Question Types

[Sentence Completion](#)

[Diagram Completion](#)

[Flow-Chart Completion](#)

[Summary Completion](#)

## Table Completion

### METHODS TO SOLVE EACH TYPE: TECHNIQUES AND TIPS:

#### 1. MATCH HEADING:

- Learn to recognise paragraph structure. This often involves spotting the relationship between the main ideas and supporting ideas in a paragraph.  
Paragraphs are most frequently descending, i.e. they begin with the main idea somewhere near the start and develop from there, although some, frequently the first and last paragraphs of a text, are ascending - the main idea is located towards the end.
- When matching paragraph headings, you have to choose the heading which best summarises the main idea of the paragraph. This task requires you to decide what the main topic or point of each paragraph is. This task tests your ability to understand general information.
- An option may refer to something that is mentioned in a certain paragraph of the text, but it may not be the correct answer because it is not the main point or topic of that paragraph.

- The right heading rightly covers the entire paragraph while the 'distractors' do not correspond to any of the paragraphs in the reading passage or cover only a part of the paragraph hence they are not the main idea of the whole paragraph.
- Remember you must stick to the main idea of the whole paragraph and not be distracted by the examples, explanations etc.
- Be aware of 'word spotting'. Do not choose a heading as your answer simply because it contains a word that also appears in a particular paragraph of the text. You need to focus on the whole idea of each paragraph.

#### STRATEGY:

- ✓ FIRST READ THE paragraph and get a one-line summary of that para.
- ✓ Then match that summary line to the headings and choose most relatable one with help of comprehension skill, nouns and adjectives.
- ✓ Once done strike that out to avoid confusion.
- ✓ Now next para and so on

#### 2. MATCH FEATURES:

- There are many possibilities but matching people to statements is the most common. You must relate information to several people, places, theories, etc.
  - You match statements to names in a box. The statements are usually numbered 1,2,3 etc and the names in the box are usually labelled A,B,C, etc. There may not be a matching statement for every item in the box, while you may need to use some items in the box more than once.
  - Start with the names in the box because the items in the box match the order in which they occur in the text.
  - There may be distractors that do not match any item.
  - Sometimes the names are in more than one place.
  - Read all the statements rather and mark the nouns, adjectives and verb than just one at a time. You may then be able to match which ever comes first and save time.
- 

### STRATEGY:

- ✓ **read the instructions**
- ✓ **Carefully read all the given features and highlight keywords like noun adjectives and verbs.**
- ✓ **Scan the passage and look for names in the box**
- ✓ **Read those line which has information about the names**

- ✓ You're now ready to match the features with suitable questions by relating the keyword synonyms and seeing what is being related to which name.

### 3. MATCH INFORMATION WITH PARA:

- Here you must match given sentences to the paragraph which just talk about it.
- You need not go for deep reading here as you just ned to locate the info in para and not say whether its true or false.
- Skimming works best in this kind of question because you ned to understand which is talking about what information.
- Do note they do not come in order.

#### STRATEGY:

- ✓ Mark all the important words in every statement quickly like nouns, adjectives.

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- ✓ Understand the information in your mother tongue as to exactly what is it talking about?
- ✓ Then skim for the word family or synonyms of the keyword and relate your understanding of info to the passages.

- ✓ Once you locate the keywords, match the idea and the line to see if they are talking the same information.
- ✓ Do not search one by one as they are not in order. Go with the keywords as and when they appear in the passages and finish that particular question.

#### 4. MATCH SENTENCE ENDING:

These type of match questions requires you to complete a meaningful sentence which is divided into half. That is half sentence will be given and rest you need to choose from number of choices. The questions usually come in order, but not the options.

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- ✓ Read the incomplete sentences first
- ✓ Identify and Highlight keywords like **names, places, year, etc.**,
- ✓ Predict the appropriate endings for each incomplete sentence
- ✓ Read the sentence endings to get the general meaning
- ✓ Eliminate the ones which do not match the keywords or your idea of the sentence.

#### 5. TRUE FALSE/ YES NO NOT GIVEN

- ✓ **STEP-I: Identify and underline the keywords provided in the statement**

- ✓ **STEP-II: Mark the similar words related to the keywords in the passage**
- ✓ **STEP-III: Match the keywords and the similar words and that line and the next line alone because answer will be in the line of keywords.( do not waste time by reading whole passage or para)**
- ✓ **STEP-IV: Now, evaluate whether the keywords and similar words are the same, synonyms, opposites or if there's no match**
- ✓ **STEP-V: At last, decide whether the statement is True if all matches, False if its opposite or different or Not Given if even one information is missing.**

**NOTE:** In true false and yes no focus more on adverbs and its kind along with model verbs as they tend to change your answer.

## 6. MCQ

IELTS MCQ section will not carry the regular type questions we have encountered before. There are some specific types.

For example the question types might be like **Answer:**

- **1 out of 4 options**
- **2 out of 4 options**
- **3 out of 7 options**

- Double-check or cross-check is essential to make sure that you will get a point
- The questions will be arranged in order of the text, so the answer to the next question will be below the previous one.
- Facts and opinions will be both asked. To distinguish them, facts are always true and cannot be disproved but opinions are what people think.

Scanning technique or elimination technique:

- ✓ Read the question first and at least underline two key words in the question and start searching for them.
- ✓ The good thing with this question type is – questions will be in a sequence in the passage. Once you found the first answer, the rest of the questions will come in a sequence in the passage.
- ✓ So, you don't have to go searching for them. Try to understand the meaning of the sentence and options. Some of the options will be contradicting the statement in the passage so it makes easy to eliminate them.

Elaborative technique:

- ✓ **Skim the text**
- ✓ **Identify and Underline keywords in questions and choices**
- ✓ **Differentiate different choices**
- ✓ **Locate the answers using keywords**
- ✓ **Read the identified part in detail**
- ✓ **Go back to the questions and choose the final answer**

## 7. SHORT ANSWER

- Make sure that your answer doesn't exceed the word limit. It's super-important.
- The order of questions can help you. Answer for question 4 will be between answers for questions 3 and 5 in the text.
- If text introduces new terms, some answers are likely to be among them.

### STRATEGY:

- ✓ **Skim over the text.**
- ✓ **Read the question and find the paragraph, which is likely to contain the answer. Use key words to navigate.**
- ✓ **Read attentively the paragraph you've found, searching for the answer.**
- ✓ **Once you've found the answer, check if it doesn't exceed the word limit.**
- ✓ **Repeat this strategy with other questions.**

## 8. SENTENCE COMPLETION

Always understand the instructions and follow them without fail.

After reading the instructions and gained an understanding of them, proceed with reading the title underlining the title keywords.

It is highly essential to have a look at these keywords at first, as they carry highly crucial information that helps you to locate the answers accurately. If no title given read the sentence and understand what exactly it says as comprehending the question helps to understand and predict the answer to write.

### STRATEGY:

- ✓ **Read the text.**
  - ✓ **Use key words to find the needed paragraph.**
  - ✓ **Make sure you understand the question statement and search for sentence with similar meaning.**
  - ✓ **Once you've found the answer, check if it fits into the statement grammatically and doesn't exceed the word limit.**
  - ✓ **Repeat this strategy with other questions.**
- 

## 9. SUMMARY COMPLETION

short summary of information from part of the text that's been set for your reading test.

For summary completion questions, you will be given:

- 1) The text.**
- 2) A summary of information from a section of the text with some gaps where words have been missed out.**

You may also be given a list of words to fill the gaps with.

You will be required to do one of the following tasks:

- a) Fill in the gaps with words from the word list**

or

- b) Fill in the gaps with words from the text.**

## STRATEGY

- ✓ Carefully read the instructions taking particular note of where you should get the missing words from – a word list or the text. If it's the text, note the word limit for your answer, e.g. no more than two.
- ✓ Skim read the summary to get a general understanding of what it's about.
- ✓ Next, read the summary in more detail and try to predict the type of word needed to fill each gap, e.g. verb, noun, adjective, and what that word might be. Don't spend too long on this but it will save you time later if you do it.
- ✓ If the question includes a list of words, see if you can guess any answers. You may be able to narrow it down to 2 or 3. There will be others that will obviously be wrong.
- ✓ The summary will normally relate to one section of the text, probably 2-3 paragraphs. Your next job is to identify this.

- ✓ Pick out a few key words from the summary to scan for. Names, numbers, places or dates are ideal if there are any in the summary as these will be easy to spot. Remember that synonyms could be used. When you've made your selection, scan the text for them.
- ✓ Read the first sentence of the summary with a gap in it. Try to work out what form of word will fit, e.g. an adjective, the past tense of a verb, a countable noun. You may even be able to predict the missing word itself or a synonym.
- ✓ Identify one or two key words and scan the section of text for them, watching out for synonyms and paraphrasing.
- ✓ When you've found the part of the text with the answer in, read it in detail to identify the word you need, either in the text itself or from the word list.
- ✓ Check your answer to ensure that the sentence is grammatically correct.
- ✓ Repeat this process for the rest of the missing words.

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## 10. FLOW CHART AND TABLE COMPLETION

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### Strategy

- ✓ Read the instructions carefully and note how many words you're required to write in the gaps, e.g. NO MORE THAN TWO WORDS.

- ✓ Look at the layout of the table and work out the best way to read it, particularly noting any headings that will give you clues as to its subject and content.
  
  - ✓ Quickly read through the sentences or phrases with gaps in to get a general idea of what information you'll be looking for in the text. Try and work out what type of word is missing in each case, e.g. a noun, a verb, an adjective.
  
  - ✓ Skim read the text to get a general understanding of what it's about and write key words or ideas beside each paragraph. This will help you to quickly find the information again later.
  
  - ✓ Go back to the table and read the first phrase or sentence with a gap in it. Select key words and scan the text for them in order to locate the paragraph that contains the answer.
  
  - ✓ The notes you wrote beside the paragraphs may also help you to identify the correct one.
- 
- ✓ Read the section of text you've identified in detail to find the answer. Remember that synonyms and paraphrasing may have been used.
  
  - ✓ Check that your answer makes sense, is grammatically correct and doesn't go over the word limit.

- ✓ Write your answer on the answer sheet, making sure you spell it correctly. Repeat the process to fill in the remaining gaps.

## 11. DIAGRAM COMPLETION

### STRATEGY

- ✓ Read the instructions carefully. First, find out whether you have to label the diagram with words from the text or from a word list.
- ✓ If the words come from the text, note how many words you're required to write, e.g. ONE WORD.
- ✓ Briefly look at the diagram and try to get a general understanding of what it's showing. There will be clues in headings, figures and any labels already added.
- ✓ PREDICT THE KIND OF WORD NEEDED.
- ✓ Scan the text for key words. This will identify where the answers are located.
- ✓ Read the relevant section of text in detail to find each answer. And copy the exact word as in passage without changing.

Now use these strategies and try to solve the below real exam passages for better preparation.

## TEST 1: Homeopathy Overdosing on nothing

{A} An international protest this week aims to demonstrate the truth about homoeopathy -that there's literally nothing in it, says Martin Robbins AT 10.23 am on 30 January, more than 300 activists in the UK, Canada, Australia and the US will take part in a mass homoeopathic "overdose". Skeptics will publicly swallow an entire bottle of homoeopathic pills to demonstrate to the public that homoeopathic remedies, the product of a scientifically unfounded 18th-century ritual, are simply sugar pills. Many of the sceptics will swallow 84 pills of Arsenicum album, a homoeopathic remedy based on arsenic which is used to treat a range of symptoms, including food poisoning and insomnia. The aim of the "10:23" campaign, led by the Merseyside Skeptics Society, based in Liverpool, UK, is to raise public awareness of just exactly what homeopathy is, and to put pressure on the UK's leading pharmacist, Boots, to remove the remedies from sale. The campaign is called 10:23in honor of the Avogadro constant (approximately  $6 \times 10^{23}$ , the number of atoms or molecules in one mole of a substance), of which more later.

{B} That such a protest is even necessary in 2010 is remarkable, but somehow the homeopathic industry has not only survived into the 21st century, but prospered. In the UK alone more than £40 million is spent annually on homoeopathic treatments, with £4 million of this being sucked from the National Health Service

budget. Yet the basis for homoeopathy defies the laws of physics, and high-quality clinical trials have never been able to demonstrate that it works beyond the placebo effect.

{C} The discipline is based on three “laws”; the law of similars, the law of infinitesimals and the law of succession. The law of similars states that something which causes your symptoms will cure your symptoms, so that, for example, as caffeine keeps you awake, it can also be a cure for insomnia. Of course, that makes little sense, since drinking caffeine, well, keeps you awake. Next is the law of infinitesimals, which claims that diluting a substance makes it more potent. Homoeopaths start by diluting one volume of their remedy -arsenic oxide, in the case of Arsenicum album -in 99 volumes of distilled water or alcohol to create a “centesimal”. They then dilute one volume of the centesimal in 99 volumes of water or alcohol, and so on, up to 30 times. Application of Avogadro’s constant tells you that a dose of such a “30C” recipe is vanishingly unlikely to contain even a single molecule of the active ingredient. The third pillar of homoeopathy is the law of succession. This states-and I’m not making this up -that by tapping the liquid in a special way during the dilution process, a memory of the active ingredient is somehow imprinted on it. This explains how water is able to carry a memory of arsenic oxide, but apparently not of the contents of your local sewer network.

{D} The final preparation is generally dropped onto a sugar pill which the patient swallows. Homeopaths claim that the

application of these three laws results in a remedy that, even though it contains not a single molecule of the original ingredient, somehow carries an “energy signature” of it that nobody can measure or detect. Unsurprisingly, when tested under rigorous scientific conditions, in randomized, controlled and double-blind trials, homoeopathic remedies have consistently been shown to be no better than a placebo. Of course, the placebo effect is quite powerful, but it’s a bit like justifying building a car without any wheels on the basis that you can still enjoy the comfy leather seats and play with the gear shift.

{E} Even some retailers who sell the treatments have admitted there is no evidence that they work. In November, Paul Bennett, the superintendent pharmacist at Boots, appeared before the UK parliament’s Commons Science and Technology Committee’s “evidence check” on homoeopathy. He was questioned by Member of Parliament Phil Willis, who asked: “Do they work beyond the placebo effect?” “I have no evidence before me to suggest that they are efficacious,” Bennett replied. He defended Boots’s decision to sell homoeopathic remedies on the grounds of consumer choice. “A large number of our consumers actually do believe they are efficacious, but they are licensed medicinal products and, therefore, we believe it is right to make them available,” he said.

{F} You might agree. You might also argue that homoeopathy is harmless: if people want to part with their money for sugar pills

and nobody is breaking the law, why not let them? To some extent that's true -there's only so much damage you can do with sugar pills short of feeding them to a diabetic or dropping a large crate of them on someone's head. However, we believe there is a risk in perpetuating the notion that homoeopathy is equivalent to modern medicine. People may delay seeking appropriate treatment for themselves or their children.

{G} We accept that we are unlikely to convince the true believers. Homoeopathy has many ways to sidestep awkward questions, such as rejecting the validity of randomized controlled trials, or claiming that homoeopathic remedies only work if you have symptoms of the malady they purport to cure. Our aim is to reach out to the general public with our simple message: "There is nothing in it". Boots and other retailers are perfectly entitled to continue selling homoeopathic remedies if they so wish and consumers are perfectly entitled to keep on buying them. But hopefully the 10:23 campaign will ram home our message to the public. In the 21st century, with decades of progress behind us, it is surreal that governments are prepared to spend millions of tax pounds on homoeopathy. There really is nothing in it.

### **Questions 14-20 IELTSFever Academic IELTS Reading Test 138**

*Choose the correct heading for each paragraph from the list of heading below. Write the correct number, i-ix, in boxes 14-20 on your answer sheet.*

#### **List of Headings**

- (i) The definition of three laws
- (ii) Quoting three laws to against the homeopathy
- (iii) There are many methods of avoiding answering ambiguous questions.
- (iv) The purpose of illustrating the symptoms of homeopathy
- (v) The constant booming of homeopathy
- (vi) Some differences between homeopathy and placebo
- (vii) Placebo is better than homeopathy
- (viii) A example of further demonstrating the negative effect of homeopathy.
- (ix) The purpose of staging a demonstration to against homeopathy

(14) Paragraph A.

(15) Paragraph B

(16) Paragraph C

(17) Paragraph D

(18) Paragraph E

(19) Paragraph F

(20) Paragraph G

### Questions 21-27

*Do the following statements agree with the information given in the IELTSFever Academic IELTS Reading Test 138 Reading passage 2? In boxes 21-27 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

- (21) Skeptics planning to hold a demonstration in the “10.23” campaign is against UK’s leading pharmacist, Boots.
- (22) National Health Service budget gained a small portion of homoeopathic industry
- (23) The example of Caffeine is to present that homoeopathy resists the laws of similars.
- (24) Instilling the idea to people that homoeopathy is equal to modern medicine poses danger.
- (25) Paul Bennett claimed effectiveness of taking the homoeopathic medicine is proved
- (26) The adoption of homoeopathy mainly contributes to the delay in seeking appropriate treatment for themselves or their children.
- (27) The campaign has exerted pressure on Boots and other retailers.

Answers:

14	IX
15	V
16	I

17	VII
18	IV
19	VIII
20	III

21. true
22. false
23. true
24. true
25. false
26. false
27. not given



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TEST 2: 8 JAN 2022

### **Food Advertising on Children**

The Food Standards Agency commissioned this review to examine the current research evidence on:

- *the extent and nature of food promotion to children*
- *the effect, if any, that this promotion has on their food knowledge, preferences and behaviour.*

{A} Children's food promotion is dominated by television advertising, and the great majority of this promotes the so-called "Big Four" of pre-sugary breakfast cereals, soft drinks, confectionery, and savoury snacks. In the last ten years advertising for fast food, outlets have rapidly increased. There is some evidence that the dominance of television has recently begun to wane. The importance of strong, global branding reinforces a need for multi-faceted communications combining television with merchandising, 'tie-ins' and point of sale activity. The advertised diet contrasts sharply with that recommended by public health advisors, and themes of fun and fantasy or taste, rather than health and nutrition, are used to promote it to children. Meanwhile, the recommended diet gets little promotional support.

{B} There is plenty of evidence that children notice and enjoy food promotion. However, establishing whether this actually influences them is a complex problem. The review tackled it by looking at studies that had examined possible effects on what children know about food, their food preferences, their actual food behaviour (both buying and eating), and their health outcomes (**e.g., obesity or cholesterol levels**). The majority of studies examined food advertising, but a few examined other

forms of food promotion. In terms of nutritional knowledge, food advertising seems to have little influence on children's general perceptions of what constitutes a healthy diet, but, in certain contexts, it does have an effect on more specific types of nutritional knowledge. For example, seeing **soft drink** and cereal adverts reduced primary-aged children's ability to correctly determine whether certain products contained real fruit. The review also found evidence that food promotion influences children's food preferences and their purchase behaviour. A study of primary school children, for instance, found that exposure to advertising influenced which foods they claimed to like; and another showed that labelling and signage on a vending machine had an effect on what was bought by secondary school pupils. Several studies have also shown that food advertising can influence what children eat. One, for example, showed that advertising influenced a primary class's choice of daily snack at playtime.

### {C}

The review also found evidence that food promotion influences children's food preferences and purchase behaviour. A study of primary school children, for instance, found that exposure to advertising influenced which foods they claimed to like; and another showed that labelling and signage on a vending machine had an effect on what was bought by secondary school pupils. A number of studies have also shown that food advertising can influence what children eat. One, for example, showed that

advertising influenced a primary class's choice of daily snack at playtime.

{D} The next step of trying to establish whether or not a link exists between food promotion and diet or obesity is extremely difficult as it requires research to be done in real-world settings. A number of studies have attempted this by using the amount of television viewing as a proxy for exposure to television advertising. They have established a clear link between television viewing and diet, obesity, and cholesterol levels. However, it is impossible to say whether this effect is caused by the advertising, the sedentary nature of television viewing, or snacking that might take place whilst viewing. One study resolved this problem by taking a detailed diary of children's viewing habits. This showed that the more food adverts they saw, the more snacks and calories they consumed.

{E} Thus, the literature does suggest food promotion is influencing children's diet in a number of ways. This does not amount to proof; as noted above, incontrovertible proof simply isn't attainable with this kind of research. Nor do all studies point to this conclusion; several have not found an effect. In addition, very few studies have attempted to measure how strong these effects are relative to other factors influencing children's food choices. Nonetheless, many studies have found clear effects, and they have used sophisticated methodologies that make it

possible to determine that i) these effects are not just due to chance; ii) they are independent of other factors that may influence diets, such as parents' eating habits or attitudes; and iii) they occur at a brand and category level.

{F} Furthermore, two factors suggest that these findings actually downplay the effect that food promotion has on children. First, the literature focuses principally on television advertising; the cumulative effect of this combined with other forms of promotion and marketing is likely to be significantly greater. Second, the studies have looked at direct effects on individual children and underestimate indirect influences. For example, promotion for fast food outlets may influence the child and encourage parents to take them for meals and reinforce the idea that this is normal and desirable behaviour.

{G} This does not amount to proof of an effect, but in our view, does provide sufficient evidence to conclude that an effect exists. The debate should now shift to what action is needed and specifically to how the power of commercial marketing can be used to bring about improvements in young people's eating.

### ***Questions 1-7***

**Reading Passage 1 has seven paragraphs, A-G.**

**Choose the most suitable heading for paragraphs A-G from the list of headings below. Write the appropriate number, i-x, in boxes 1-7 on your answer sheet.**

## List of Headings

- i General points of agreements and disagreements of researchers
- ii How much children really know about food
- iii Need to take action
- iv Advertising effects of the “Big Four.”
- V Connection of advertising and children’s weight problems
- vi Evidence that advertising affects what children buy to eat
- vii How parents influence children’s eating habits
- Viii Advertising’s focus on unhealthy options
- ix Children often buy what they want
- x Underestimating the effects advertising has on children

- (1) Paragraph A
- (2) paragraph B
- (3) Paragraph C
- (4) Paragraph D
- (5) Paragraph E
- (6) Paragraph F
- (7) Paragraph G

***Questions 8-13***

**Do the following statements agree with the views of the writer in**

YES	if the statement agrees with the writer
NO	if the statement does not agree with the writer
NOT GIVEN	if there is no information about this in the passage

**(8)** There is little difference between a healthy diet recommended by advisors and a diet prompted in food advertisements.

**(9)** TV advertising has successfully taught children nutritional knowledge about vitamins and others.

**(10)** It is hard to decide which aspect accompanied by TV viewing has caused weight problems or other detrimental effects on children.

**(11)** The preference of food for children is affected by their age and gender.

**(12)** The investigation primarily for food promotion on TV advertising tend to be partial and incomplete

**(13)** Wealthy parents tend to buy more “sensible food” for their children.

## Answers

- (1) VIII
- (2) II
- (3) VI
- (4) V
- (5) I
- (6) X
- (7) III
- (8) NO
- (9) NO
- (10) YES
- (11) NOT GIVEN
- (12) YES
- (13) NOT GIVEN

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## TEST 3:

### Travel Books

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There are many reasons why individuals have travelled beyond their own societies. Some travellers may have simply desired to satisfy curiosity about the larger world. Until recent times,

however, travellers did start their journey for reasons other than mere curiosity. While the travellers' accounts give much valuable information on these foreign lands and provide a window for the understanding of the local cultures and histories, they are also a mirror to the travellers themselves, for these accounts help them to have a better understanding of themselves.

Records of foreign travel appeared soon after the invention of writing, and fragmentary travel accounts appeared in both Mesopotamia and Egypt in ancient times. After the formation of large, imperial states in the classical world, travel accounts emerged as a prominent literary genre in many lands, and they held especially strong appeal for rulers desiring useful knowledge about their realms. The Greek historian Herodotus reported on his travels in Egypt and Anatolia in researching the history of the Persian wars. The Chinese envoy Zhang Qian described much of central Asia as far west as Bactria (modern-day Afghanistan) on the basis of travels undertaken in the first century BCE while searching for allies for the Han dynasty. Hellenistic and Roman geographers such as Ptolemy, Strabo, and Pliny the Elder relied on their own travels through much of the Mediterranean world as well as reports of other travellers to compile vast compendia of geographical knowledge.

During the post-classical era (about 500 to 1500 CE), trade and

pilgrimage j? emerged as major incentives for travel to foreign lands. Muslim merchants sought trading opportunities throughout much of the eastern hemisphere. They described lands, peoples, and commercial products of the Indian Ocean basin from East Africa to Indonesia, and they supplied the first written accounts of societies in sub-Saharan West Africa. While merchants set out in search of trade and profit, devout Muslims travelled as pilgrims to Mecca to make their hajj and visit the holy sites of Islam. Since the prophet Muhammad's original pilgrimage to Mecca, untold millions of Muslims have followed his example, and thousands of hajj accounts have related their experiences. East Asian travellers were not quite so prominent as Muslims during the post-classical era, but they too followed many of the highways and sea lanes of the eastern hemisphere. Chinese merchants frequently visited South-East Asia and India, occasionally venturing even to East Africa, and devout East Asian Buddhists undertook distant pilgrimages. Between the 5th and 9th centuries CE, hundreds and possibly even thousands of Chinese Buddhists travelled to India to study with Buddhist teachers, collect sacred texts, and visit holy sites. Written accounts recorded the experiences of many pilgrims, such as Faxian, Xuanzang, and Yijing. Though not so numerous as the Chinese pilgrims, Buddhists from Japan, Korea, and other lands also ventured abroad in the interests of spiritual enlightenment.

Medieval Europeans did not hit the roads in such large numbers as their Muslim and East Asian counterparts during the early part of the post-classical era, although gradually increasing crowds of Christian pilgrims flowed to Jerusalem, Rome, Santiago de Compostela (in northern Spain), and other sites. After the 12th century, however, merchants, pilgrims, and missionaries from medieval Europe travelled widely and left numerous travel accounts, of which Marco Polo's description of his travels and sojourn in China is the best known. As they became familiar with the larger world of the eastern hemisphere - and the profitable commercial opportunities that it offered - European peoples worked to find new and more direct routes to Asian and African markets. Their efforts took them not only to all parts of the eastern hemisphere, but eventually to the Americas and Oceania as well.

If Muslim and Chinese peoples dominated travel and travel writing in post-classical times, European explorers, conquerors, merchants, and missionaries took centre stage during the early modern era (about 1500 to 1800 CE). By no means did Muslim and Chinese travel come to a halt in early modern times. But European peoples ventured to the distant corners of the globe, and European printing presses churned out thousands of travel accounts that described foreign lands and peoples for a reading public with an apparently insatiable appetite for news about the

larger world. The volume of travel literature was so great that several editors, including Giambattista Ramusio, Richard Hakluyt, Theodore de Bry, and Samuel Purchas, assembled numerous travel accounts and made them available in enormous published collections.

During the 19th century, European travellers made their way to the interior regions of Africa and the Americas, generating a fresh round of travel writing as they did so. Meanwhile, European colonial administrators devoted numerous writings to the societies of their colonial subjects, particularly in Asian and African colonies they established. By mid-century, attention was flowing also in the other direction. Painfully aware of the military and technological prowess of European and Euro-American societies, Asian travellers in particular visited Europe and the United States in hopes of discovering principles useful for the organisation of their own societies. Among the most prominent of these travellers who made extensive use of their overseas observations and experiences in their own writings were the Japanese reformer Fukuzawa Yu-kichi and the Chinese revolutionary Sun Yat-sen.

With the development of inexpensive and reliable means of mass transport, the 20th century witnessed explosions both in the frequency of long-distance travel and in the volume of travel

writing. While a great deal of travel took place for reasons of business, administration, diplomacy, pilgrimage, and missionary work, as in ages past, increasingly effective modes of mass transport made it possible for new kinds of travel to flourish. The most distinctive of them was mass tourism, which emerged as a major form of consumption for individuals living in the world's wealthy societies. Tourism enabled consumers to get away from home to see the sights in Rome, take a cruise through the Caribbean, walk the Great Wall of China, visit some wineries in Bordeaux, or go on safari in Kenya. A peculiar variant of the travel account arose to meet the needs of these tourists: the guidebook, which offered advice on food, lodging, shopping, local customs, and all the sights that visitors should not miss seeing. Tourism has had a massive economic impact throughout the world, but other new forms of travel have also had considerable influence in contemporary times.

### **Questions 27-28**

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

Write your answers in boxes 27-28 on your answer sheet.

**27. What were most people travelling for in the early days?**

- A. Studying their own cultures
- B. Business

- C. Knowing other people and places better
- D. Writing travel books

**28. Why did the author say writing travel books is also “a mirror” for travellers themselves?**

- A. Because travellers record their own experiences.
- B Because travellers reflect upon their own society and life.
- C Because it increases knowledge of foreign cultures.
- D Because it is related to the development of human society.

### **Questions 29-36**

Complete the table on the next page.

Choose **NO MORE THAN TWO WORDS** from Reading Passage 234 for each answer.

TIME	TRAVELLER	DESTINATION	PURPOSE OF TRAVEL
Classical Greece	Herodotus	Egypt and Anatolia	To gather information for the study of (29) .....
Han Dynasty	Zhang Qian	Central Asia	To seek (30) .....

Roman Empire	Ptolemy, Strabo, Pliny the Elder	The Mediterranean	To acquire (31) ..... .....
Post-classical era (about 500 to 1500 CE)	Muslims	From East Africa to Indonesia, Mecca	For trading and (32) ..... .....
5 <sup>th</sup> - 9 <sup>th</sup> Centuries CE	Chinese Buddhists	(33) ..... .....	To collect Buddhist texts and for spiritual enlightenment
Early modern era (about 1500 to 1800 CE)	European explorers	The New World	To satisfy public curiosity for the New World
During 19th century	Colonial administrators	Asia, Africa	To provide information for the

			(34) .....
.....			
By mid-century of the 1800s	Sun Yat-sen, Fukuzawa Yukichi	Europe and the United States	To study the (35) ..... of their societies
20th century	People from (36) ..... countries	Mass tourism	For entertainment and pleasure

### Questions 37-40

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

Write your answers in boxes 37-40 on your answer sheet.

**37. Why were the imperial rulers especially interested in these travel stories?**

- A. Reading travel stories was a popular pastime.
- B. The accounts are often truthful rather than fictional.
- C. Travel books played an important role in literature.
- D. They desired knowledge of their empire.

**38. Who were the largest group to record their spiritual trips during the post-classical era?**

- A. Muslim traders
- B. Muslim pilgrims
- C. Chinese Buddhists
- D. Indian Buddhist teachers

**39. During the early modern era, a large number of travel books were published to**

- A. meet the public's interest.
- B. explore new business opportunities.
- C. encourage trips to the new world.
- D. record the larger world.

**40. What's the main theme of the passage?**

- A. The production of travel books
- B. The literary status of travel books
- C. The historical significance of travel books
- D. The development of travel books

**Answer:**

27. C  
 28. B  
 29. Persian wars  
 30. allies  
 31. geographical knowledge  
 32. pilgrimage  
 33. India  
 34. colonies  
 35. organisation  
 36. wealthy  
 37. D  
 38. B  
 39. A  
 40. D

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**TEST 4:****SPACE-BASED SOLAR POWER**

In an energy-hungry world, new safe ways to generate electricity are constantly being sought.

Space-based solar power, or SBSP, is not yet up and running, but several space agencies and commercial companies are keenly pursuing it.

SBSP is a system that would harness sunlight in space, convert it into electrical energy, and beam this to receivers in the Earth's equatorial zone. SBSP satellites would be in low orbit 1100 kilometres (684 miles) above the Earth.

### **Advantages**

To date, solar energy has been collected on the ground, but it is estimated there is 144% more solar power available in space as the Earth's atmosphere absorbs light. Furthermore, since our planet rotates, energy can only be collected during daylight. It is possible at the poles to collect light almost continuously in summer, but in winter such plants cannot operate due to snow, ice, and darkness. In space, however, solar power collection could occur around the clock. A further benefit may be that the energy produced could be directed to multiple locations whereas terrestrial power plants are limited to sending power one way into a grid.

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### **Design**

Most prototypes of SBSP structures look like a giant tent hanging in space. It's light, the hollow equilateral triangular frame is 336 metres (1103 feet) long while its depth is 303 metres (994 feet). Down two sides are solar collectors, called arrays; on the floor of the 'tent' sit a solar converter and a transmitting antenna. The antenna sends microwaves to Earth. These waves are at a frequency of 2.45-5.8 gigahertz, or somewhere between infrared and radio signals. They pass through Earth's atmosphere easily

with only minor energy loss. On Earth, the invisible column of microwave energy – perhaps two to three kilometres (a mile or two) wide – is received by a large oval-shaped ‘rectenna’ – a new word combining ‘rectifying’ + ‘antenna’. A pilot beam, also on Earth, ensures the satellite stays in position in space.

Two major technical obstacles remain before SBSP becomes a reality. The first is launching satellites into orbit. While most scientists favour low orbit, others believe a higher orbit like 36,050 kilometres (22,400 miles), about one-tenth of the distance between Earth and the Moon, would harness more sunlight. However, no agency or company has any experience of launching and controlling a satellite in high orbit, and the cost would be exorbitant. The second problem is the wireless power transmission. While this seemed like a physicist’s fantasy a few years ago, in 2009, US and Japanese researchers successfully sent microwave energy between two islands in Hawaii which are 145 km (90 miles) apart – equidistant to Earth’s atmosphere – but it is unknown whether this can be reproduced in space.

## History

SBSP is not a new idea. Dr Peter Glaser designed a system in the late 1960s and was granted a US patent in 1973. The US Department of Energy in conjunction with NASA (the American space agency) conducted feasibility studies in the 1970s, but a conservative administration in the 1980s discontinued

investment. Only in 1997 did the US government reconsider the idea.

In 2009, an American commercial company Space Energy Incorporated announced it planned to provide SBSP 'within a decade'. Subsequently, a company called Solaren stated it was likely to provide 200 megawatts of solar power from an SBSP to Pacific Gas and Electric from 2016. PowerSat Corporation has begun the process of patenting a system of interconnected satellites that will project one extremely powerful microwave beam down to Earth. It has also developed a special thruster to lift a satellite from low orbit into a higher orbit.

Small-scale scientific projects connected to SBSP have long been in operation in Europe. In 2010, several private European firms joined the space power race, and scientific conferences were held on electromagnetic wireless transmission in Italy and Germany.

### **Japanese initiatives**

It is the Japanese, however, who have come nearest to producing a reliable system. Both Mitsubishi Electric Corporation and IHI Corporation currently fund research. Since 1998, JAXA (the Japanese space agency) has been involved in all aspects of SBSP, and it predicts its first satellite will be in orbit by 2030.

There are six broad areas that JAXA is working on. These are (1) general configuration; (2) assembly work and operation; (3) solar array; (4) transmitting antenna; (5) power transmission and reception system; and, (6) testing methods. The first of these is

the most developed. The solar array and transmitting antenna are second in terms of development. Testing methods are relatively unsolved. Assembly work and operation, and power transmission and reception system remain far from being solved.

### **Disadvantages**

SBSP has numerous detractors. There are those people who imagine the microwave beam to be something like a science-fiction death ray. Physicists reassure the public it is a non-ionising wave, like a radio wave or x-ray. It cannot displace electrons from atoms to charge particles, so it does not damage DNA. The waves may be slightly warm, but they present no danger to wildlife or humans.

Other opponents of SBSP say that while there is neither corrosion nor damage from plants or animals in space, background radiation could harm the satellite. There is the very real danger of collision with space junk as recently happened at the International Space Station, or with small meteors' hitting it. The less likely event of an enemy nation firing rockets to destroy the equipment also causes concern. Repairing an unmanned structure so far from Earth would be extremely difficult.

Solar power via the Moon is an option which some scientists say can be in operation in ten years at a fraction of the cost.

But the majority of those against SBSP consider it expensive and unnecessary given that many other forms of renewable energy on Earth are operating successfully. Terrestrial solar power is

relatively underdeveloped; the Arizona Desert in the US, and deserts across North Africa provide easily-accessible locations for new systems that would be five times more cost-effective than SBSP.

### **Viability**

Nevertheless, as energy requirements accelerate, as unrest in oil-producing regions and nuclear accidents make alternative energy more attractive, space-based solar power may have the future after all.

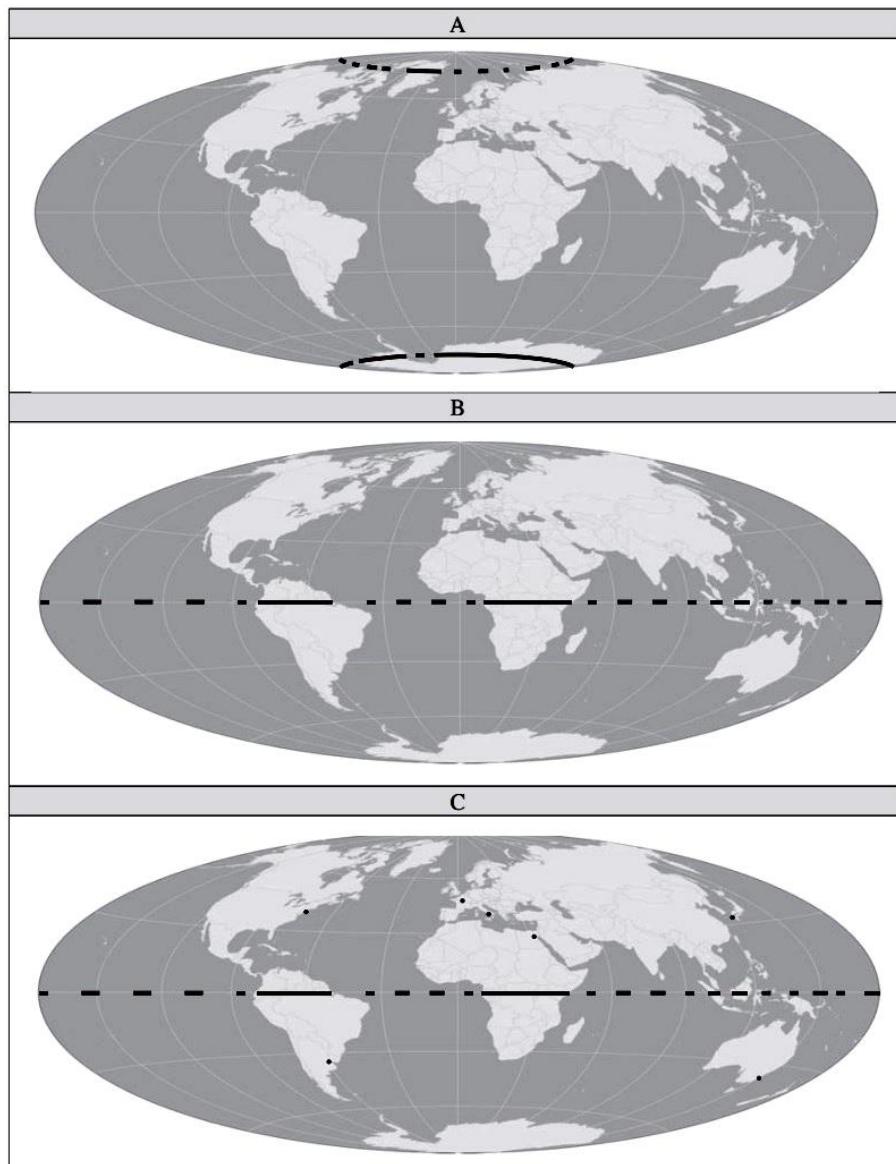
### **Question 28**

Which map below – A, B, or C – best illustrates the most effective zone for Space-based Solar Power (SBSP) receivers?

*Write your answer in box 28 on your answer sheet.*

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### Questions 29-32

What are the following statements according to information in the passage?

*In boxes 29-32 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

**29** Solar energy would be beamed down to Earth in SBSP.

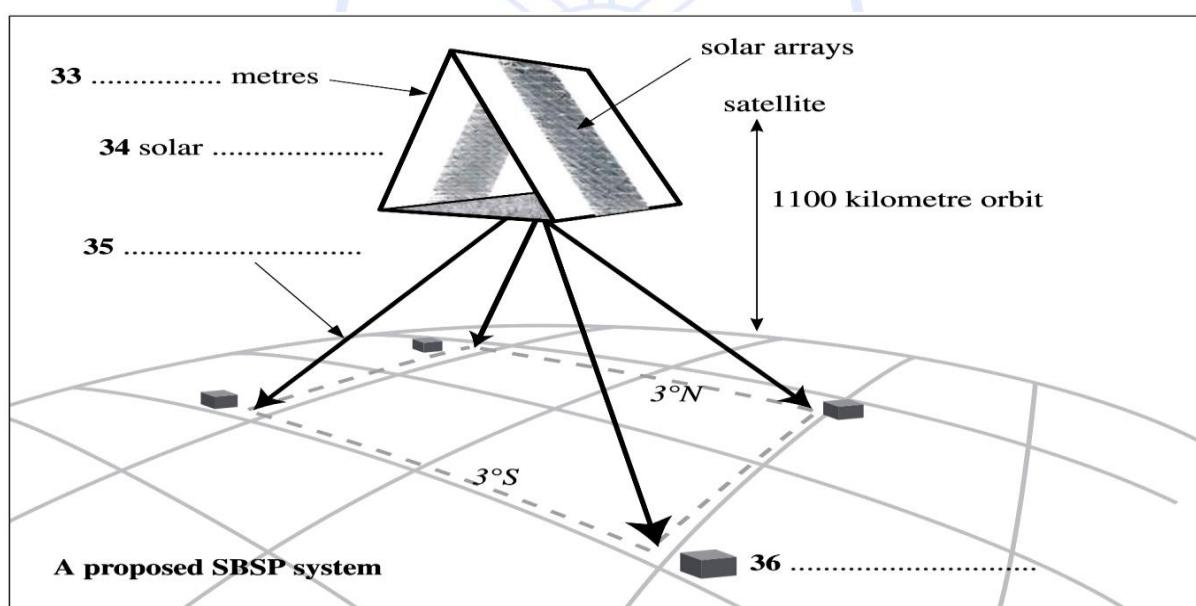
- 30 SBSP satellites would orbit 100 kilometres above the Earth.
- 31 Unlike terrestrial solar power collection, SBSP satellites could collect sunlight 24 hours a day all year round.
- 32 SBSP may be sent to anyone who has a rectenna.

### Questions 33-36

Label the diagram below.

Choose **ONE WORD OR A NUMBER** from the passage for each answer.

*Write your answers in boxes 33-36 on your answer sheet.*

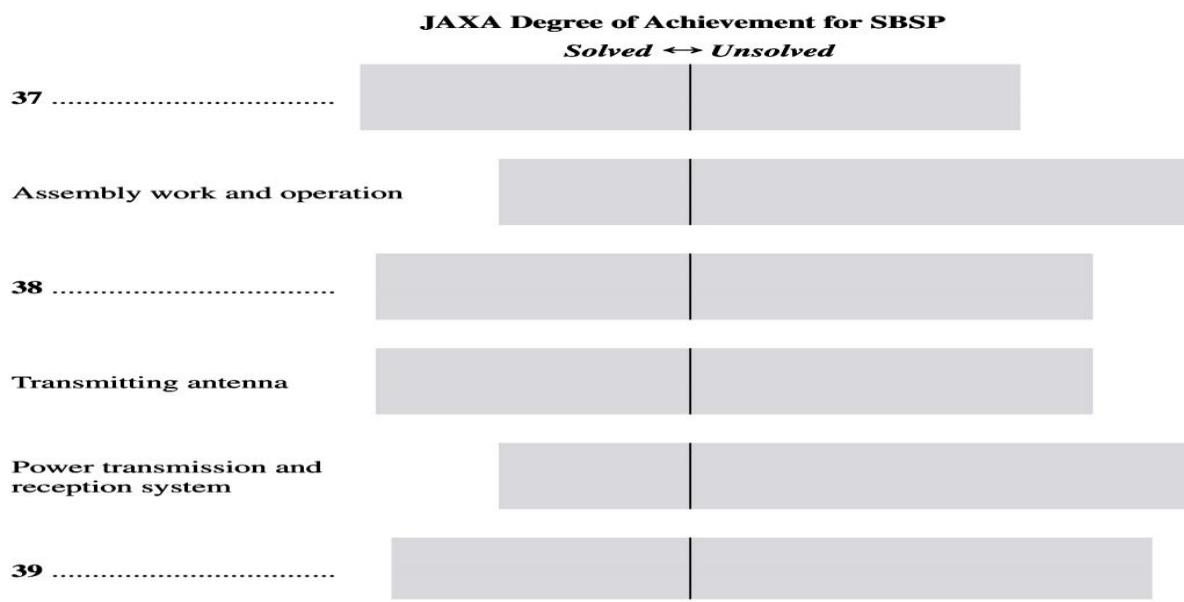


### Questions 37-39

Label the diagram below.

Choose **TWO WORDS** from the passage for each answer.

*Write your answers in boxes 37-39 on your answer sheet.*



### Question 40

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

*Write the correct letter in box 40 on your answer sheet.*

Which represents the view of most critics of SBSP?

- A It is a fantasy of physicists, and impossible to build.
- B Dangers in space mean satellites could easily be destroyed.
- C It is better to concentrate on clean energy production on Earth.
- D Oil and nuclear energy are cheaper in the short term.

---

### ANSWERS:

28. B
29. FALSE
30. FALSE
31. TRUE
32. NOT GIVEN

- 33. 336
- 34. converter
- 35. microwaves
- 36. rectenna
- 37. General configuration (*capital optional*)
- 38. Solar array (*capital optional*)
- 39. Testing methods (*capital optional*)
- 40. C

TEST 5:



The importance of children's play

Brick by brick, six-year-old Alice is building a magical kingdom. Imagining fairy-tale turrets and fire-breathing dragons, wicked witches and gallant heroes, she's creating an enchanting world. Although she isn't aware of it, this fantasy is helping her take her first steps towards her capacity for creativity and so it will have important repercussions in her adult life.

Minutes later, Alice has abandoned the kingdom in favour of playing schools with her younger brother. When she bosses him around as his 'teacher', she's practising how to regulate her emotions through pretence. Later on, when they tire of this and settle down with a board game, she's learning about the need to

follow rules and take turns with a partner.

'Play in all its rich variety is one of the highest achievements of the human species,' says Dr David Whitebread from the Faculty of Education at the University of Cambridge, UK. 'It underpins how we develop as intellectual, problem-solving adults and is crucial to our success as a highly adaptable species.'

Recognising the importance of play is not new: over two millennia ago, the Greek philosopher Plato extolled its virtues as a means of developing skills for adult life, and ideas about play-based learning have been developing since the 19th century.

But we live in changing times, and Whitebread is mindful of a worldwide decline in play, pointing out that over half the people in the world now live in cities. 'The opportunities for free play, which I experienced almost every day of my childhood, are becoming increasingly scarce,' he says. Outdoor play is curtailed by perceptions of risk to do with traffic, as well as parents' increased wish to protect their children from being the victims of crime, and by the emphasis on 'earlier is better' which is leading to greater competition in academic learning and schools.

International bodies like the United Nations and the European Union have begun to develop policies concerned with children's

right to play, and to consider implications for leisure facilities and educational programmes. But what they often lack is the evidence to base policies on.

'The type of play we are interested in is child-initiated, spontaneous and unpredictable – but, as soon as you ask a five-year-old "to play", then you as the researcher have intervened,' explains Dr Sara Baker. 'And we want to know what the long-term impact of play is. It's a real challenge.'

Dr Jenny Gibson agrees, pointing out that although some of the steps in the puzzle of how and why play is important have been looked at, there is very little data on the impact it has on the child's later life.

Now, thanks to the university's new Centre for Research on Play in Education, Development and Learning (PEDAL), Whitebread, Baker, Gibson and a team of researchers hope to provide evidence on the role played by play in how a child develops.

'A strong possibility is that play supports the early development of children's self control,' explains Baker. 'This is our ability to develop awareness of our own thinking processes – it influences how effectively we go about undertaking challenging activities.'

In a study carried out by Baker with toddlers and young pre-schoolers, she found that children with greater self-control solved problems more quickly when exploring an unfamiliar set-up requiring scientific reasoning. 'This sort of evidence makes us think that giving children the chance to play will make them more successful problemsolvers in the long run.'

If playful experiences do facilitate this aspect of development, say the researchers, it could be extremely significant for educational practices, because the ability to self regulate has been shown to be a key predictor of academic performance.

Gibson adds: 'Playful behaviour is also an important indicator of healthy social and emotional development. In my previous research, I investigated how observing children at play can give us important clues about their well-being and can even be useful in the diagnosis of neurodevelopmental disorders like autism.'

Whitebread's recent research has involved developing a play-based approach to supporting children's writing. 'Many primary school children find writing difficult, but we showed in a previous study that a playful stimulus was far more effective than an instructional one.' Children wrote longer and better-structured stories when they first played with dolls representing characters in the story. In the latest study, children first created their story

with Lego \*, with similar results. ‘Many teachers commented that they had always previously had children saying they didn’t know what to write about. With the Lego building, however, not a single child said this through the whole year of the project.’

Whitebread, who directs PEDAL, trained as a primary school teacher in the early 1970s, when, as he describes, ‘the teaching of young children was largely a quiet backwater, untroubled by any serious intellectual debate or controversy.’ Now, the landscape is very different, with hotly debated topics such as school starting age.

‘Somehow the importance of play has been lost in recent decades. It’s regarded as something trivial, or even as something negative that contrasts with “work”. Let’s not lose sight of its benefits, and the fundamental contributions it makes to human achievements in the arts, sciences and technology. Let’s make sure children have a rich diet of play experiences.’

---

\* Lego: coloured plastic building blocks and other pieces that can be joined together

### Questions 1-8:

*Complete the notes below*

*Choose ONE WORD ONLY from the passage for each answer:*

*Write your answers in boxes 1-8 on your answer sheet.*

### **Children's play:**

#### **Uses of children's play**

- building a 'magical kingdom' may help develop 1 .....
- board games involve 2 ..... and turn-taking

#### **Recent changes affecting children's play**

- populations of 3 ..... have grown
- opportunities for free play are limited due to:
  - fear of 4 .....
  - fear of 5 .....
  - increased 6 ..... in schools

#### **International policies on children's play:**

- it is difficult to find 7 ..... to support new policies
- research needs to study the impact of play on the rest of the child's 8 .....

**Questions 9-13:**

Do the following statements agree with the information given on the reading passage?

In boxes 9-13 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

**9.** Children with good self-control are known to be likely to do well at school later on.

**10.** The way a child plays may provide information about possible medical problems.

**11.** Playing with dolls was found to benefit girls' writing more than boys' writing.

**12.** Children had problems thinking up ideas when they first created the story with Lego.

**13.** People nowadays regard children's play as less significant than they did in the past.

**Answer:**

**1. creativity**

**2. rules**

**3. cities**

**4 & 5. traffic, crime [In either order]**

**6. competition**

**7. evidence**

**8. life**

**9. TRUE**

**10. TRUE**

**11. NOT GIVEN**

**12. FALSE**

**13. TRUE**



**TEST 6: 15 JANUARY 2022**

### **The History of Papermaking in the United Kingdom**

The first reference to a paper mill in the United Kingdom was in a book printed by Wynken de Worde in about 1495. This mill belonged to a certain John Tate and was near Hertford. Other early mills included one at Dartford, owned by Sir John Speilman, who was granted special privileges for the collection of rags by Queen Elizabeth and one built in Buckingham shire before the end of the sixteenth century. During the first half of the seventeenth century, mills were established near Edinburgh, at

Cannock Chase in Staffordshire, and several in Buckinghamshire, Oxfordshire and Surrey.

The Bank of England has been issuing bank notes since 1694, with simple watermarks in them since at least 1697. Henri de Portal was awarded the contract in December 1724 for producing the Bank of England watermarked bank-note paper at Bere Mill in Hampshire. Portals have retained this contract ever since but production is no longer at Bere Mill. There were two major developments at about the middle of the eighteenth century in the paper industry in the UK.

The first was the introduction of the rag engine or Hollander, invented in Holland sometime before 1670, which replaced the stamping mills, which had previously been used, for the disintegration of the rags and beating of the pulp. The second was in the design and construction of the mould used for forming the sheet. Early moulds had straight wires sewn down on to the wooden foundation, this produced an irregular surface showing the characteristic "laid" marks, and, when printed on, the ink did not give clear, sharp lines. Baskerville, a Birmingham printer, wanted a smoother paper.

James Whatman the Elder developed a woven wire fabric, thus leading to his production of the first woven paper in 1757. Increasing demands for more paper during the late eighteenth and early nineteenth centuries led to shortages of the rags

needed to produce the paper. Part of the problem was that no satisfactory method of bleaching pulp had yet been devised, and so only white rags could be used to produce white paper.

Chlorine bleaching was being used by the end of the eighteenth century, but excessive use produced papers that were of poor quality and deteriorated quickly.

By 1800 up to 24 million pounds of rags were being used annually, to produce 10,000 tons of paper in England and Wales, and 1000 tons in Scotland, the home market being supplemented by imports, mainly from the continent. Experiments in using other materials, such as sawdust, rye straw, cabbage stumps and spruce wood had been conducted in 1765 by Jacob Christian Schäffer. Similarly, Matthias Koops carried out many experiments on straw and other materials at the Neckinger Mill, Bermondsey around 1800, but it was not until the middle of the nineteenth century that pulp produced using straw or wood was utilised in the production of paper.

By 1800 there were 430 (564 in 1821) paper mills in England and Wales (mostly single vat mills), under 50 (74 in 1823) in Scotland and 60 in Ireland, but all the production was by hand and the output was low. The first attempt at a paper machine to mechanise the process was patented in 1799 by Frenchman Nicholas Louis Robert, but it was not a success. However, the drawings were brought to England by John Gamble in 1801 and

passed on to the brother's Henry and Sealy Fourdrinier, who financed the engineer Henry Donkin to build the machine.

The first successful machine was installed at Frogmore, Hertfordshire, in 1803. The paper was pressed onto an endless wire cloth, transferred to a continuous felt blanket and then pressed again. Finally it was cut off the reel into sheets and loft dried in the same way as hand made paper. In 1809 John Dickinson patented a machine that used a wire cloth covered cylinder revolving in a pulp suspension, the water being removed through the centre of the cylinder and the layer of pulp removed from the surface by a felt covered roller (later replaced by a continuous felt passing round a roller).

This machine was the forerunner of the present day cylinder mould or vat machine, used mainly for the production of boards. Both these machines produced paper as a wet sheet, which require drying after removal from the machine, but in 1821 T B Crompton patented a method of drying the paper continuously, using a woven fabric to hold the sheet against steam heated drying cylinders. After it had been pressed, the paper was cut into sheets by a cutter fixed at the end of the last cylinder. By the middle of the nineteenth century the pattern for the mechanised production of paper had been set.

Subsequent developments concentrated on increasing the size and production of the machines. Similarly, developments in

alternative pulps to rags, mainly wood and esparto grass, enabled production increases. Conversely, despite the increase in paper production, there was a decrease, by 1884, in the number of paper mills in England and Wales to 250 and in Ireland to 14 (Scotland increased to 60), production being concentrated into fewer, larger units. Geographical changes also took place as many of the early mills were small and had been situated in rural areas.

The change was to larger mills in, or near, urban areas closer to suppliers of the raw materials (esparto mills were generally situated near a port as the raw material was brought in by ship) and the paper markets.

Questions 28 – 34

*Do the following statements agree with the views of the writer of the reading*

*passage on The History of Papermaking in the U.K.?*

*In Boxes 28 – 34 write:*

**TRUE** if the statement agrees with the writer

**FALSE** if the statement doesn't agree with the writer

**NOT GIVEN** if it is impossible to say what the writer thinks about this

28 The printing of paper money in the UK has always been done by the same company.

29 Early paper making in Europe was at its peak in Holland in the 18th century.

30 18th Century developments in moulds led to the improvement of a flatter, more even paper.

31 Chlorine bleaching proved the answer to the need for more white paper in the 18th and 19th centuries.

32 The first mechanised process that had any success still used elements of the hand made paper-making process.

33 Modern paper making machines are still based on John Dickinson's 1809 patent.

34 The development of bigger mills near larger towns was so that mill owners could take advantage of potential larger workforce's.

#### Questions 35 – 40

*Match the events (35 – 40) with the dates (A – G) listed below.*

*Write the appropriate letters in boxes 35 – 40 on your answer sheet.*

35 Invention of the rag engine.

36 A new method for drying paper patented.

37 First successful machine for making paper put into production.

38 Manufacture of the first woven paper.

39 Watermarks first used for paper money.

40 The first machine for making paper patented.

DATES

A 1803

B 1757

C 1821

D 1697

E 1799

F 1670

G 1694

ANSWERS

28. TRUE

29. NOT GIVEN

30. TRUE

31. FALSE

32. TRUE

33. TRUE

34. FALSE

35. F

36. C

37. A

38. B

39. D

40. E

## TEST 7:

**Music and the emotions**

*Neuroscientist Jonah Lehrer considers the emotional power of music*

Why does music make us feel? On 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 re-directed to the muscles in our legs. In other words, sound stirs us at our biological roots.

A recent paper in Neuroscience by a research team in Montreal, Canada, marks an important step in repealing 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 key note 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 1-5

*Complete the summary below.*

*Choose NO MORE THAN TWO WORDS from the passage for each answer.*

*Write your answers in boxes 1-5 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 1 [ ] in two of the parts of the brain which are associated with feeling 2 [ ].

Researchers also observed that the neurons in the area of the brain called the 3 [ ] were particularly active just before the participants' favourite moments in the music - the period known as the 4 [ ]. Activity in this part of the brain is associated with the expectation of 'reward' stimuli such as 5 [ ].

*Crack IELTS the easy way*

### Questions 6-10

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

*Write the correct letter in boxes 6-10 on your answer sheet*

6 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

7 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.

8 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 on 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

**9** 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

**10** 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 11-14

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

Write the correct letter, **A-F**, in boxes 11-14 on your answer sheet.

**11**  The Montreal researchers discovered that

- 12  Many studies have demonstrated that
- 13  Meyer's analysis of Beethoven's music shows that
- 14  Earlier theories of music suggested that

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 on 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.

### Answer

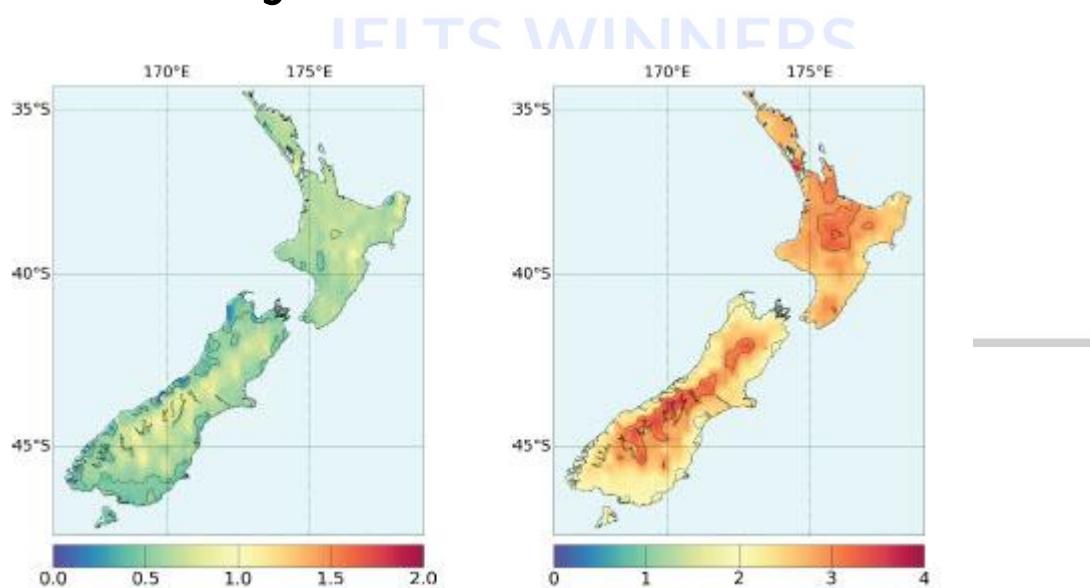
1. dopamine	8. A
2. pleasure	9. B

<b>3. caudate</b>	<b>10. D</b>
<b>4. anticipatory phase</b>	<b>11. F</b>
<b>5. food</b>	<b>12. B</b>
<b>6. B</b>	<b>13. E</b>
<b>7. C</b>	<b>14. C</b>



**TEST 8:**

### Global Warming in New Zealand



For many environmentalists, the world seems to be getting warmer. As the nearest country of South Polar Region, New

Zealand has maintained an upward trend in its average temperature in the past few years. However, the temperature in New Zealand will go up 4oC in the next century while the polar region will go up more than 6oC. The different pictures of temperature stem from its surrounding ocean which acts like the air conditioner. Thus New Zealand is comparatively fortunate.

Scientifically speaking, this temperature phenomenon in New Zealand originated from what researchers call “SAM” (Southern Annular Mode), which refers to the wind belt that circles the Southern Oceans including New Zealand and Antarctica. Yet recent work has revealed that changes in SAM in New Zealand have resulted in a weakening of moisture during the summer, and more rainfall in other seasons. A bigger problem may turn out to be heavier droughts for agricultural activities because of more water loss from soil, resulting in poorer harvest before winter when the rainfall arrives too late to rescue.

Among all the calamities posed by drought, moisture deficit ranks the first. Moisture deficit is the gap between the water plants need during the growing season and the water the earth can offer. Measures of moisture deficit were at their highest since the 1970s in New Zealand. Meanwhile, ecological analyses clearly show moisture deficit is imposed at different growth stage of crops. If moisture deficit occurs around a crucial growth stage, it will cause about 22% reduction in grain yield as opposed to moisture deficit at vegetative phase.

Global warming is not only affecting agriculture production. When scientists say the country's snow pack and glaciers are melting at an alarming rate due to global warming, the climate is putting another strain on the local places. For example, when the development of global warming is accompanied by the falling snow line, the local skiing industry comes into a crisis. The snow line may move up as the temperature goes up, and then the snow at the bottom will melt earlier. Fortunately, it is going to be favorable for the local skiing industry to tide over tough periods since the quantities of snowfall in some areas are more likely to increase.

What is the reaction of glacier region? The climate change can be reflected in the glacier region in southern New Zealand or land covered by ice and snow. The reaction of a glacier to a climatic change involves a complex chain of processes. Over time periods of years to several decades, cumulative changes in mass balance cause volume and thickness changes, which will affect the flow of ice via altered internal deformation and basal sliding. This dynamic reaction finally leads to glacier length changes, the advance or retreat of glacier tongues. Undoubtedly, glacier mass balance is a more direct signal of annual atmospheric conditions.

The latest research result of National Institute of Water and Atmospheric (NIWA) Research shows that glaciers line keeps moving up because of the impacts of global warming. Further losses of ice can be reflected in Mt. Cook Region. By 1996, a 14

km long sector of the glacier had melted down forming a melt lake (Hooker Lake) with a volume. Melting of the glacier front at a rate of 40 m/yr will cause the glacier to retreat at a rather uniform rate. Therefore, the lake will continue to grow until it reaches the glacier bed.

A direct result of the melting glaciers is the change of high tides which serves the main factor for sea level rise. The trend of sea level rise will bring a threat to the groundwater system for its hyper-saline groundwater and then pose a possibility to decrease the agricultural production. Many experts believe that the best way to counter this trend is to give a longer-term view of sea level change in New Zealand. Indeed, the coastal boundaries need to be upgraded and redefined.

There is no doubt that global warming has affected New Zealand in many aspects. The emphasis on the global warming should be based on the joint efforts of local people and experts who conquer the tough period. For instance, farmers are taking a long term, multi-generational approach to adjust the breeds and species according to the temperature. Agriculturists also find ways to tackle the problems that may bring to the soil. In broad terms, going forward, the systemic resilience that's been going on a long time in the ecosystem will continue.

How about animals' reaction? Experts have surprisingly realized that animals have unconventional adaptation to global warming. A study has looked at sea turtles on a few northern beaches in

New Zealand and it is very interesting to find that sea turtles can become male or female according to the temperature. Further researches will try to find out how rising temperatures would affect the ratio of sex reversal in their growth. Clearly, the temperature of the nest plays a vital role in the sexes of the baby turtles.

Tackling the problems of global warming is never easy in New Zealand, because records show the slow process of global warming may have a different impact on various regions. For New Zealand, the emission of carbon dioxide only accounts for 0.5% of the world's total, which has met the governmental standard. However, New Zealand's effort counts only a tip of the iceberg. So far, global warming has been a world issue that still hangs in an ambiguous future.

## IELTS WINNERS

### Questions 1-6

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

*Write the correct letter in boxes 1-6 on your answer sheet.*

1. What is the main idea of the first paragraph?

- A  The temperature in the polar region will increase less than that in New Zealand in the next century.
- B  The weather and climate of New Zealand is very important to its people because of its close location to the polar region.

- C  The air condition in New Zealand will maintain a high quality because of the ocean.
- D  The temperature of New Zealand will increase less than that of other region in the next 100 years because it is surrounded by sea.

2. What is one effect of the wind belt that circles the Southern Oceans?

- A  New Zealand will have more moisture in winds in summer.
- B  New Zealand needs to face droughts more often in hotter months in a year.
- C  Soil water will increase as a result of weakening moisture in the winds
- D  Agricultural production will be reduced as a result of more rainfall in other seasons.

3. What does “moisture deficit” mean to the grain and crops?

- A  The growing condition will be very tough for crops.
- B  The growing season of some plants can hardly be determined.
- C  There will be a huge gap between the water plants needed and the water the earth can offer.

- D  The soil of the grain and crops in New Zealand reached its lowest production since 1970s.

4. What changes will happen to skiing industry due to the global warming phenomenon?

- A  The skiing station may lower the altitude of skiing
- B  Part of the skiing station needs to move to the north.
- C  The snowfall may increase in part of skiing station.
- D  The local skiing station may likely to make a profit because of the snowfall increase.

5. Cumulative changes over a long period of time in mass balance will lead to

- A  Alterations in the volume and thickness of glaciers.
- B  Faster changes in internal deformation and basal sliding.
- C  Larger length of glaciers.
- D  Retreat of glacier tongues as a result of change in annual atmospheric conditions.

6. Why does the writer mention NIWA in the sixth paragraph?

- A  To use a particular example to explain the effects brought by glacier melting.
- B  To emphasize the severance of the further loss of ice in Mt. Cook Region.

- C  To alarm the reader of melting speed of glaciers at a uniform rate.
- D  To note the lake in the region will disappear when it reaches the glacier bed.

### Questions 7-9

*Complete the summary below.*

*Choose NO MORE THAN TWO WORDS from the passage for each answer.*

*Write your answer in boxes 7-9 on your answer sheet.*

Research date shows that sea level has a closely relation with the change of climate. The major reason for the increase in sea level is connected with 7 . The increase in sea level is also said to have a threat to the underground water system, the destruction of which caused by rise of sea level will lead to a high probability of reduction in 8 . In the long run, New Zealand may have to improve the 9  if they want to diminish the effect change in sea levels.

### Questions 10-14

*Do the following statements agree with the claims of the writer in Reading Passage?*

*In boxes 10-14 on your answer sheet write*

**YES** if the statement agree 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

10  Farmers are less responsive to climate change than agriculturists.

11  Agricultural sector is too conservative and resistant to deal with climate change.

12  Turtle is vulnerable to climate change.

13  The global warming is going slowly, and it may have different effects on different areas in New Zealand.

14  New Zealand must cut carbon dioxide emission if they want to solve the problem of global warming.

### Answer

1. D	8. agricultural production
2. B	9. coastal boundaries
3. A	10. NOT GIVEN

4. C	11. NOT GIVEN
5. A	12. NO
6. A	13. YES
7. high tides	14. NO

TEST 9:



### The history of tea

The story of tea begins in China. According to legend, in 2737 BC, the Chinese emperor Shen Nung was sitting beneath a tree while his servant boiled drinking water, when some leaves from the tree blew into the water. Shen Nung, a renowned herbalist, decided to try the infusion that his servant had accidentally created. The tree was a *Camellia sinensis*, and the resulting drink was what we now call tea.

It is impossible to know whether there is any truth in this story. But tea drinking certainly became established in China many centuries before it had even been heard of in the West.

Containers for tea have been found in tombs dating from the Han Dynasty (206 BC-220 AD) but it was under the Tang Dynasty (618-906 AD), that tea became firmly established as the national drink of China.

It became such a favourite that during the late eighth century a writer called Lu Yu wrote the first book entirely about tea, the Ch'a Ching, or Tea Classic. It was shortly after this that tea was first introduced to Japan, by Japanese Buddhist monks who had travelled to China to study. Tea received almost instant imperial sponsorship and spread rapidly from the royal court and monasteries to the other sections of Japanese society.

So at this stage in the history of tea, Europe was rather lagging behind. In the latter half of the sixteenth century there are the first brief mentions of tea as a drink among Europeans. These are mostly from Portuguese who were living in the East as traders and missionaries. But although some of these individuals may have brought back samples of tea to their native country, it was not the Portuguese who were the first to ship back tea as a commercial import.

This was done by the Dutch, who in the last years of the sixteenth century began to encroach on Portuguese trading routes in the East. By the turn of the century they had established a trading post on the island of Java, and it was via Java that in 1606 the first consignment of tea was shipped from China to Holland. Tea soon became a fashionable drink among the Dutch, and from there spread to other countries in continental western Europe, but because of its high price it remained a drink for the wealthy.

Britain, always a little suspicious of continental trends, had yet to become the nation of tea drinkers that it is today. Starting in 1600, the British East India Company had a monopoly on importing goods from outside Europe, and it is likely that sailors on these ships brought tea home as gifts. The first coffee house had been established in London in 1652, and tea was still somewhat unfamiliar to most readers, so it is fair to assume that the drink was still something of a curiosity.

Gradually, it became a popular drink in coffee houses, which were as much locations for the transaction of business as they were for relaxation or pleasure. They were though the preserve of middle- and upperclass men; women drank tea in their own homes, and as yet tea was still too expensive to be widespread among the working classes. In part, its high price was due to a punitive system of taxation.

One unforeseen consequence of the taxation of tea was the growth of methods to avoid taxation—smuggling and adulteration. By the eighteenth century many Britons wanted to drink tea but could not afford the high prices, and their enthusiasm for the drink was matched by the enthusiasm of criminal gangs to smuggle it in. What began as a small time illegal trade, selling a few pounds of tea to personal contacts,

developed by the late eighteenth century into an astonishing organised crime network, perhaps importing as much as 7 million lbs annually, compared to a legal import of 5 million lbs!

Worse for the drinkers was that taxation also encouraged the adulteration of tea, particularly of smuggled tea which was not quality controlled through customs and excise. Leaves from other plants, or leaves which had already been brewed and then dried, were added to tea leaves. By 1784, the government realised that enough was enough, and that heavy taxation was creating more problems than it was worth. The new Prime Minister, William Pitt the Younger, slashed the tax from 119 per cent to 12.5 per cent. Suddenly legal tea was affordable, and smuggling stopped virtually overnight.

Another great impetus to tea drinking resulted from the end of the East India Company's monopoly on trade with China, in 1834. Before that date, China was the country of origin of the vast majority of the tea imported to Britain, but the end of its monopoly stimulated the East India Company to consider growing tea outside China. India had always been the centre of the Company's operations, which led to the increased cultivation of tea in India, beginning in Assam. There were a few false starts, including the destruction by cattle of one of the earliest tea

nurseries, but by 1888 British tea imports from India were for the first time greater than those from China.

The end of the East India Company's monopoly on trade with China also had another result, which was more dramatic though less important in the long term: it ushered in the era of the tea clippers. While the Company had had the monopoly on trade, there was no rush to bring the tea from China to Britain, but after 1834 the tea trade became a virtual free for all.

Individual merchants and sea captains with their own ships raced to bring home the tea and make the most money, using fast new clippers which had sleek lines, tall masts and huge sails. In particular there was competition between British and American merchants, leading to the famous clipper races of the 1860s. But these races soon came to an end with the opening of the Suez canal, which made the trade routes to China viable for steamships for the first time.

## QUESTIONS

### Questions 1 – 7

Complete the sentences below with words taken from Reading Passage

Use **ONE WORD** for each answer.

Write your answers in boxes 1-7 on your answer sheet.

- 1** Researchers believed the tea containers detected in ..... from the Han Dynasty was the first evidence of the use of tea.
- 2** Lu Yu wrote a ..... about tea before anyone else in the eighth century.
- 3** It was ..... from Japan who brought tea to their native country from China.
- 4** Tea was carried from China to Europe actually by the .....
- 5** The British government had to cut down the taxation on tea due to the serious crime of .....
- 6** Tea was planted in ..... besides China in the 19th century.
- 7** In order to compete in shipping speed, traders used ..... for the race.

### Questions 8 – 13

Do the following statements agree with the information given in Reading Passage?

In boxes **8–13** on your answer sheet, write

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

- 8** Tea was popular in Britain in the 16th century.
- 9** Tea was more fashionable than coffee in Europe in the late

16th century.

10 Tea was enjoyed by all classes in Britain in the seventeenth century.

11 The adulteration of tea also prompted William Pitt the Younger to reduce the tax.

12 Initial problems occurred when tea was planted outside China by the East India Company.

13 The fastest vessels were owned by America during the 19th century clipper races.

## ANSWERS

### Reading Passage 1

- 1 tombs
- 2 book
- 3 monks
- 4 Dutch
- 5 smuggling
- 6 India
- 7 clippers
- 8 FALSE
- 9 NOT GIVEN
- 10 FALSE
- 11 TRUE
- 12 TRUE
- 13 NOT GIVEN



## TEST 10:

## Can We Hold Back the Flood?

A. LAST winter's floods on the rivers of central Europe were among the worst since the Middle Ages, and as winter storms return, the spectre of floods is returning too. Just weeks ago, the river Rhone in south-east France burst its banks, driving 15,000 people from their homes, and worse could be on the way.

Traditionally, river engineers have gone for Plan A: get rid of the water fast, draining it off the land and down to the sea in tall-sided rivers re-engineered as high-performance drains. But however big they dig city drains, however wide and straight they make the rivers, and however high they build the banks, the floods keep coming back to taunt them, from the Mississippi to the Danube. And when the floods come, they seem to be worse than ever.

B. No wonder engineers are turning to Plan B: sap the water's destructive strength by dispersing it into fields, forgotten lakes, flood plains and aquifers. Back in the days when rivers took a more tortuous path to the sea, flood waters lost impetus and volume while meandering across flood plains and idling through wetlands and inland deltas. But today the water tends to have an unimpeded journey to the sea. And this means that when it rams in the uplands, the water comes down all at once. Worse, whenever we close off more flood plain, the river's flow farther downstream becomes more violent and uncontrollable. Dykes are

only as good as their weakest link – and the water will unerringly find it.

C. Today, the river has lost 7 per cent of its original length and runs up to a third faster. When it rains hard in the Alps, the peak flows from several tributaries coincide in the main river, where once they arrived separately. And with four-fifths of the lower Rhine's flood plain barricaded off, the waters rise ever higher. The result is more frequent flooding that does ever-greater damage to the homes, offices and roads that sit on the flood plain. Much the same has happened in the US on the mighty Mississippi, which drains the world's second largest river catchment into the Gulf of Mexico.



Can We Hold Back the

## Flood

D. The European Union is trying to improve rain forecasts and more accurately model how intense rains swell rivers. That may help cities prepare, but it won't stop the floods. To do that, say hydrologists, you need a new approach to engineering not just Agency – country £1 billion – puts it like this: "The focus is now on working with the forces of nature. Towering concrete walls are out, and new wetlands are in." To help keep London's upstream

and reflooding 10 square km outside Oxford. Nearer to London it has spent £100 million creating new wetlands and a relief channel across 16 kilometres.

E. The same is taking place on a much grander scale in Austria, in one of Europe's largest river restorations to date. Engineers are regenerating flood plains along 60 kilometres of the river Drava as it exits the Alps. They are also widening the river bed and channelling it back into abandoned meanders, oxbow lakes and backwaters overhung with willows. The engineers calculate that the restored flood plain can now store up to 10 million cubic metres of flood waters and slow storm surges coming out of the Alps by more than an hour, protecting towns as far downstream as Slovenia and Croatia.

F. "Rivers have to be allowed to take more space. They have to be turned from flood-chutes into flood-foilers," says Nienhuis. And the Dutch, for whom preventing floods is a matter of survival, have gone furthest. A nation built largely on drained marshes and seabed had the fright of its life in 1993 when the Rhine almost overwhelmed it. The same happened again in 1995, when a quarter of a million people were evacuated from the Netherlands. But a new breed of "soft engineers" wants our cities to become porous, and Berlin is the first governed by tough new rules to prevent its drains becoming overloaded after heavy rains. Harald Kraft, an architect working in the city, says: "We now see

rainwater as giant Potsdamer Platz, a huge new commercial redevelopment by DaimlerChrysler in the heart of the city.

G. Los Angeles has spent billions of dollars digging huge drains and concreting river beds to carry away the water from occasional intense storms. “In LA we receive half the water we need in rainfall, and we throw it away. Then we spend hundreds of millions to import water,” says Andy Lipkis, an LA environmentalist who kick-started the idea of the porous city by showing it could work on one house. Lipkis, along with citizens groups like Friends of the Los Angeles River and Unpaved LA, want to beat the urban flood hazard and fill the taps by holding onto the city’s flood water. And it’s not just a pipe dream. The authorities this year launched a \$100 million scheme to road-test the porous city in one flood-hit community in Sun Valley. The plan is to catch the rain that falls on thousands of driveways, parking lots and rooftops in the valley. Trees will soak up water from parking lots. Homes and public buildings will capture roof water to irrigate gardens and parks. And road drains will empty into old gravel pits and other leaky places that should recharge the city’s underground water reserves. Result: less flooding and more water for the city. Plan B says every city should be porous, every river should have room to flood naturally and every coastline should be left to build its own defences. It sounds expensive and utopian, until you realise how much we spend trying to drain cities and protect our watery margins – and how bad we are at it.

## QUESTIONS

### *Questions 1-6*

*The reading Passage has seven paragraphs A-G. Which paragraph contains the following information? Write the correct letter A-G, in boxes 1-6 on your answer sheet*

1. A new approach carried out in the UK
2. Reasons why twisty path and dykes failed
3. Illustration of an alternative Plan in LA which seems much unrealistic
4. Traditional way of tackling flood
5. Effort made in Netherlands and Germany
6. One project on a river benefits three nations

### *Questions 7-11*

#### *Summary*

*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 7-11 on your answer sheet.*

Flood makes river shorter than it used to be, which means faster speed and more damage to constructions on flood plain. Not only European river poses such threat but the same things happens to the powerful 7 in the US.

In Europe, one innovative approach carried out by UK's Environment Agency, for example a wetland instead of concrete walls is generated not far from the city of 8 to protect it

from flooding. In 1995, Rhine flooded again and thousands of people left the country of \_\_\_\_\_ 9 \_\_\_\_\_. A league of engineers suggested that cities should be porous, \_\_\_\_\_ 10 \_\_\_\_\_ set an good example for others. Another city devastated by heavy storms casually is \_\_\_\_\_ 11 \_\_\_\_\_, though its government pours billions of dollars each year in order to solve the problem.

### **Questions 12-13**

*Choose TWO correct letter, write your answers in boxes 12-13 on your answer sheet*

*What TWO benefits will the new approach in the UK and Austria bring to US according to this passage?*

- A. We can prepare before flood comes
- B. It may stop the flood involving the whole area
- C. Decrease strong rainfalls around Alps simply by engineering constructions
- D. Reserve water to protect downstream towns E Store tons of water in downstream area

### **ANSWERS**

1	D	2	B	3	G
4	A	5	F	6	E
7	Mississippi	8	London	9	The Netherlands
10	Berlin	11	Los Angeles/ LA	12	B
13	D				

**TEST 11:****Communicating Styles and Conflict**

*Knowing your communication style and having a mix of styles on your team can provide a positive force for resolving conflict.*

A As far back as Hippocrates' time (460-370B.C.), people have tried to understand other people by characterizing them according to personality type or temperament. Hippocrates believed there were four different body fluids that influenced four basic types of temperament. His work was further developed 500 years later by Galen. These days there are any number of self-assessment tools that relate to the basic descriptions developed by Galen, although we no longer believe

the source to be the types of body fluid that dominate our systems.

**B** The values in self-

assessments that help determine personality style. Learning styles, communication styles, conflict-handling styles, or other aspects of individuals is that they help depersonalize conflict in interpersonal relationships. The depersonalization occurs when you realize that others aren't trying to be difficult, but they need different or more information than you do. They're not intending to be rude: they are so focused on the task they forget about greeting people. They would like to work faster but not at the risk of damaging the relationships needed to get the job done. They understand there is a job to do. But it can only be done right with the appropriate information, which takes time to collect.

When used appropriately, understanding communication styles can help resolve conflict on teams. Very rarely are conflicts true personality issues. Usually they are issues of style, information needs, or focus.

**C** Hippocrates and later Galen determined there were four basic temperaments: sanguine, phlegmatic, melancholic and choleric. These descriptions were developed centuries ago and are still somewhat apt, although you could update the wording. In today's world, they translate into the four fairly common communication styles described below:

D The sanguine person would be the expressive or spirited style of communication. These people speak in pictures. They invest a lot of emotion and energy in their communication and often speak quickly. Putting their whole body into it. They are easily sidetracked onto a story that may or may not illustrate the point they are trying to make. Because of their enthusiasm, they are great team motivators. They are concerned about people and relationships. Their high levels of energy can come on strong at times and their focus is usually on the bigger picture, which means they sometimes miss the details or the proper order of things. These people find conflict or differences of opinion invigorating and love to engage in a spirited discussion. They love change and are constantly looking for new and exciting adventures.

E The phlegmatic person - cool and persevering - translates into the technical or systematic communication style. This style of communication is focused on facts and technical details. Phlegmatic people have an orderly methodical way of approaching tasks, and their focus is very much on the task, not on the people, emotions, or concerns that the task may evoke. The focus is also more on the details necessary to accomplish a task. Sometimes the details overwhelm the big picture and focus needs to be brought back to the context of the task. People with this style think the facts should speak for themselves, and they are not as comfortable with conflict. They need time to adapt to

change and need to understand both the logic of it and the steps involved.

F This melancholic person who is soft hearted and oriented toward doing things for others translates into the considerate or sympathetic communication style. A person with this communication style is focused on people and relationships. They are good listeners and do things for other people-sometimes to the detriment of getting things done for themselves. They want to solicit everyone's opinion and make sure everyone is comfortable with whatever is required to get the job done. At times this focus on others can distract from the task at hand. Because they are so concerned with the needs of others and smoothing over issues, they do not like conflict. They believe that change threatens the status quo and tends to make people feel uneasy, so people with this communication style, like phlegmatic people need time to consider the changes in order to adapt to them.

G The choleric temperament translates into the bold or direct style of communication. People with this style are brief in their communication - the fewer words the better. They are big picture thinkers and love to be involved in many things at once. They are focused on tasks and outcomes and often forget that the people involved in carrying out the tasks have needs. They don't do detail work easily and as a result can often underestimate how much time it takes to achieve the task. Because they are so direct, they often seem forceful and can be very intimidating to others.

They usually would welcome someone challenging them. But most other styles are afraid to do so. They also thrive on change, the more the better.

A well-functioning team should have all of these communication styles for true effectiveness. All teams need to focus on the task, and they need to take care of relationships in order to achieve those tasks. They need the big picture perspective or the context of their work, and they need the details to be identified and taken care of for success. We all have aspects of each style within us. Some of us can easily move from one style to another and adapt our style to the needs of the situation at hand-whether the focus is on tasks or relationships. For others, a dominant style is very evident, and it is more challenging to see the situation from the perspective of another style. The work environment can influence communication styles either by the type of work that is required or by the predominance of one style reflected in that environment. Some people use one style at work and another at home.

The good news about communication styles is that we have the ability to develop flexibility in our styles. The greater the flexibility we have, the more skilled we usually are at handling possible and actual conflicts. Usually it has to be relevant to us to do so, either because we think it is important or because there are incentives in our environment to encourage it. The key is that we have to

want to become flexible with our communication style. As Henry Ford said, “Whether you think you can or you can’t, you’re right!”

## Questions 1-8

*Reading Passage has eight sections A-H.*

*Choose the correct heading for each section from the list of headings below.*

*Write the correct number i-x in boxes 1-8 on your answer sheet.*

### List of Headings

- i Summarising personality types
- ii Combined styles for workplace
- iii Physical explanation
- iv A lively person who encourages
- v Demanding and unsympathetic personality
- vi Lazy and careless personality
- vii The benefits of understanding communication styles
- viii Cautious and caring
- ix Factual and analytical personality
- x Self-assessment determines one’s temperament

1  Section A

2  Section B

3  Section C

4  Section D

5  Section E

6  Section F

7  Section G

8  Section H

### Questions 9-13

*Do the following statements agree with the information given in  
Reading Passage?*

*In boxes 9-13 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

9  It is believed that sanguine people dislike variety.

10  Melancholic and phlegmatic people have similar characteristics.

11  Managers often select their best employees according to personality types.

12  It is possible to change one's personality type.

13  Workplace environment can affect which communication style is most effective.

**Question 14**

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

*Write your answers in box 14 on your answer sheet.*

14. The writer believes using self-assessment tools can

- A  help to develop one's personality.
- B  help to understand colleagues' behaviour.
- C  improve one's relationship with the employer.
- D  directly resolve conflicts.

**Answer**

1. iii	8. ii
2. vii	9. FALSE
3. i	10. TRUE
4. iv	11. NOT GIVEN
5. ix	12. TRUE

6. viii	13. TRUE
7. v	14. B

TEST 12: 20 JAN 2022

### How to Spot a Liar



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.

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.

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.

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. 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."

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."

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."

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

*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.
- 

## Questions 6-9

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

**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.

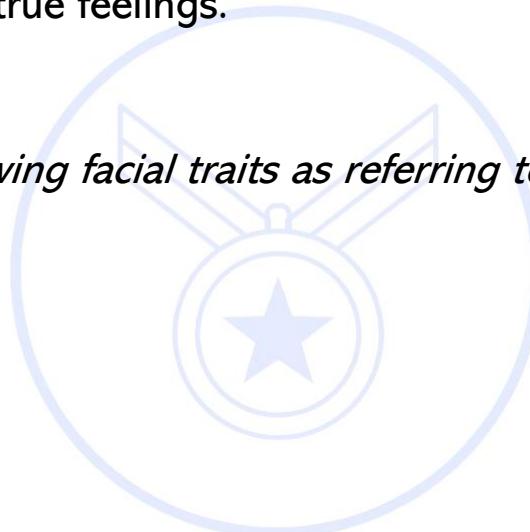
### Questions 10-13

*Classify the following facial traits as referring to*

*A sadness*

*B anger*

*C happiness*



**IELTS WINNERS**

*Write the correct letter A, B or C in boxes 10-13.*

*Crack IELTS the easy way*

10   Inner corners of eyebrows raised

---

11   The whole eyebrows lowered

12   Lines formed around

13   Lines form above eyebrows

**Answer**

1. YES	8. B
2. YES	9. D
3. NOT GIVEN	10. A
4. NO	11. B
5. YES	12. C
6. C	13. A
7. D	<b>IELTS WINNERS</b> <i>Crack IELTS the easy way</i>

**TEST 13:****Plant Scents**

{A} Everyone is familiar with scented flowers, and many people have heard that floral odors help the plant attract pollinators.

This common notion is mostly correct, but it is surprising how little scientific proof of it exists. Of course, not all flowers are pollinated by biological agents—for example, many types of grass are wind-pollinated—but the flowers of the grasses may still emit volatiles. In fact, plants emit organic molecules all the time, although they may not be obvious to the human nose. As for flower scents that we can detect with our noses, bouquets that attract moths and butterflies generally smell “sweet,” and those that attract certain flies seem “rotten” to us.

{B} The release of volatiles from vegetative parts of the plant is familiar, although until recently the physiological functions of these chemicals were less clear and had received much less attention from scientists. When the trunk of a pine tree is injured—for example, when a beetle tries to burrow into it—it exudes a very smelly resin. This resin consists mostly of terpenes—hydrocarbons with a backbone of 10, 15, or 20 carbons that may also contain atoms of oxygen. The heavier C<sub>20</sub> terpenes, called diterpenes, are glue-like and can cover and immobilize insects as they plug the hole. This defence mechanism is as ancient as it is effective: Many samples of fossilized resin, or amber, contain the remains of insects trapped inside. Many other plants emit volatiles when injured, and in some cases the emitted signal helps defend the plant. For example, (Z)-3hexenyl acetate, which is known as a “green leaf volatile” because it is emitted by many plants upon injury, deters females of the moth *Heliothis virescens*

from laying eggs on injured tobacco plants. Interestingly, the profile of emitted tobacco volatiles is different at night than during the day, and it is the nocturnal blend, rich in several (Z)-3-Hexen-1-ol esters, that is most effective in repelling the night-active *H. virescens* moths.

{C} herbivore-induced volatiles often serve as indirect defenses. These bulwarks exist in a variety of plant species, including corn, beans, and the model plant species *Arabidopsis thaliana*. Plants not only emit volatiles acutely, at the site where caterpillars, mites, aphids, or similar insects are eating them but also generally from non-damaged parts of the plant. These signals attract a variety of predatory insects that prey on the plant-eaters. For example, some parasitic wasps can detect the volatile signature of a damaged plant and will lay their eggs inside the offending caterpillar; eventually, the wasp eggs hatch, and the emerging larvae feed on the caterpillar from the inside out. The growth of infected caterpillars is retarded considerably, to the benefit of the plant. Similarly, volatiles released by plants in response to herbivore egg laying can attract parasites of the eggs, thereby preventing them from hatching and avoiding the onslaught of hungry herbivores that would have emerged. Plant volatiles can also be used as a kind of currency in some very indirect defensive schemes. In the rainforest understory tree *Leonardoxa Africana*, ants of the species *Petalomyrmex phylax* patrol young leaves and attack any herbivorous insects that they

encounter. The young leaves emit high levels of the volatile compound methyl salicylate, a compound that the ants use either as a pheromone or as an antiseptic in their nests. It appears that methyl salicylate is both an attractant and a reward offered by the tree to get the ants to perform this valuable deterrent role.

{D} Floral scent has a strong impact on the economic success of many agricultural crops that rely on insect pollinators, including fruit trees such as the bee-pollinated cherry, apple, apricot, and peach, as well as vegetables and tropical plants such as papaya. Pollination not only affects crop yield, but also the quality and efficiency of crop production. Many crops require most, if not all, ovules to be fertilized for optimum fruit size and shape. A decrease in fragrance emission reduces the ability of flowers to attract pollinators and results in considerable losses for growers, particularly for introduced species that had a specialized pollinator in their place of origin. This problem has been exacerbated by recent disease epidemics that have killed many honeybees, the major insect pollinators in the United States.

{E} One means by which plant breeders circumvent the pollination problem is by breeding self-compatible, or apomictic, varieties that do not require fertilization. Although this solution is adequate, its drawbacks include near genetic uniformity and consequent susceptibility to pathogens. Some growers have attempted to enhance honeybee foraging by spraying scent compounds on orchard trees, but this approach was costly, had

to be repeated, had potentially toxic effects on the soil or local biota, and, in the end, proved to be inefficient. The poor effectiveness of this strategy probably reflects the inherent limitations of the artificial, topically applied compounds, which clearly fail to convey the appropriate message to the bees. For example, general spraying of the volatile mixture cannot tell the insects where exactly the blossoms are. Clearly, a more refined strategy is needed. The ability to enhance the existing floral scent, create scent de novo or change the characteristics of the scent, which could all be accomplished by genetic engineering, would allow us to manipulate the types of insect pollinators and the frequency of their visits. Moreover, the metabolic engineering of fragrance could increase crop protection against pathogens and pests.

{F} Genetic manipulation of scent will also benefit the floriculture industry. Ornamentals, including cut flowers, foliage, and potted plants, play an important aesthetic role in human life. Unfortunately, traditional breeding has often produced cultivars with improved vase life, shipping characteristics, colour, and shape while sacrificing desirable perfumes. The loss of scent among ornamentals, which have a worldwide value of more than \$30 billion, makes them important targets for the genetic manipulation of flower fragrance. Some work has already begun in this area, as several groups have created petunia and carnation plants that express the linalool synthase gene from *C. Brewery*.

These experiments are still preliminary: For technical reasons, the gene was expressed everywhere in the plant, and although the transgenic plants did create small amounts of linalool, the level was below the threshold of detection for the human nose. Similar experiments in tobacco used genes for other monoterpene synthases, such as the one that produces limonene, but gave similar results.

{G} The next generation of experiments, already in progress, includes sophisticated schemes that target the expression of scent genes specifically to flowers or other organs—such as special glands that can store antimicrobial or herbivore-repellent compounds.

### ***Questions 1-4***

*The reading Passage has seven paragraphs A-G.*

*Which paragraph contains the following information?*

*Write the correct letter A-G, in boxes 1-4 on your answer sheet.*

- (1) Substance released to help plants themselves.
- (2) Scent helps plant's pollination.
- (3) Practice on genetic experiments of fragrance.
- (4) Plant's scent attracts the herbivore's enemy for protection.

### ***Questions 5-8***

*Do the following statements agree with the information given in Reading Passage 1? In boxes 5-8 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

(5) We have little evidence to support the idea that scent attracts pollinators.

(6) *Heliothis virescens* won't eat those tobacco leaves on which they laid eggs.

(7) Certain ants are attracted by volatiles to guard plants in the rainforest.

(8) Pollination only affects fruit trees' production rather than other crop trees.

### **Questions 9-13**

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

*Write your answers in boxes 9-13 on your answer sheet.*

**Question 9** How do wasps protect plants when they are attracted by scents according to the passage?

- (A) plant induces wasps to prey on herbivores.
- (B) wasps lay eggs into caterpillars.
- (C) wasps laid eggs on plants to expel herbivores.
- (D) offending caterpillars and wasp eggs coexist well.

**Question 10** What causes the number of honeybees to decline in the United States?

- (A) pollination process
- (B) spread illness
- (C) crop trees are poisonous

(D) grower's overlook

**Question 11** Which of the following drawbacks about artificial fragrance is NOT mentioned in the passage?

(A) it's very expensive

(B) it can't tell correct information to pollinators.

(C) it needs massive manual labour

(D) it poisons local environment

**Question 12** The number of \$30 billion quoted in the passage is to illustrate the fact that:

(A) favorable perfume is made from ornamental flowers.

(B) The traditional floriculture industry needs reform.

(C) genetic operation on scent can make a vast profit.

(D) Scent plays a significant role in the Ornamental industry.

**Question 13** What is the weakness of genetic experiments on fragrance?

(A) Linalool level is too low to be smelt by the nose

(B) no progress made in linalool emission.

(C) experiment on tobacco has a better result transgenic

(D) plants produce an intense scent

## Answers

1	B	8	FALSE
2	A	9	B

3	F	10	B
4	C	11	C
5	TRUE	12	D
6	NOT GIVEN	13	A
7	TRUE		

### TEST 14:

#### **The culture of Chimpanzee!**

{A} The similarities between chimpanzees and humans have been studied for years, but in the past decade, researchers have determined that these resemblances run much deeper than anyone first thought. For instance, the nut-cracking observed in the Taï Forest is far from a simple chimpanzee behaviour; rather it is a singular adaptation found only in that particular part of Africa and a trait that biologists consider being an expression of chimpanzee culture. Scientists frequently use the term “culture” to describe elementary animal behaviours- such as the regional dialects of different populations of songbirds-but as it turns out, the rich and varied cultural traditions found among chimpanzees are second in complexity only to human traditions.

{B} During the past two years, an unprecedented scientific collaboration, involving every major research group studying chimpanzees, has documented a multitude of distinct cultural

patterns extending across Africa, in actions ranging from the animals' use of tools to their forms of communication and social customs. This emerging picture of chimpanzees not only affects how we think of these amazing creatures but also alters human beings' conception of our own uniqueness and hints at ancient foundations for extraordinary capacity for culture.

{C} *Homo sapiens* and *Pan troglodytes* have coexisted for hundreds of millennia and share more than 98 per cent of their genetic material, yet only 40 years ago we still knew next to nothing about chimpanzee behaviour in the wild. That began to change in the 1960s when Toshisada Nishida of Kyoto University in Japan and Jane Goodall began 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} In these initial studies, as the chimpanzees became accustomed to close observation, remarkable discoveries began. Researchers witnessed a range of unexpected behaviours, including fashioning and using tools, hunting, meat-eating, food sharing and lethal fights between members of neighbouring communities.

{E} As early as 1973, Goodall recorded 13 forms of tool use as well as eight social activities that appeared to differ between the Gombe chimpanzees and chimpanzee populations elsewhere. She

ventured that some variations had what she termed 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. Animals do not have myths and legends, of course. But they do have the capacity to pass on behavioural traits from generation to generation, not through their genes but by learning. For biologists, this is the fundamental criterion for a cultural trait: it must be something that can be learned by observing the established skills of others and thus passed on to future generations

{F} What of the implications for chimpanzees themselves? We must highlight the tragic loss of chimpanzees, whose populations are being decimated just when we are at last coming to appreciate these astonishing animals more completely. Populations have plummeted in the past century and continue to fall as a result of illegal trapping, logging and, most recently, the bushmeat trade. The latter is particularly alarming: logging has driven roadways into the forests that are now used to ship wild-animal meat—including chimpanzee meat to consumers as far afield as Europe. Such destruction threatens not only the animals themselves but also a host of fascinatingly different ape cultures.

{G} Perhaps the cultural richness of the ape may yet help in its salvation, however. Some conservation efforts have already altered the attitudes of some local people. A few organizations have begun to show 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 an international team of chimpanzee experts conducted the most comprehensive survey of the animals ever attempted. Scientists have been investigating chimpanzee culture for several decades, but too often their studies contained a crucial flaw. Most attempts to document cultural diversity among chimpanzees have relied solely on officially published accounts of the behaviours recorded at each research site. But this approach probably overlooks a good deal of cultural variation for three reasons.

{I} First, scientists typically don't publish an extensive list of all the activities they do not see at a particular location. Yet this is exactly what we need to know—which behaviours were and were not observed at each site. Second, many reports describe chimpanzee behaviours without saying how common they are; without this information, we can't determine whether a particular action was a once-in-a-lifetime aberration or a routine event that should be considered part of the animals' culture. Finally, researchers' descriptions of potentially significant chimpanzee behaviours frequently lack sufficient detail, making it difficult for

scientists working at other spots to record the presence or absence of the activities.

{J} To remedy these problems, the two of us decided to take a new approach. We asked field researchers at each site for a list of all the behaviours they suspected were local traditions. With this information in hand, we pulled together a comprehensive list of 65 candidates for cultural behaviours.

{K} Then we distributed our list to the team leaders at each site. In consultation with their colleagues, they classified each behaviour in terms of its occurrence or absence in the chimpanzee community studied. The key categories were 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 (seen at the site but not habitual), absent (never seen), and unknown.

### ***Questions 1-5***

*The reading Passage has seven paragraphs 1-5.*

*Which paragraph contains the following information?*

*Write the correct letter G-K, in boxes 1-5 on your answer sheet.*

**Question 1:-** A problem of researchers on chimpanzee culture which are only based on official sources.

**Question 2:-** Design a new system by two scientists aims to solve the problem.

**Question 3:-** Reasons why previous research on ape culture is problematic.

**Question 4:-** Classification of data observed or collected.

**Question 5:-** An example that shows the tragic outcome of animals leading to an indication of the change in local people's attitude in the preservation

### **Questions 6-10**

*Do the following statements agree with the information given in Reading Passage? In boxes 6-10 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

**Question 6:-** Research found that chimpanzees will possess the same complex culture as humans.

**Question 7:-** Human and apes ancestors lived together long ago and share most of their genetic substance.

**Question 8:-** Jane Goodall observed many surprising features of complex behaviours among chimpanzees.

**Question 9:-** Chimpanzees, like humans, deliver cultural behaviours mostly from inheritance. genetic

**Question 10:-** For decades, researchers have investigated chimpanzees by data obtained from both unobserved and observed approaches.

### **Questions 11-14**

*Answer the questions below.*

***Choose NO MORE THAN THREE WORDS AND/OR A***

***NUMBER from the passage for each answer.***

**Question 11:-** When did the unexpected discoveries of chimpanzee behaviour start?

**Question 12:-** Which country is the research site of Toshisada Nishida and Jane Goodall?

**Question 13:-** What did the chimpanzee have to get used to in the initial study?

**Question 14:-** What term can depict it that Jane Goodall found the chimpanzee used tool in 1973?

### Answers

1	H	8	TRUE
2	J	9	TRUE
3	I	10	FALSE
4	K	11	IN THE 1960s
5	G	12	TANZANIA
6	NOT GIVEN	13	(CLOSE) OBSERVATION / OBSERVERS
7	TRUE	14	(A) CULTURE ORIGIN

**TEST 15:****The Innovation of Grocery Stores****PASSAGE**

A At the beginning of the 20th century, grocery stores in the United States were full-service. A customer would ask a clerk behind the counter for specific items and the clerk would package the items, which were limited to dry goods. If they want to save some time, they have to ask a delivery boy or by themselves to send the note of what they want to buy to the grocery store first and then go to pay for the goods later. These grocery stores usually carried only one brand of each good. There were early chain stores, such as the A&P Stores, but these were all entirely full-service and very time-consuming.

B In 1885, a Virginia boy named Clarence Saunders began working part-time as a clerk in a grocery store when he was 14 years old, and quit school when the shopkeeper offered him full time work with room and board. Later he worked in an Alabama coke plant and in a Tennessee sawmill before he returned to the grocery business. By 1900, when he was nineteen years old, he was earning \$30 a month as a salesman for a wholesale grocer. During his years working in the grocery stores, he found that it was very inconvenient and inefficient for people to buy things because more than a century ago, long before there were

computers, shopping was done quite differently than it is today. Entering a store, the customer would approach the counter (or wait for a clerk to become available) and place an order, either verbally or, as was often the case for boys running errands, in the form of a note or list. While the customer waited, the clerk would move behind the counter and throughout the store, select the items on the list—some from shelves so high that long-handled grasping device had to be used—and bring them back to the counter to be tallied and bagged or boxed. The process might be expedited by the customer calling or sending in the order beforehand, or by the order being handled by a delivery boy on a bike, but otherwise it did not vary greatly. Saunders, a flamboyant and innovative man, noticed that this method resulted in wasted time and expense, so he came up with an unheard-of solution that would revolutionize the entire grocery industry: he developed a way for shoppers to serve themselves.

C So in 1902 he moved to Memphis where he developed his concept to form a grocery wholesale cooperative and a full-service grocery store. For his new “cafeteria grocery”, Saunders divided his grocery into three distinct areas: 1) A front “lobby” forming an entrance and exit and checkouts at the front. 2) A sales department, which was specially designed to allow customers to roam the aisles and select their own groceries. Removing unnecessary clerks, creating elaborate aisle displays, and rearranging the store to force customers to view all of the

merchandise and over the shelving and cabinets units of sales department were “galleries” where supervisors were allowed to keep an eye on the customers while not disturbing them. 3) And another section of his store is the room only allowed for the clerks which was called the “stockroom” or “storage room” where large refrigerators were situated to keep fresh products from being perishable. The new format allowed multiple customers to shop at the same time, and led to the previously unknown phenomenon of impulse shopping. Though this format of grocery market was drastically different from its competitors, the style became the standard for the modern grocery store and later supermarket.



The Innovation of Grocery Stores

D On September 6, 1916, Saunders launched the self-service revolution in the USA by opening the first self-service Piggly Wiggly store, at 79 Jefferson Street in Memphis, Tennessee, with its characteristic turnstile at the entrance. Customers paid cash

and selected their own goods from the shelves. It was unlike any other grocery store of that time. Inside a Piggly Wiggly, shoppers were not at the mercy of shop clerks. They were free to roam the store, check out the merchandise and get what they needed with their own two hands and feet. Prices on items at Piggly Wiggly were clearly marked. No one pressured customers to buy milk or pickles. And the biggest benefit at the Piggly Wiggly was that shoppers saved money. Self-service was a positive all around. “It’s good for both the consumer and retailer because it cuts costs,” noted George T. Haley, a professor at the University of New Haven and director of the Center for International Industry Competitiveness. “If you looked at the way grocery stores were run previous to Piggly Wiggly and Alpha Beta, what you find is that there was a tremendous amount of labor involved, and labor is a major expense.” Piggly Wiggly cut the fat.

Even Piggly Wiggly and the self-service concept took off. Saunders opened nine stores in the Memphis area within the first year of business. Consumers embraced the efficiency, the simplicity and most of all the lower food prices. Saunders soon patented his self-service concept, and began franchising Piggly Wiggly stores. Thanks to the benefits of self-service and franchising, Piggly Wiggly ballooned to nearly 1,300 stores by 1923. Piggly Wiggly sold \$100 million—worth \$1.3 billion today—in groceries, making it the third-biggest grocery retailer in the nation. The company’s stock was even listed on the New York Stock

Exchange, doubling from late 1922 to March 1923. Saunders had his hands all over Piggly Wiggly. He was instrumental in the design and layout of his stores. He even invented the turnstile. F However Saunders was forced into bankruptcy in 1923 after a dramatic spat with the New York Stock Exchange and he went on to create the “Clarence Saunders sole-owner-of-my-name” chain, which went into bankruptcy.

G Until the time of his death in October 1953, Saunders was developing plans for another automatic store system called the Foodelectric. But the store, which was to be located two blocks from the first Piggly Wiggly store, never opened. But his name was well-remembered along with the name Piggly Wiggly

#### QUESTIONS

**Questions 1-5** The reading Passage has seven paragraphs A-G. Which paragraph contains the following information? Write the correct letter A-G, in boxes 1-5 on your answer sheet.

**NB You may use any letter more than once.**

- 1 How Clarence Saunders' new idea had been carried out.
- 2 Introducing the modes and patterns of groceries before his age.
- 3 Clarence Saunders declared bankruptcy a few years later .
- 4 Descriptions of Clarence Saunders' new conception.
- 5 The booming development of his business.

**Questions 6-10** Answer the questions below. Write ONLY ONE WORD AND/OR A NUMBER from the passage for each answer.

**6** When Clarence Saunders was an adolescent, he took a job as a ..... in a grocery store.

**7** In the new innovation of grocery store, most of the clerks' work before was done by .....

**8** In Saunders' new grocery store, the section where customers finish the payment was called .....

**9** Another area in his store which behind the public area was called the ..... , where only internal staff could access.

**10** At ..... where customers were under surveillance.

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

**11 Why did Clarence Saunders want to propel the innovation of grocery stores at his age?**

A Because he was an enthusiastic and creative man.

B Because his boss wanted to reform the grocery industry.

C Because he wanted to develop its efficiency and make great profit as well.

D Because he worried about the future competition from the industry.

**12 What happened to Clarence Saunders' first store of Piggly Wiggly?**

A Customers complained about its impracticality and inconvenience.

B It enjoyed a great business and was updated in the first twelve months.

C It expanded to more than a thousand franchised stores during the first year.

D Saunders were required to have his new idea patented and open more stores.

### 13 What left to Clarence Saunders after his death in 1953?

A A fully automatic store system opened soon near his first store.

B The name of his store the Piggly Wiggly was very popular at that time.

C His name was usually connected with his famous shop the Piggly Wiggly in the following several years.

D His name was painted together with the name of his famous store.

---

## ANSWERS

1. D
2. A
3. F
4. C
5. E
6. clerk
7. customers/shoppers
8. lobby
9. stockroom
10. galleries
11. C
12. B
13. C

### TEST 16:

**IELTS WINNERS**

The Connection Between Culture and Thought

A

*Crack IELTS the easy way*

The world's population has surpassed 7 billion and continues to grow. Across the globe, humans have many differences. These differences can be influenced by factors such as geography, climate, politics, nationality, and many more. Culture is one such aspect that can change the way people behave.

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B

Your culture may influence your clothing, your language, and many aspects of your life. But is culture influential enough to change the way an individual thinks? It has long been believed that people from different cultures would think differently. For example, a young boy from a farm would talk about cows while a boy from New York will talk about cars. If two young children from different countries are asked about their thoughts about a painting, they would answer differently because of their cultural backgrounds.

C

In recent years, there has been new research that changed this long-held belief; However, this new research is not the first to explore the idea that culture can change the way we think. Earlier research has provided valuable insight to the question. One of the earliest research projects was carried out in the Soviet Union. This project was designed to find out whether culture would affect peoples way of thought processing. The researchers focused on how living environment and nationality might influence how people think. The experiment led by Bessett aimed to question such awareness of cognitive psychology. Bessett conducted several versions of the experiment to test different cognitive processes.

D

One experiment led by Bessett and Masuku showed an animated video picturing a big fish swimming among smaller fish and other

sea creatures. Subjects were asked to describe the scene. The Japanese participants tended to focus on the aquatic background, such as the plants and colour of the water, as well as the relationship between the big and small fish. American participants tended to focus on individual fishes, mainly the larger, more unique looking fish. The experiment suggested that members of Eastern cultures focus more on the overall picture, while members of Western culture focus more on the individuals.

## E

In another experiment performed by Bessett and Choi, the subjects were presented with some very convincing evidence for a position. Both the Korean and the American showed strong support. And after they were given some evidence opposing the position, the Korean started to modified or decreased their support. However, the American began to give more support to the former argument. This project suggested that in Korean culture, support for arguments is based on context. Ideas and conclusions are changeable and flexible, so an individual may be more willing to change his or her mind. For Americans, they were less willing to change their original conclusion.

## F

Bessett and Ara devised an experiment to test the thought processing of both oriental and occidental worlds. Test subject was given an argument “All animals with furs hibernate. Rabbit has fur. Therefore, rabbit hibernate”. People from the eastern

world questioned the argument as not being logical, because in their knowledge some furry animals just don't hibernate. But the American think the statement is right. They assume the logic deduction is based on a correct argument, thus the conclusion is right since the logic is right.

## G

From these early experiments in the Soviet Union, one might conclude that our original premise—that culture can impact the way we think—was still correct. However, recent research criticises this view, as well as Bessett's early experiments. Though these experiments changed the original belief on thought processing, how much does it result from all factors needs further discussion. Fischer thinks Bessett's experiments provide valuable information because his research only provides qualitative descriptions, not results from controlled environment. Chang partly agrees with him, because there are some social factors that might influence the results.

## H

Another criticism of Bessett's experiments is that culture was studied as a sub-factor of nationality. The experiments assumed that culture would be the same among all members of a nationality. For example, every American that participated in the experiments could be assumed to have the same culture. In reality, culture is much more complicated than nationality. These early experiments did not control for other factors, such as

socioeconomic status, education, ethnicity, and regional differences in culture. All of these factors could have a big effect on the individual's response.

I

A third criticism of Bessett's experiment is that the content itself should have been more abstract, such as a puzzle or an IQ test. With objective content, such as nature and animals, people from different countries of the world might have different pre-conceived ideas about these animals. Prior knowledge based on geographic location would further complicate the results. A test that is more abstract, or more quantitative, would provide a more controlled study of how cognitive processing works for different groups of people.

J

The research on culture's effect on cognitive processing still goes on today, and while some criticisms exist of Bessett's early studies, the projects still provide valuable insight. It is important for future research projects to control carefully for the variables, such as culture. Something like culture is complex and difficult to define. It can also be influenced by many other variables, such as geography or education styles. When studying a variable like culture, it is critical that the researcher create a clear definition for what is—and what is not—considered culture.

K

Another important aspect of modern research is the ethical impact of the research. A researcher must consider carefully whether the results of the research will negatively impact any of the groups involved. In an increasingly globalised job economy, generalisations made about nationalities can be harmful to prospective employees. This information could also impact the way tests and university admissions standards are designed, which would potentially favor one group or create a disadvantage for another. When conducting any research about culture and nationality, researchers should consider all possible effects, positive or negative, that their conclusions may have when published for the world to see.

#### Questions 1-5

Reading Passage 1 has eleven paragraphs, A-K.

Which paragraph contains the following information?

Write the correct letter, A-K, in boxes 1-5 on your answer sheet.

**NB** You may use any letter more than once.

- 1 All people have the same reaction to a certain point of view.
- 2 Qualitative descriptions are valuable in exploring thought processing.
- 3 Different cultures will affect the description of the same scene.
- 4 We thought of young people as widely different at different geographical locations.
- 5 Eastern people are less likely to stick to their argument.

## Questions 6-9

Look at the following statements (Questions 6-9) and the list of researchers below.

Match each statement with the correct researcher, A-C.

Write the correct letter, A-C, in boxes 6-9 on your answer sheet.

**NB** You may use any letter more than once.

### List of Researchers

A Bessett & Masuku

B Bessett & Choi

C Bessett & Ara

- 6 Geographical location affects people's position on certain arguments.
- 7 Animated images reveal different process strategies.
- 8 Eastern people challenge a deduction because they knew it is not true.
- 9 Eastern people find more difficulty when asked to identify the same object.

## Questions 10-13

Complete the sentences below.

Choose NO MORE THAN TWO WORDS from the passage for each answer

Write your answers in boxes 10-13 on your answer sheet.

- 10 Researchers in the Soviet Union wanted to find out how ..... and nationality will control the way people think.

**11** Bessett and Ara's experiment shows, for Americans, so long as the logic deduction is based on a correct argument, the ..... should be right.

**12** Fischer thinks Bessett's research is quite valuable because it is conducted in a ..... way rather than in controlled environment.

**13** Future researchers on culture's effect on cognitive processing should start with a ..... of culture as a variable.

**ANSWERS:**

- 
1. E
  2. G
  3. D
  4. B
  5. E
  6. B
  7. A
  8. C
  9. A
  10. living environment
  11. conclusion
  12. qualitative
  13. clear definition

TEST 17: 29 JAN 2022

### 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 “T” 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 reanalyzed 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**

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

*Write your answers in boxes 1-4 on your answer sheet.*

**Question 1:-** how did the traditional way to prevent damage of the bridges before the invention of the new monitoring system  
 (A) bridge has 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

**Question 2:-** How does the new microwave monitors find out the problems of bridges

- (A) by changing 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

**Question 3:-** why did the expert believe there is a problem for the design called “fracture critical”

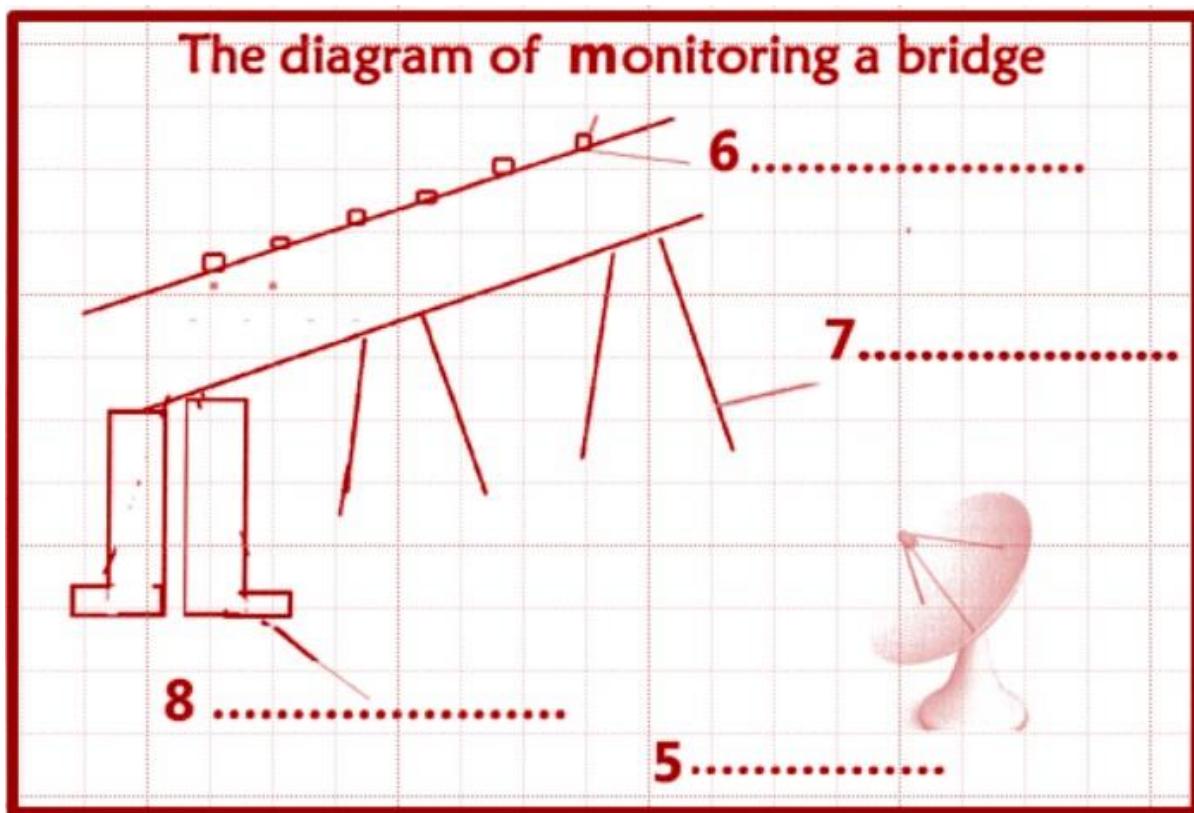
- (A) engineers failed to apply the newly developed construction materials
- (B) there was not enough finance to repair the bridges
- (C) the supporting parts of the bridges may crack and cause the bridge to fail
- (D) there were bigger traffic load conditions than the designers had anticipated

**Question 4:-** Defect was not recognized by a basic method in the beginning

- (A) until the mid of faces of bridges has fractures
- (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**

*Filling the blanks in the diagram labels Write the correct answer in boxes 5-8 on your answer sheet.*



### **Questions 9-13**

*The reading Passage has seven paragraphs A-H.*

*Which paragraph contains the following information?*

*Write the correct letter A-H, in boxes 9-13 on your answer sheet.*

**Question 9:-** how is the pressure that they have many a great chance to test bridges

**Question 10:-** A ten-year positive change for microwave device

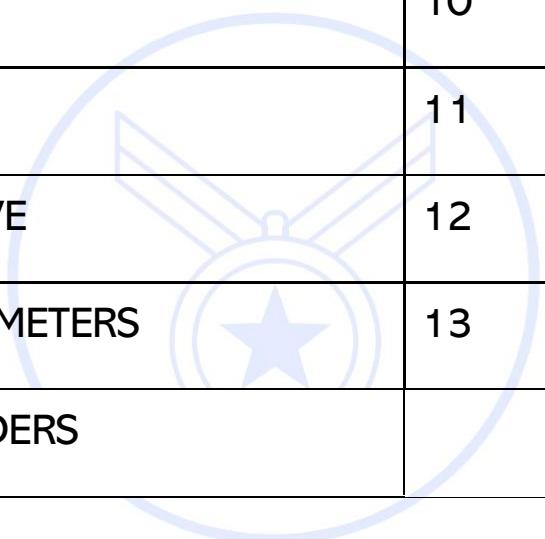
**Question 11:-** the chance they get an honourable contract

**Question 12:-** explanation of the mechanism for the new microwave monitoring to work

**Question 13:-** How is the damage deliberately created by the researchers

**Answers**

1	D	8	FLANGE
2	C	9	C
3	C	10	H
4	B	11	G
5	MICROWAVE	12	B
6	ACCELEROMETERS	13	E
7	STEEL GIRDERS		



IELTS WINNERS

*Crack IELTS the easy way*

## TEST 18:

**The history of cakes at weddings**

**THE ROYAL WEDDING CAKE.**  
For most Gracious Majesty Queen Victoria and the Royal Highness Prince Albert  
Married February 10<sup>th</sup> 1840.

This elegant cake, magnificently decorated in silvered and golded sugar, was served upon the royal marriage at Windsor Castle, Feb. 10<sup>th</sup>, 1840.  
The cake represented the Return of Restoration, showing the situation: Bride and Bridegroom, seated in the front; Queen Victoria, & Prince Albert, standing behind them; a dog to denote fidelity & a cat the tail of the Queen; two pairs of doves, symbolizing fidelity; two small swallows hovering above; a lion rampant; and over with a ribbon suspended one foot above around the neck of the Queen. The portion of the cake was surrounded with decorative borders of various flowers & fruits, scattered at another height were placed four or five pieces to the guests.

These handsome and elegant cakes are the production of Mr. Blundell, the famous Confectioner in the Royal Establishment at Windsor Castle.  
Send to your dealer in W. B. Smith's Royal Confectionery, or the Candy-Making Institute, Newgate-street, London.

Copyright & Published by A. C. M. Smith, of Apparatus to the Royal Family.

London: Printed

In Western cultures, since antiquity. Weddings customarily have been celebrated with a special cake. Ancient Roman wedding ceremonies were finalized by breaking a cake of wheat or barley over the bride's head as a symbol of good fortune. The newly married couple then ate some of the crumbs together. Afterward, the wedding guests gathered up the remaining crumbs as tokens of good luck. Wedding guests were also supplied with sweetmeats called confetti, a sweet mixture of nuts, dried fruit and honeyed almonds. Handfuls of confetti were showered over the bride and groom; indeed, it seems to have been the custom to throw confetti about enthusiastically. Eventually, confetti in the form of sweets and nuts was replaced with rice, flower petals, or colored paper, and these new types of confetti continue to be thrown over newly married couples in many countries around the world.

## IELTS WINNERS

When the Romans invaded Britain in 43 AD, many of their customs and traditions became part of British life. These customs included their wedding customs, and when the Normans invaded Britain in 1066 they brought many French traditions. Other changes came about due to increased trade and contact with Europe, but present-day British wedding traditions remain firmly rooted in the past. In medieval Britain, small spiced buns, which were common everyday fare, were often eaten at weddings. These were stacked in a towering pile, as high as possible. If the bride

and groom were able to kiss over the tall stack, it augured a lifetime of riches. The earliest British recipe exclusively for eating at weddings is Bride Pie, which was recorded in 1685. This was a large round pie with an elaborately decorated pastry crust that concealed a filling of oysters, pine nuts lamb and spices. Each guest had to eat a small piece of the pie not to do so was considered extremely impolite. A ring was traditionally placed in the pie, and the lady who found it would be next to marry.

In the 17<sup>th</sup> century, Bride Pie was changed into Bride Cake, the predecessor of the modern British wedding cake. Cakes containing dried fruit and sugar, symbols of prosperity, gradually became the centerpieces for weddings. Some people made Bride Cake in the cheaper form of two large rounds of pastry sandwiched together with currants and sprinkled with sugar. Very few homes at the time could boast of having ovens, but this type of pastry cake could be cooked on a baking stone on the hearth.

Later in the 17<sup>th</sup> century, there was a new development when wedding cakes began to be made in pairs, one for the bride and another for the groom. Both cakes were dark, heavy fruitcakes; the groom's cake was smaller than the bride's cake, and was cut up into little squares that were placed in boxes for the guests to take home as a wedding memento. Groom's cakes gradually died

out and are no longer part of British weddings. However, the tradition has undergone a revival in the United States, where for many years the groom's cake has served as a wedding gift for guests. Modern groom's cakes are often formed and decorated to depict the groom's hobby, for example a golf bag, a camera, a chess board.

Groom's cakes were never covered with icing, but Bride Cake covered with white icing first appeared sometime in the 17<sup>th</sup> century. After the cake was baked, it was covered with a pure white, smooth icing made with double refined sugar, egg whites, and orange-flower water. The mixture was beaten for two hours, then spread over the cake and dried in the oven until hard. A pure white color was much sought after for wedding cake icing because white icing meant that only the finest refined sugar had been used. Thus a pure white cake was a status symbol, as it displayed the family's wealth.

The late 1800s in Britain saw the introduction of a new tradition, with the first multi-tiered wedding cakes. These were impressive cakes: they were heavy because they were made with so much dried fruit, and highly decorated with icing and embellished with sugar flowers, doves, horseshoes and bells. The first multi-tiered cakes comprised iced cakes stacked on top of each other rather

like a succession of boxes gradually decreasing in size. The cakes from the upper tiers did not sink into the lower tiers because they were a bit put on top of each other until the icing between each cake had had time to harden. It was not until the beginning of the 20<sup>th</sup> century that the cake tiers were separated and supported by columns.

Twenty-first-century weddings are big business for Britain's wedding industry. Over 300,000 people get married each year and a wedding can cost thousands of pounds. The cost of the all-important wedding cake can be hundreds of pounds, depending on the dimension and design. It will be interesting to see whether wedding cakes continue to be popular at weddings.

## QUESTIONS 1 - 6

## IELTS WINNERS

*Do the following statements agree with the information given in  
Reading Passage 1?*

*In boxes 1-6 on your answer sheet, write*

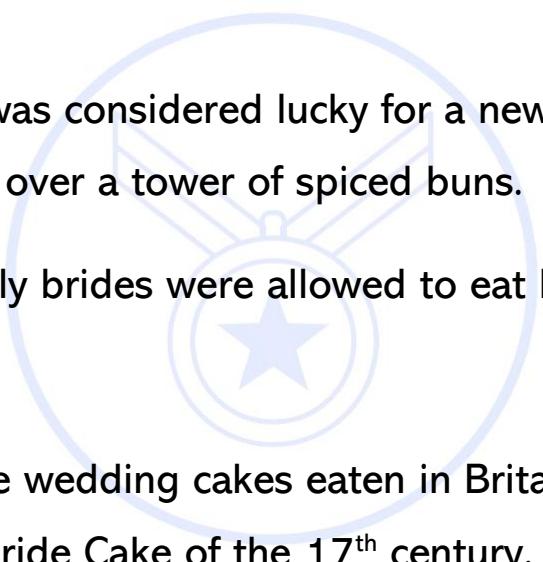
**TRUE** \_\_\_\_\_ *if the statement agrees with the information*

**FALSE** \_\_\_\_\_ *if the statement contradicts the information*

**NOT GIVEN** \_\_\_\_\_ *if there is no information on this*

- 1   Breaking a cake over the bride's head was the last part of an ancient Roman wedding ceremony.

- 2  Confetti is still made of nuts, dried fruit and honeyed almonds.
- 3  The groom's family used to supply the confetti.
- 4  It was considered lucky for a newly married couple to be able to kiss over a tower of spiced buns.
- 5  Only brides were allowed to eat Bride Pie.
- 6  The wedding cakes eaten in Britain today developed from Bride Cake of the 17<sup>th</sup> century.



IELTS WINNERS

**QUESTIONS 7 - 9**

*Crack IELTS the easy way*

*Complete the notes below.*

*Choose **ONE WORD ONLY** from the passage for each answer.*

*Write your answer in boxes 7-9 on your answer sheet.*

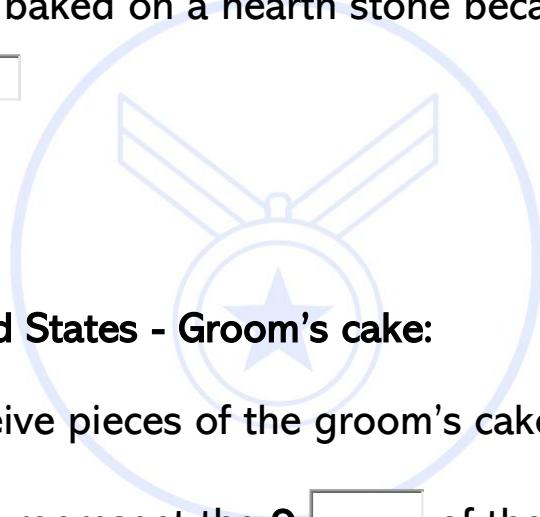
**Wedding cakes**

•

### **17<sup>th</sup> century- Britain Bride Cake:**

- expensive ingredients were a sign of wealth
- less expensive round cakes were made of 7  with currants in between and sugar on top
- they were baked on a hearth stone because not all homes had 8

•



### **Now- United States - Groom's cake:**

- guest receive pieces of the groom's cake
- cakes may represent the 9  of the groom

### **QUESTIONS 10 - 13**

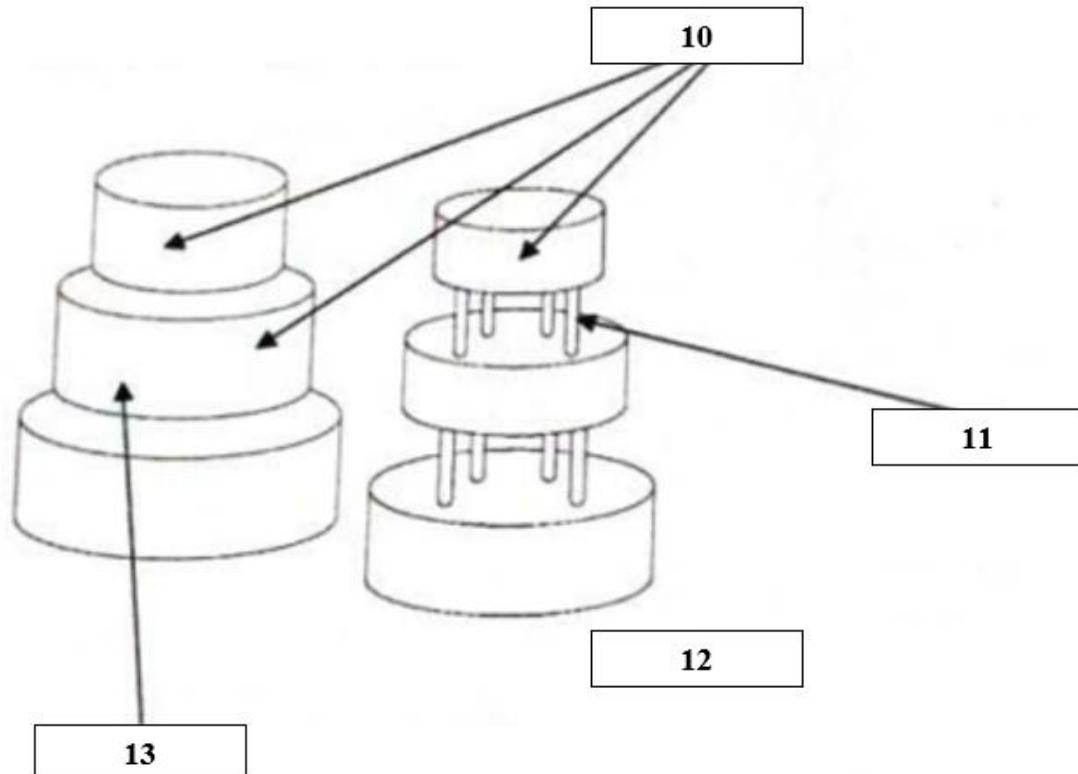
*IELTS WINNERS*  
*Crack IELTS the easy way*

*Label the diagram below.*

*Choose ONE WORD ONLY from the passage for each answer.*

*Write your answers in boxes 10-13 on your answer sheet.*

---



10. Examples of wedding cakes with several 10 .

11. In the early 1900s, 11  were used to keep individual cakes apart.

*Crack IELTS the easy way*

12. The size of these cakes as well as their 12  affects pricing.

13. Hardened 13  between cakes stopped higher cakes sinking into tower cakes.

**Answer**

1. TRUE	8. OVENS
2. FALSE	9. HOBBY
3. NOT GIVEN	10. BOXES
4. TRUE	11. COLUMNS
5. FALSE	12. DESIGN
6. TRUE	13. ICING
7. PASTRY	

*Crack IELTS the easy way*

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## TEST 19:

### Sleep

***You should spend about 20 minutes on Questions 1-15, which are based on Reading Passage below.***

A. Like many things about your body, scientists and medical professionals still have a lot to learn about the process of sleep. One earlier misconception that has now been revised is that the body completely slows down during sleep; it is now dear that the body's major organs and regulatory systems continue to work actively – the lungs, heart and stomach for example. Another important part of the body also operates at night – the glands and lymph nodes, which strengthen the immune system. This is commonly why the body's natural immunity is weakened with insufficient sleep.

*Crack IELTS the easy way*

B. In some cases, certain systems actually become more active while we sleep. Hormones required for muscle development and growth, for instance, as well as the growth of new nerve cells. In the brain, activity of the pathways needed for learning and memory is increased.

C. Another common myth about sleep is that the body requires less sleep the older we get. Whilst It is true that babies need 16

hours compared to 9 hours and 8 hours respectively for teenagers and adults, this does not mean that older people need less sleep. However, what is true is that for a number of different factors, they often get less sleep or find their sleep less refreshing. This is because as people age, they spend less time in the deep, restful stages of sleep and are more easily awakened. Older people are also more likely to have medical conditions that affect their sleep, such as insomnia, sleep apnoea and heart problems.

D. Getting a good sleep is not just a matter of your head hitting the pillow at night and waking up in the morning. Your sleep goes in cycles throughout the night, moving back and forth between deep restorative sleep and more alert stages with dreaming. As the night progresses, you spend more time in a lighter dream sleep.

E. Sleep patterns can be broken down into two separate and distinct stages – REM and NREM sleep, REM (Rapid Eye Movement) sleep is when you dream. You usually have 3 to 5 periods of REM sleep each night, lasting from 5 minutes to over an hour, during which time your body's activities increase. Breathing becomes fast, shallow and uneven, with an increase in brain activity, heartbeat and blood pressure. Although your major muscles generally don't move, fingers and toes may twitch and

body temperature changes and you may sweat or shiver.

F. Research has concluded that this sleep is most important for your brain. It is when it is most active, processing emotions and memories and relieving stress. The areas used for learning and developing more skills are activated. In fact, the brain waves measured during REM sleep are similar to those measured when awake.

G. NREM (Noil-Rapid Eye Movement) sleep is dreamless sleep. NREM sleep consists of four stages of deeper and deeper sleep. As you move through the stages, you become more relaxed, less aware of what is happening around you and more difficult to wake. Your body's activity will also decrease as you move through the NREM stages, acting in the opposite manner to REM sleep. Stage 1 of NREM sleep is when you are falling to sleep. This period generally lasts between 5 and 10 minutes, during which time you can be woken easily. During stage 2, you are in a light sleep- the in-between stage before your fall into a deep sleep. It lasts about 20 minutes. In stage 3, deep sleep begins, paving the way for stage 4, in which you are difficult to awake and unaware of anything around you. This is when sleep walking and talking can occur. This is the most important stage for your body. Your brain has slowed right down and is recovering. Blood flow is redirected from your brain to your large muscles allowing

them to mend any damage from your day at work. People woken quickly from stage 4 sleep often feel a sense of disorientation, which is why it is helpful to use an alarm clock with an ascending ring.

H. About an hour and a half into your sleep cycle you will go from deep Stage 4 sleep back into light Stage 2 sleep, then into REM sleep, before the cycle begins again. About 75% of your sleep is NREM sleep. If you sleep for eight hours, about six of them will be NREM sleep. As the night progresses, you spend more time in dream sleep and lighter sleep.

I. When you constantly get less sleep (even 1 hour less) than you need each night, it is called sleep debt. You may pay for it in daytime drowsiness, trouble concentrating, moodiness, lower productivity and increased risk of falls and accidents. Although a daytime nap cannot replace a good night's sleep, it can help make up for some of the harm done as a result of sleep debt. But avoid taking a nap after 3 pm as late naps may stop you getting to sleep at night. And avoid napping for longer than 30 minutes as longer naps will make it harder to wake up and get back into the swing of things.

## Questions 1 – 4

***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) It was previously believed that biological processes slowed during sleep.
- 2) Teenagers lose less sleep than adults when they have a medical condition.
- 3) During the night, our sleep becomes increasingly deep.
- 4) Lack of sleep can cause heart problems and other medical conditions.

## Questions 5 – 8

5) REM sleep can help reduce \_\_\_\_\_.

6) During REM sleep, \_\_\_\_\_ are similar to those recorded whilst awake.

7) During Stage 1 NREM sleep, you can be \_\_\_\_\_ with

little effort.

8) Suddenly being woken from deep sleep can cause

\_\_\_\_\_.

Questions 9 and 10

*Choose TWO letters, A-E.*

*Write your answers in boxes 9 and 10.*

*Your answers may be given in either order.*

*REM sleep*

- A. is more common for younger people.
- B. is when we dream.
- C. may cause your extremities to move of their own accord.
- D. lasts about an hour a night.
- E. is when the brain is most relaxed.

Questions 11 – 15

*The reading passage has nine paragraphs, A-I.*

*Which paragraph contains the following information?*

*Write the correct letter A-I in boxes 11-15.*

11) Differences in sleep patterns between generations

12) Brain activity is limited as resources are diverted

- 13) Repetition of the cycle**
- 14) Dangers of accumulated lack of sleep**
- 15) Increased activity during sleep**

## Answers

- 1) True**

One earlier misconception that has now been revised is that the body completely slows down during sleep.

- 2) Not Given**

We know that older people sleep less with a medical condition, but no reference is made of teenagers with medical concerns.

- 3) False**

'As the night progresses, you spend more time in a lighter dream sleep.'

- 4) False**

Medical conditions can affect sleep, not the other way round.

- 5) Stress**

'REM...sleep is most important for your brain. It is when it is most active, processing emotions and memories and relieving stress.'

**6) Brain waves**

'...brain waves measured during REM sleep are similar to those measured when awake.'

**7) (easily) woken**

'This period generally lasts between 5 and 10 minutes, during which time you can be woken easily.'

**8) Disorientation**

People woken quickly from stage 4 sleep often feel a sense of disorientation

**9) B/C** See below**10) B/C**

'REM (Rapid Eye Movement) sleep is when you dream.'

'fingers and toes may twitch'

*Crack IELTS the easy way*

**11) C**

The paragraph talks about babies, teenagers and older people.

---

**12) G**

'Blood flow is redirected from your brain to your large muscles'

**13) H**

'About an hour and a half into your sleep cycle you will go from

deep Stage 4 sleep back into light Stage 2 sleep, then into REM sleep, before the cycle begins again.'

#### 14) I

'When you constantly get less sleep (even 1 hour less) than you need each night, it is called sleep debt. You may pay for it in daytime drowsiness, trouble concentrating, moodiness, lower productivity and increased risk of falls and accidents.'

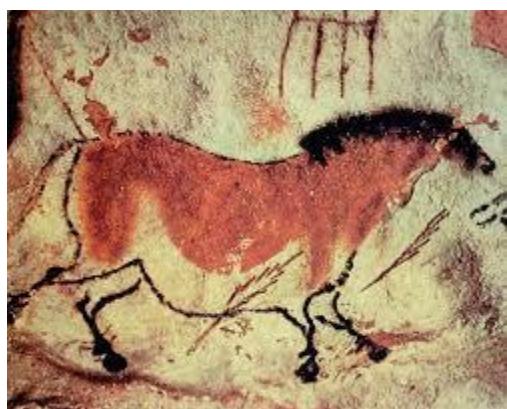
#### 15) E

'...during which time your body's activities increase.'



#### TEST 20:

#### Prehistoric Cave Paintings Took up to 20,000 Years to Complete



**WINNERS**  
LTS the easy way

It may have taken Michelangelo four long years to paint his fresco on the ceiling of the Sistine Chapel, but his earliest predecessors spent considerably longer perfecting their own masterpieces. Scientists have discovered that prehistoric cave paintings took up to 20,000 years to complete. Rather than being created in one

session, as archaeologists previously thought, many of the works discovered across Europe were produced over hundreds of generations, who added to, refreshed and painted over the original pieces of art.

Until now it has been extremely difficult to pinpoint when prehistoric cave paintings and carvings were created, but a pioneering technique is allowing researchers to date cave art accurately for the first time and show how the works were crafted over thousands of years. Experts now hope the technique will provide a valuable insight into how early human culture developed and changed as the first modern humans moved across Europe around 40,000 years ago.

Dr Alistair Pike, an archaeologist at Bristol University who is leading the research, said: 'The art gives us a really intimate window into the minds of the individuals who produced it, but what we don't know is exactly which individuals they were as we don't know exactly when the art was created. If we can date the art then we can relate that to the artefacts we find in the ground and start to link the symbolic thoughts of these individuals to where, when and how they were living.'

Hundreds of caves have been discovered across Europe with elaborate prehistoric paintings and carvings on their walls. It is thought the designs, which often depict scenes of animals, were created up to 40,000 years ago – some time after humans began

moving from southern Europe into northern Europe during the last ice age.

Traditional dating techniques have relied on carbon dating the charcoal and other pigment used in the paintings, but this can be inaccurate as it only gives the date the charcoal was created not when the work was crafted.'When you go into these caves today there is still charcoal lying on the ground, so the artists at the time could have been using old charcoal rather than making it fresh themselves,' explained Dr Pike.

'If this was the case, then the date for the painting would be very wrong. Taking samples for carbon dating also means destroying a bit of these precious paintings because you need to take away a bit of the pigment. For carvings, it is virtually impossible to date them as there is no organic pigment containing carbon at all.'

The scientists have used their technique to date a series of famous Palaeolithic paintings in Altamira cave, northern Spain. Known as the 'Sistine Chapel of the Palaeolithic', the elaborate works were thought to date from around 14,000 years ago. But in research published by the Natural Environment Research Council's new website Planet Earth, Dr Pike discovered some of the paintings were between 25,000 and 35,000 years old. The youngest paintings in the cave were 11,000 years old. Dr Pike said:'We have found that most of these caves were not painted in one go, but the painting spanned up to 20,000 years.This goes against what the archaeologists who excavated in the caves

found. It is probably the case that people did not live in the caves they painted. It seems the caves they lived in were elsewhere and there was something special about the painted caves.'

Dr Pike and his team were able to date the paintings using a technique known as uranium series dating, which was originally developed by geologists to date rock formations such as stalactites and stalagmites in caves. As water seeps through a cave, it carries extremely low levels of dissolved radioactive uranium along with the mineral calcium carbonate. Over time small amounts of calcium carbonate are deposited to form a hard layer over the paintings and this layer also traps the uranium. Due to its radioactive properties, the uranium slowly decays to become another element known as thorium. By comparing the ratio of uranium to thorium in the thin layers on top of the cave art, the researchers were able to calculate the age of the paintings.

The researchers have also applied their technique to engravings found in rocks around Creswell Crags in Derbyshire, which are Britain's only examples of ice age cave art. They proved the engravings were made at least 12,000 years ago. Professor Pablo Arias, an expert on Palaeolithic cave art at the University of Cantabria, Spain, said: 'Until about ten years ago it was only possible to date cave art by using the style of the figures, but this new technique developed by Bristol University allows that date to be accurately bracketed. We want to study how the people of the

time behaved and how they felt and Palaeolithic art gives us a way of looking at the type of symbols that were important to them, so we need to know when the people who were making the art actually lived.'

### Questions 1-5

*Do the following statements agree with the information given in Reading Passage 1? 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  Cave paintings inspired Michelangelo to paint the ceiling of the Sistine Chapel.

2  It now seems that cave paintings were painted in one go and then left untouched.

3  Dr Pike is focusing on dating artefacts found on the ground in the caves.

4  There are a number of disadvantages to using carbon dating to date paintings and carvings.

5  The Altamira cave contains more cave paintings than any other cave in Europe.

## Questions 6–8

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

6 Dr Pike believes that

- A  most caves remained undiscovered for thousands of years.
- B  archaeologists should not have excavated the caves at all.
- C  the caves were uninhabited but were treated as important.
- D  the paintings were painted by the people living in the caves.

7 Uranium series dating

- A  was previously used for other purposes.
- B  is a technique which was invented by Dr Pike.
- C  relies on the presence of stalactites in the caves.
- D  only works with caves which are underwater.

8 Professor Pablo Arias

- 
- A  is sceptical about the benefits of the new dating technique.
  - B  is enthusiastic about what the new technique will achieve.
  - C  used the technique to successfully date Creswell Crags.
  - D  believes it is necessary only to study the symbols in the art.

## Questions 9-14

*What is said about each of these things found in the caves?*

*Choose your answers from the box and write the letters A-H next to Questions 9-14.*

- A When this is removed, it damages the painting.
- B This can damage the stalactites and stalagmites in the caves.
- C Over time, this turns into a different element.
- D We could determine when it was made, but not when it was used.
- E This is produced as a result of radioactive decay.
- F Scientists used to think that this was a mineral.
- G This contains no carbon-based elements at all.
- H This can act as a firm coating over something.

9  charcoal

10  pigment

11  carving

12  uranium

13  calcium carbonate

14  thorium

**Answer**

1. NOT GIVEN	8. B
2. FALSE	9. D
3. FALSE	10. A
4. TRUE	11. G
5. NOT GIVEN	12. C
6. C	13. H
7. A	14. E

## TEST 21: FEB MONTH IELTS WINNERS

### Saving Forgotten forests

#### The longleaf pine

*Found only in the Deep South of America, longleaf pine woodlands have dwindled to about 3 per cent of their former range, but new efforts are underway to restore them.*

{A} THE BEAUTY AND THE BIODIVERSITY of the longleaf pine forest are well-kept secrets, even in its native South. Yet, it is among the richest ecosystems in North America, rivalling tallgrass

prairies and the ancient forests of the Pacific Northwest in the number of species it shelters. And like those two other disappearing wildlife habitats, longleaf is also critically endangered.

{B} In longleaf pine forests, trees grow widely scattered, creating an open, park-like environment, more like a savanna than a forest. The trees are not so dense as to block the sun. This openness creates a forest floor among the most diverse in the world, where plants such as many-flowered grass pinks, trumpet pitcher plants, Venus flytraps, lavender ladies, and pineland big buttons grow. As many as 50 different species of wildflowers, shrubs, grasses, and ferns have been catalogued in just a single square meter.

{C} Once, nearly 92 million acres of longleaf forest flourished from Virginia to Texas, the only place in the world where it is found. By the turn of the 21st century, however, virtually all of it had been logged, paved, or farmed into oblivion. Only about 3 per cent of the original range still supports longleaf forest, and only about 10,000 acres of that is uncut old-growth—the rest is a forest that has regrown after cutting.

{D} Figuring out how to bring back the piney woods also will allow biologists to help the plants and animals that depend on this habitat. Nearly two-thirds of the declining, threatened, or endangered species in the southeastern United States are associated with longleaf. The outright destruction of longleaf is

only part of their story, says Mark Danaher, the biologist for South Carolina's Francis Marion National Forest. He says the demise of these animals and plants also is tied to a lack of fire, which once swept through the southern forests regularly. "Fire is absolutely critical for this ecosystem and for the species that depend on it," says Danaher.

{E} Name just about any species that occurs in longleaf, and you can find a connection to fire. Bachman's sparrow is a secretive bird with a beautiful song that echoes across the longleaf Flatwoods. It tucks its nest on the ground beneath dumps of wiregrass and little bluestem in the open under-story. But once the fire has been absent for several years and a tangle of shrubs starts to grow, the sparrows disappear. Gopher tortoises, the only native land tortoises east of the Mississippi, are also abundant in longleaf. A keystone species for these forests, its burrows provide homes and safety to more than 300 species of vertebrates and invertebrates ranging from eastern diamond-back rattlesnakes to gopher frogs. If the fire is suppressed, however, the tortoises are choked out. "If we lose the fire," says Bob Mitchell, an ecologist at the Jones Center, "we lose wildlife.'

{F} Without fire, we also lose longleaf. Fire knocks back the oaks and other hardwoods that can grow to overwhelm longleaf forests. "They are fire forests," Mitchell says. "They evolved in the lightning capital of the eastern United States." And it wasn't only lightning strikes that set the forest aflame. "Native Americans also

lit fires to keep the forest open,” Mitchell says. “So did the early pioneers. They helped create the longleaf pine forests that we know today.”

{G} Fire also changes how nutrients flow throughout longleaf ecosystems, in ways we are just beginning to understand. For example, researchers have discovered that frequent fires provide extra calcium, which is critical for egg production, to endangered red-cockaded woodpeckers. Frances James, a retired avian ecologist from Florida State University, has studied these small black-and-white birds for more than two decades in Florida’s sprawling Apalachicola National Forest. When she realised female woodpeckers laid larger clutches in the first breeding season after their territories were burned, she and her colleagues went searching for answers. “We learned calcium is stashed away in woody shrubs when the forest is not burned,” James says. “But when there is a fire, a pulse of calcium moves down into the soil and up into the longleaf.” Eventually, this calcium makes its way up the food chain to a tree-dwelling species of ant, which is the red-cockaded’s favourite food. The result: more calcium for the birds, which leads to more eggs, younger, and more woodpeckers.

{H} Today, fire is used as a vital management tool for preserving both longleaf and its wildlife. Most of these fires are prescribed burns, deliberately set with a drip torch. Although the public often opposes any type of fire—and the smoke that goes with

it—these frequent, low-intensity burns reduce the risk of catastrophic conflagrations. “Forests are going to burn,” says Amadou Diop, NWF’s southern forests restoration manager. “It’s just a question of when. With prescribed burns, we can pick the time and the place.”

{I} Restoring longleaf is not an easy task. The herbaceous layer—the understory of wiregrasses and other plants, also needs to be re-created. In areas where the land has not been chewed up by farming but converted to loblolly or slash pine plantations, the seed bank of the longleaf forest usually remains viable beneath the soil. In time, this original vegetation can be coaxed back. Where agriculture has destroyed the seeds, however, wiregrass must be replanted. Right now, the expense is prohibitive, but researchers are searching for low-cost solutions.

{J} Bringing back longleaf is not for the short-sighted, however. Few of us will be alive when the pines being planted today become mature forests in 70 to 80 years. But that is not stopping longleaf enthusiasts. “Today, it’s getting hard to find longleaf seedlings to buy,” one of the private landowners says. “Everyone wants them. Longleaf is in a resurgence.”

### ***Questions 1-6***

**Choose NO MORE THAN TWO WORDS from the passage for each answer. Write your answers in boxes 1-5 on your answer sheet.**

**Forest fire ensures that:**

- it help the Birds locate their \_\_\_\_\_ 1 \_\_\_\_\_ in the ground
- The burrows of a species of \_\_\_\_\_ 2 \_\_\_\_\_ provide homes to many other animals.
- Hardwoods such as \_\_\_\_\_ 3 \_\_\_\_\_ don't take over.
- Apart from fires lit by 4\_\_\_\_\_
- Fires are created by \_\_\_\_\_ 5 \_\_\_\_\_ and European settlers.
- Fires deliberately lit are called \_\_\_\_\_ 6 \_\_\_\_\_

**Question 7-9**

Complete the flowchart below. Choose ONE WORD ONLY from the passage for each answer. Write your answers in boxes 7-9 on your answer sheet.

How to increase the number of cockaded woodpeckers

Calcium stored in shrubs



Shrubs are burned. Calcium is released into 7..... ....

And travels up to the leaves.



8 ..... are eaten



Number of 9 .....increases



More cockaded woodpeckers

**Questions 10-13**

**Do the following statements agree with the information given in Reading Passage 1? In boxes 10-13 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

**Question 10:-** The sparse distribution of longleaf pine trees leads to the most diversity of species.

**Question 11:-** It is easier to restore forests converted to farms than forests converted to plantations.

**Question 12:-** The technology in recreating the herbaceous layer will phase out in the near future due to the high cost

**Question 13:-** Few people in this restoration program will see the replanted forest reach its maturity.

**Answers**

(1) Nest

(2) Tortoise

(3) Oaks

(4) Lighting

(5) native Americans

(6) Prescribed Burns

(7) Soil

(8) Ants

(9) Eggs

(10) TRUE

(11) FALSE

(12) NOT GIVEN

(13) TRUE

TEST 22:

## Britain needs strong TV industry

Comedy writer Armando Iannucci has called for an industry-wide defence of the BBC and British programme-makers. “The Thick of It” creator made his remarks in the annual MacTaggart Lecture at the Edinburgh TV Festival.

“It’s more important than ever that we have more strong, popular channels... that act as beacons, drawing audiences to the best content,” he said. Speaking earlier, Culture Secretary John Whittingdale rejected suggestions that he wanted to dismantle the BBC.

### ‘Champion supporters’

Iannucci co-wrote “I’m Alan Partridge”, wrote the movie “In the Loop” and created and wrote the hit “HBO” and “Sky Atlantic” show *Veep*. He delivered the 40th annual MacTaggart Lecture, which has previously been given by Oscar winner Kevin Spacey, former BBC director general Greg Dyke, Jeremy Paxman and Rupert Murdoch. Iannucci said: “Faced with a global audience, British television needs its champion supporters.”

He continued his praise for British programming by saying the global success of American TV shows had come about because they were emulating British television. “The best US shows are

modelling themselves on what used to make British TV so world-beating,” he said. “US prime-time schedules are now littered with those quirky formats from the UK – the “Who Do You Think You Are”s and the variants on “Strictly Come Dancing” – as well as the single-camera non-audience sitcom, which we brought into the mainstream first. We have changed international viewing for the better.”

With the renewal of the BBC’s royal charter approaching, Iannucci also praised the corporation. He said: “If public service broadcasting – one of the best things we’ve ever done creatively as a country – if it was a car industry, our ministers would be out championing it overseas, trying to win contracts, boasting of the British jobs that would bring.” In July, the government issued a green paper setting out issues that will be explored during negotiations over the future of the BBC, including the broadcaster’s size, its funding and governance.

Primarily Mr Whittingdale wanted to appoint a panel of five people, but finally, he invited two more people to advise on the channel renewal, namely former Channel 4 boss Dawn Airey and journalism professor Stewart Purvis, a former editor-in-chief of ITN. Iannucci bemoaned the lack of “creatives” involved in the discussions.

“When the media, communications and information industries make up nearly 8% our GDP, larger than the car and oil and gas industries put together, we need to be heard, as those industries are heard. But when I see the panel of experts who've been asked by the culture secretary to take a root and branch look at the BBC, I don't see anyone who is a part of that cast and crew list. I see executives, media owners, industry gurus, all talented people – but not a single person who's made a classic and enduring television show.”

#### ‘Don’t be modest’

Iannucci suggested one way of easing the strain on the licence fee was “by pushing ourselves more commercially abroad”.

“Use the BBC’s name, one of the most recognised brands in the world,” he said. “And use the reputation of British television across all networks, to capitalise financially overseas. Be more aggressive in selling our shows, through advertising, through proper international subscription channels, freeing up BBC Worldwide to be fully commercial, whatever it takes.

“Frankly, don’t be icky and modest about making money, let’s monetize the bezeesus Mary and Joseph out of our programmes abroad so that money can come back, take some pressure off the

licence fee at home and be invested in even more ambitious quality shows, that can only add to our value."

Mr Whittingdale, who was interviewed by ITV News' Alastair Stewart at the festival, said he wanted an open debate about whether the corporation should do everything it has done in the past. He said he had a slight sense that people who rushed to defend the BBC were "trying to have an argument that's never been started".

"Whatever my view is, I don't determine what programmes the BBC should show," he added. "That's the job of the BBC." Mr Whittingdale said any speculation that the Conservative Party had always wanted to change the BBC due to issues such as its editorial line was "absolute nonsense".

### Questions 1-5

Do the following statements agree with the information given in the reading passage 327?

In boxes 27–31 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. Armando Iannucci expressed a need of having more popular channels.
2. John Whittingdale wanted to dismantle the BBC.
3. Iannucci delivered the 30th annual MacTaggart Lecture.
4. Iannucci believes that British television has contributed to the success of American TV-shows.
5. There have been negotiations over the future of the BBC in July.

### **Questions 6–9**

Choose the correct letter, A, B, C or D. Write the correct letter in boxes 32-35 on your answer sheet.

6. Iannucci praised everything EXCEPT
  - A. US shows
  - B. British shows
  - C. Corporation
  - D. British programming
7. To advise on the charter renewal Mr Whittingdale appointed a panel of
  - A. five people
  - B. two people

C. seven people

D. four people

8. Who of these people was NOT invited to the discussion concerning BBC renewal?

A. Armando Iannucci

B. Dawn Airey

C. John Whittingdale

D. Stewart Purvis

9. Their panel of experts lacks:

A. media owners

B. people who make enduring TV-shows

C. gurus of Television industry

D. top executives

### Questions 10–14

Complete the summary below.

Write **NO MORE THAN TWO WORDS** from the passage for each answer.

Write your answers in boxes 10–14 on your answer sheet.

## Easing the strain on the licence fees

Iannucci recommended increasing BBC's profit by pushing ourselves more 10 ..... . He suggests being more aggressive in selling British shows, through advertising and proper international 11..... . Also, he invokes producers to stop being 12 ..... and modest about making money and invest into even 13 ..... quality shows. However, Mr Whittingdale denied any 14 ..... that the Conservative Party had always wanted to change the BBC because of its editorial line.

Answer:

1. TRUE
2. FALSE
3. NOT GIVEN
4. TRUE
5. FALSE
6. A
7. C
8. A
9. B
10. commercially abroad
11. subscription channels

12. icky

13. more ambitious

14. speculation

TEST 23:

**What destroyed the civilisation of Easter Island?**



A

Easter Island, or Rapa Nui as it is known locally, is home to several hundred ancient human statues - the moai. After this remote Pacific island was settled by the Polynesians, it remained isolated for centuries. All the energy and resources that went into the moai - some of which are ten metres tall and weigh over

7,000 kilos - came from the island itself. Yet when Dutch explorers landed in 1722, they met a Stone Age culture. The moai were carved with stone tools, then transported for many kilometres, without the use of animals or wheels, to massive stone platforms. The identity of the moai builders was in doubt until well into the twentieth century. Thor Heyerdahl, the Norwegian ethnographer and adventurer, thought the statues had been created by pre-Inca peoples from Peru. Bestselling Swiss author Erich von Daniken believed they were built by stranded extraterrestrials. Modern science - linguistic, archaeological and genetic evidence - has definitively proved the moai builders were Polynesians, but not how they moved their creations. Local folklore maintains that the statues walked, while researchers have tended to assume the ancestors dragged the statues somehow, using ropes and logs.

**B**

## IELTS WINNERS

When the Europeans arrived, Rapa Nui was grassland, with only a few scrawny trees. In the 1970s and 1980s, though, researchers found pollen preserved in lake sediments, which proved the island had been covered in lush palm forests for thousands of years. Only after the Polynesians arrived did those forests disappear. US scientist Jared Diamond believes that the Rapanui people - descendants of Polynesian settlers - wrecked their own environment. They had unfortunately settled on an extremely fragile island - dry, cool, and too remote to be properly fertilised

by windblown volcanic ash. When the islanders cleared the forests for firewood and farming, the forests didn't grow back. As trees became scarce and they could no longer construct wooden canoes for fishing, they ate birds. Soil erosion decreased their crop yields. Before Europeans arrived, the Rapanui had descended into civil war and cannibalism, he maintains. The collapse of their isolated civilisation, Diamond writes, is a 'worst-case scenario for what may lie ahead of us in our own future'.

## C

The moai, he thinks, accelerated the self-destruction. Diamond interprets them as power displays by rival chieftains who, trapped on a remote little island, lacked other ways of asserting their dominance. They competed by building ever bigger figures. Diamond thinks they laid the moai on wooden sledges, hauled over log rails, but that required both a lot of wood and a lot of people. To feed the people, even more land had to be cleared. When the wood was gone and civil war began, the islanders began toppling the moai. By the nineteenth century none were standing.

---

## D

Archaeologists Terry Hunt of the University of Hawaii and Carl Lipo of California State University agree that Easter Island lost its lush forests and that it was an 'ecological catastrophe' - but they believe the islanders themselves weren't to blame. And the moai

certainly weren't. Archaeological excavations indicate that the Rapanui went to heroic efforts to protect the resources of their wind-lashed, infertile fields. They built thousands of circular stone windbreaks and gardened inside them, and used broken volcanic rocks to keep the soil moist. In short, Hunt and Lipo argue, the prehistoric Rapanui were pioneers of sustainable farming.

## E

Hunt and Lipo contend that moai-building was an activity that helped keep the peace between islanders. They also believe that moving the moai required few people and no wood, because they were walked upright. On that issue, Hunt and Lipo say, archaeological evidence backs up Rapanui folklore. Recent experiments indicate that as few as 18 people could, with three strong ropes and a bit of practice, easily manoeuvre a 1,000 kg moai replica a few hundred metres. The figures' fat bellies tilted them forward, and a D-shaped base allowed handlers to roll and rock them side to side.

## F

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Moreover, Hunt and Lipo are convinced that the settlers were not wholly responsible for the loss of the island's trees. Archaeological finds of nuts from the extinct Easter Island palm show tiny grooves, made by the teeth of Polynesian rats. The rats arrived along with the settlers, and in just a few years, Hunt and

Lipo calculate, they would have overrun the island. They would have prevented the reseeding of the slow-growing palm trees and thereby doomed Rapa Nui's forest, even without the settlers' campaign of deforestation. No doubt the rats ate birds' eggs too. Hunt and Lipo also see no evidence that Rapanui civilisation collapsed when the palm forest did. They think its population grew rapidly and then remained more or less stable until the arrival of the Europeans, who introduced deadly diseases to which islanders had no immunity. Then in the nineteenth century slave traders decimated the population, which shrivelled to 111 people by 1877.

## G

Hunt and Lipo's vision, therefore, is one of an island populated by peaceful and ingenious moai builders and careful stewards of the land, rather than by reckless destroyers ruining their own environment and society. 'Rather than a case of abject failure, Rapa Nui is an unlikely story of success', they claim. Whichever is the case, there are surely some valuable lessons which the world at large can learn from the story of Rapa Nui.

---

### Questions 1-7

*Reading Passage has seven paragraphs, A-G.*

*Choose the correct heading for each paragraph from the list of headings below.*

*Write the correct number, i-ix, in boxes 1-7 on your answer sheet.*

### List of Headings

- i Evidence of innovative environment management practices
- ii An undisputed answer to a question about the moai
- iii The future of the moai statues
- iv A theory which supports a local belief
- v The future of Easter Island
- vi Two opposing views about the Rapanui people
- vii Destruction outside the inhabitants' control
- viii How the statues made a situation worse
- ix Diminishing food resources

1 Paragraph A

2 Paragraph B

3 Paragraph C

4 Paragraph D

5 Paragraph E

6 Paragraph F

7 Paragraph G

## Questions 8-11

*Complete the summary below.*

*Choose ONE WORD ONLY from the passage for each answer.*

*Write your answers in boxes 8-11 on your answer sheet.*

### Jared Diamond's View

Diamond believes that the Polynesian settlers on Rapa Nui destroyed its forests, cutting down its trees for fuel and clearing land for 8

Twentieth-century discoveries of pollen prove that Rapu Nui had once been covered in palm forests, which had turned into grassland by the time the Europeans arrived on the island.

When the islanders were no longer able to build the 9  they needed to go fishing, they began using the island's 10  as a food source, according to Diamond.

Diamond also claims that the moai were built to show the power of the island's chieftains, and that the methods of transporting the statues needed not only a great number of people, but also a great deal of 11

## Questions 12-13

*Choose TWO letters, A-E.*

*Write the correct letters in boxes 12-13 on your answer sheet.*

**On what points do Hunt and Lipo disagree with Diamond?**

- A  the period when the moai were created
- B  how the moai were transported
- C  the impact of the moai on Rapanui society
- D  how the moai were carved
- E  the origins of the people who made the moai

**Answer**

1. ii	8. farming
2. ix	9. canoes
3. viii	10. birds
4. i	11. wood
5. iv	12. B,C IN EITHER ORDER
6. vii	13. B,C IN EITHER ORDER
7. vi	

**TEST 24:**

## The History of Early Cinema



The history of the cinema in its first thirty years is one of major and, to this day, unparalleled expansion and growth. Beginning as something unusual in a handful of big cities - New York, London, Paris and Berlin - the new medium quickly found its way across the world, attracting larger and larger audiences wherever it was shown and replacing other forms of entertainment as it did so. As audiences grew, so did the places where films were shown, finishing up with the 'great picture palaces' of the 1920s, which rivalled, and occasionally superseded, theatres and opera-houses in terms of opulence and splendour. Meanwhile, films themselves developed from being short 'attractions' only a couple of minutes

long, to the full-length feature that has dominated the world's screens up to the present day.

Although French, German, American and British pioneers have all been credited with the invention of cinema, the British and the Germans played a relatively small role in its worldwide exploitation. It was above all the French, followed closely by the Americans, who were the most passionate exporters of the new invention, helping to start cinema in China, Japan, Latin America and Russia. In terms of artistic development it was again the French and the Americans who took the lead, though in the years before the First World War, Italy, Denmark and Russia also played a part.

In the end, it was the United States that was to become, and remain, the largest single market for films. By protecting their own market and pursuing a vigorous export policy, the Americans achieved a dominant position on the world market by the start of the First World War. The centre of film-making had moved westwards, to Hollywood, and it was films from these new Hollywood studios that flooded onto the world's film markets in the years after the First World War, and have done so ever since. Faced with total Hollywood domination, few film industries proved competitive. The Italian industry, which had pioneered the feature film with spectacular films like *Quo vadis?* (1913) and *Cabiria* (1914), almost collapsed. In Scandinavia, the Swedish cinema had a brief period of glory, notably with powerful epic

films and comedies. Even the French cinema found itself in a difficult position. In Europe, only Germany proved industrially capable, while in the new Soviet Union and in Japan the development of the cinema took place in conditions of commercial isolation.

Hollywood took the lead artistically as well as industrially. Hollywood films appealed because they had better-constructed narratives, their special effects were more impressive, and the star system added a new dimension to screen acting. If Hollywood did not have enough of its own resources, it had a great deal of money to buy up artists and technical innovations from Europe to ensure its continued dominance over present or future competition.

The zest of the world survived partly by learning from Hollywood and partly because audiences continued to exist for a product which corresponded to needs which Hollywood could not supply. As well as popular audiences, there were also increasing audiences for films which were artistically more adventurous or which dealt with the issues in the outer world.

---

None of this would have happened without technology, and cinema is in fact unique as an art form. In the early years, this art form was quite primitive, similar to the original French idea of using a lantern and slides back in the seventeenth century. Early cinema programmes were a mixture of items, combining comic sketches, free-standing narratives, serial episodes and the

occasional trick or animated film. With the arrival of the feature length narrative as the main attraction, other types of films became less important. The making of cartoons became a separate branch of film-making, generally practised outside the major studios, and the same was true of serials. Together with newsreels, they tended to be shown as short items in a programme which led to the feature.

From early cinema, it was only Americana slapstick comedy that successfully developed in both short and feature format. However, during this 'Silent Film' era, animation, comedy, serials and dramatic features continued to thrive, along with factual films or documentaries, which acquired an increasing distinctiveness as the period progressed. It was also at this time that the avant-garde film first achieved commercial success, this time thanks almost exclusively to the French and the occasional German film.

Of the countries which developed and maintained distinctive national cinemas in the silent period, the most important were France, Germany and the Soviet Union. Of these, the French displayed the most continuity, in spite of the war and post-war economic uncertainties. The German cinema, relatively insignificant in the pre-war years, exploded on to the world scene after 1919. Yet even they were both overshadowed by the Soviets after the 1917 Revolution. They turned their back on the past, leaving the style of the pre-war Russian cinema to the emigres who fled westwards to escape the Revolution.

The other countries whose cinemas changed dramatically are: Britain, which had an interesting but undistinguished history in the silent period; Italy, which had a brief moment of international fame just before the war; the Scandinavian countries, particularly Denmark, which played a role in the development of silent cinema quite out of proportion to their small population; and Japan, where a cinema developed based primarily on traditional theatrical and, to a lesser extent, other art forms and only gradually adapted to western influence.

### Questions 1-3

*Which THREE possible reasons for American dominance of the film industry are given in the text?*

- A  plenty of capital to purchase what it didn't have
- B  making films dealing with serious issues
- C  being first to produce a feature film
- D  well-written narratives
- E  the effect of the First World War
- F  excellent special effects.

### Questions 4-6

*Answer the questions below using NO MORE THAN THREE WORDS from the passage for each answer.*

*Write your answers in boxes 4-6 on your answer sheet.*

4 Which TWO types of film were not generally made in major studios?

5 Which type of film did America develop in both short and feature films?

6 Which type of film started to become profitable in the 'silent' period?

### Questions 7-13

*Look at the following statements (Questions 7-13) and the list of countries below.*

*Match each statement with the correct country.*

**IELTS WINNERS**

*Write the correct letter A-J in boxes 34-40 on your answer sheet.*

*Crack IELTS the easy way*

**NB** You may use any letter more than once.

7  It helped other countries develop their own film industry.

8  It was the biggest producer of films.

9  It was first to develop the 'feature' film.

10  It was responsible for creating stars.

11  It made the most money from 'avant-garde' films.

12  It made movies based more on its own culture than outside influences.

13  It had a great influence on silent movies, despite its size.



#### List of Countries

A	France	F	Japan
B	Germany	G	Soviet Union
C	USA	H	Italy
D	Denmark	I	Britain
E	Sweden	J	China

#### Answer

1. A, D, F IN ANY ORDER

8. C

2. A, D, F IN ANY ORDER

9. H

3. A, D, F IN ANY ORDER	10. C
4. cartoons, serials	11. A
5. (slapstick) comedy / slapstick	12. F
6. (the) avant(-)grade (film(s))	13. D
7. A	

## TEST 25:

**Grimm's Fairy Tales**

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 the Grimms' collection represent an anthology of fairy tales, animal fables, rustic farces, and religious allegories that remain unrivalled to this day.

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 were 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 saving the endangered oral tradition of Germany.

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.

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.

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".

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's daughter, Viehmann had grown up listening to stories from travellers on the road to Frankfurt. Among her treasures 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 fairy tales.

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-inlaw in "The Six Swans". "The cruelty in the stories was not the Grimms' fantasy", Rolleke points out. "It reflected the law-and-order system of the old times".

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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. “

Fairy tales provide a workout for the unconscious, psychoanalysts maintain. Bruno Bettelheim famously promoted the therapeutic value 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. This flexibility of interpretation suits them for almost any time and any culture.

## QUESTIONS

### Questions 27 – 32

Do the following statements agree with the views of the writer in Reading Passage?

In boxes 27-32 on your answer sheet, write

<b>YES</b>	if the statement agrees with the views of the writer
<b>NO</b>	if the statement contradicts the views of the writer
<b>NOT GIVEN</b>	if it is impossible to say that the writer thinks about this

**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's 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

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**

Complete each sentence with correct ending, A-H, below.

Write the correct letter, A-H, in boxes 36-40 on your answer sheet.

**36** Heinz Rolleke said the Grimm's tales are "German" because the tales

**37** Heinz Rolleke said the abandoned children in tales

**38** Bernhard Lauer said the writing style of the Grimm brothers is universal because they

**39** Jack Zipes said the pursuit of happiness in the tales means they

**40** Bruno Bettelheim said the therapeutic value of the tales means that the fairy tales

- 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.
- H. avoid details about characters' social settings.

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## ANSWERS

**Reading Passage 3**

- 27 NO  
 28 NOT GIVEN  
 29 YES  
 30 NOT GIVEN  
 31 YES  
 32 NO  
 33 A  
 34 C  
 35 D  
 36 D  
 37 A  
 38 H  
 39 E  
 40 B



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TEST 26: *Crack IELTS the easy way*

### Biodiversity

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{A} It seems biodiversity has become a buzzword beloved by politicians, conservationists, protesters, and scientists alike. But what exactly is it? The Convention on Biological Diversity, an international agreement to conserve and share the planet's biological riches, provides a good working definition: biodiversity comprises every form of life, from the smallest microbe to the

largest animal or plant, the genes that give them their specific characteristics and the ecosystems of which they are apart.

{B} In October, the World Conservation Union (also known as the IUCN) published its updated Red List of Threatened Species, a roll call of 11,167 creatures facing extinction – 121 more than when the list was last published in 2000. But the new figures almost certainly underestimate the crisis. Some 1.2 million species of animal and 270,000 species of plant have been classified, but the well-being of only a fraction has been assessed. The resources are simply not available. The IUCN reports that 5714 plants are threatened, for example, but admits that only 4 per cent of known plants have been assessed. And, of course, there are thousands of species that we have yet to discover. Many of these could also be facing extinction.

{C} It is important to develop a picture of the diversity of life on Earth now so that comparisons can be made in the future and trends identified. But it isn't necessary to observe every single type of organism in an area to get a snapshot of the health of the ecosystem. In many habitats, there are species that are particularly susceptible to shifting conditions, and these can be used as indicator species

{D} In the media, it is usually large, charismatic animals such as pandas, elephants, tigers, and whales that get all the attention when loss of biodiversity is discussed. However, animals or plants far lower down the food chain are often the ones vital for

preserving habitats – in the process saving the skins of those more glamorous species. These are known as keystone species.

{E} By studying the complex feeding relationships within habitats, species can be identified that have a particularly important impact on the environment. For example, the members of the fig family are the staple food for hundreds of different species in many different countries, so important that scientists sometimes call figs “jungle burgers”. A whole range of animals, from tiny insects to birds and large mammals, feed on everything from the tree’s bark and leaves to its flowers and fruits. Many fig species have very specific pollinators. There are several dozen species of fig tree in Costa Rica, and a different type of wasp has evolved to pollinate each one. Chris Lyle of the Natural History Museum in London – who is also involved in the Global Taxonomy Initiative of the Convention on Biological Diversity – points out that if fig trees are affected by global warming, pollution, disease or any other catastrophe, the loss of biodiversity will be enormous.

{F} Similarly, sea otters play a major role in the survival of giant kelp forests along the coasts of California and Alaska. These “marine rainforests” provide a home for a wide range of other species. The kelp itself is the main food of purple and red sea urchins and in turn, the urchins are eaten by predators, particularly sea otters. They detach an urchin from the seabed then float to the surface and lie on their backs with the urchin shell on their tummy, smashing it open with a stone before eating

the contents. Urchins that are not eaten tend to spend their time in rock crevices to avoid predators. This allows the kelp to grow – and it can grow many centimetres in a day. As the forests form, bits of kelp break off and fall to the bottom to provide food for the urchins in their crevices. The sea otters thrive hunting for sea urchins in the kelp, and many other fish and invertebrates live among the fronds. The problems start when the sea otter population declines. As large predators they are vulnerable – their numbers are relatively small so disease or human hunters can wipe them out. The result is that the sea urchin population grows unchecked and they roam the seafloor eating young kelp fronds. This tends to keep the kelp very short and stops forests from developing, which has a huge impact on biodiversity

{G} Conversely, keystone species can also make dangerous alien species: they can wreak havoc if they end up in the wrong ecosystem. The cactus moth whose caterpillar is a voracious eater of prickly pear was introduced to Australia to control the rampant cacti. It was so successful that someone thought it would be a good idea to introduce it to Caribbean islands that had the same problem. It solved the cactus menace, but unfortunately, some of the moths have now reached the US mainland – borne on wings and in tourists' luggage – where they are devastating the native cactus populations of Florida.

{H} Organisations like the Convention on Biological Diversity work with groups such as the UN and with governments and

scientists to raise awareness and fund research. A number of major international meetings – including the World Summit on Sustainable Development in Johannesburg this year – have set targets for governments around the world to slow the loss of biodiversity. And the CITES meeting in Santiago last month added several more names to its list of endangered species for which trade is controlled. Of course, these agreements will prove of limited value if some countries refuse to implement them.

{I} There is cause for optimism, however. There seems to be a growing understanding of the need for sustainable agriculture and sustainable tourism to conserve biodiversity. Problems such as illegal logging are being tackled through sustainable forestry programs, with the emphasis on minimizing the use of rainforest hardwoods in the developed world and on rigorous replanting of whatever trees are harvested. CITES is playing its part by controlling trade in wood from endangered tree species. In the same way, sustainable farming techniques that minimize environmental damage and avoid monoculture

{J} Action at a national level often means investing in public education and awareness. Getting people like you and me involved can be very effective. Australia and many European countries are becoming increasingly efficient at recycling much of their domestic waste, for example, preserving natural resources and reducing the use of fossil fuels. This in turn has a direct effect on biodiversity by minimizing pollution, and an indirect effect by

reducing the number of greenhouse gases emitted from incinerators and landfill sites. Preserving ecosystems intact for future generations to enjoy is obviously important, but biodiversity is not some kind of optional extra. Variety may be “the spice of life”, but biological variety is also our life-support system.

### ***Questions 1-7***

*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 is True
FALSE	if the statement is false
NOT GIVEN	If the information is not given in the passage

**Question 1:-** The term “biodiversity” consists of living creatures and the environment that they live in.

**Question 2:-** There are species that have not been researched because it's unnecessary to study all creatures.

**Question 3:-** It is not necessary to investigate all creatures in a certain place.

**Question 4:-** The press more often than not focuses on well-known animals.

**Question 5:-** There is a successful case that the cactus moth plays a positive role in the US.

**Question 6:-** Usage of hardwoods is forbidden in some European countries.

**Question 7:-** Agriculture experts advise farmers to plant single crops in the field in terms of sustainable farming.

Questions 21-26

*Summary*

*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 21-26 on your answer sheet.*

Because of the ignorance brought by the media, people tend to neglect significant creatures called.....8..... have diet connections with others, Every such as .....9....., which provide a majority of food for other species. In some states of America, the decline in the number of sea otters leads to the boom of .....10..... An impressive case is that imported .....11.....successfully tackles the plant cacti in .....12..... However, the operation is needed for the government to increase their financial support in .....13.....

**Answers**

1	TRUE	8	KEYSTONE
---	------	---	----------

2	FALSE	9	FIG FSMILY / FIGS
3	TRUE	10	SEA URCHINS (URCHINS)
4	TRUE	11	CACTUS MOTH
5	FALSE	12	AUSTRALIA
6	NOT GIVEN	13	PUBLIC EDUCATION
7	NOT GIVEN		

### TEST 27:

#### Australia's Convict Colonies.

A

The 1700s in Britain saw widespread poverty and rising crime, and those convicted of crimes faced harsh penalties. including transportation to one of Britain's overseas colonies. Since 1615, convicts had been transported to Britain's American colonies, both as punishment and a source of labour, but this practice was halted by the Revolutionary War in America (1775-1783). The British government decided to establish a new prison colony, and Botany Bay in New South Wales was chosen as the site. (Captain Cook, exploring the southeast coast of Australia in 1770, had named the land New South Wales and claimed it for Britain.)

Between 1787 and 1868, almost 160,000 convicts, of whom about 25,000 were women, were sent to Australia to serve sentences ranging from 7 years to life.

B

Eleven ships set sail from England in 1787 to take the first group of about 750 British convicts to Australia. The fleet reached Botany Bay in January 1788, but nearby Sydney Cove was selected as a more suitable site for the new settlement, which later became the city of Sydney. The first few years were difficult, with severe food shortages; by 1792, however, there were government farms and private gardens. Convicts worked on these farms, or on construction projects such as building roads and bridges. Although the settlement was a prison colony, few convicts served their sentences in jail. They lived in houses they had built themselves, and established families, businesses and farms. A settlement was also established on Norfolk Island, where some convicts were sent for crimes committed after arrival in the colony. Two more settlements were established on Van Diemen's Land (now Tasmania), in 1803 and 1804.

C

Convicts not involved in public work were assigned to free settlers, providing labour in exchange for food, clothing and shelter. Some masters treated the convicts cruelly, and the punishment of convicts, particularly in the early days, could be arbitrary and savage. Lachlan Macquarie, governor of New South

Wales from 1809 to 1819, adopted a more humane approach. He encouraged convicts to reform by rewarding good behaviour, even granting pardons to convicts before their sentence was completed. These emancipists, as they were called, were given land and government assistance to help them start farming. His policies were unpopular both with British authorities and wealthy free settlers, however, and the next governors were under orders to ensure that life for convicts became much stricter and more controlled. There were harsher punishments for second offenders, such as working in the 'iron gangs' where men were chained together to carry out exhausting work on the roads or being sent to penal settlements where punishment was deliberately brutal so that it would act as a deterrent.

## D

In the early years of settlement, the convicts greatly outnumbered free immigrants and settlers. In 1810, convicts made up almost 60 percent of the population, and over 20,000 new convicts arrived between 1821 and 1830. Even in 1831, convicts still comprised 45 percent of the population, with ex-convicts and emancipists making up another 30 percent. 25 percent of the population now consisted of people born in the colonies, and free people outnumbered convicts

## E

The first group of free settlers had arrived in Australia in 1793 to seek their fortune in the new land. Their numbers grew, with

about 8,000 free settlers arriving in the 1820s to take advantage of free land grants and cheap convict labour. In 1831, the British government offered money to support new settlers, hoping to attract skilled workers and single women as immigrants. Between 1831 and 1840, more than 40,000 immigrants arrived in Australia.

## F

During the 1820s there was a lengthy campaign to win certain rights for emancipists, which was opposed by wealthy free settlers. In the 1830s, free Immigrants to New South Wales and Van Diemen's Land, unhappy about living in a prison colony where civil liberties were restricted and convict labour resulted in low wages, increasingly voiced their opposition to transportation. Again, wealthy landowners disagreed, but a growing number of reformers in England were also opposed to convicting transportation. In 1838, a committee set up by the British Parliament recommended that the government end transportation to New South Wales and Van Diemen's Land, and abolish assignment. The British duly abolished assignment, and transportation – at least to New South Wales – was halted in 1840.

## G

Transportation continued, however, to other colonies and settlements, in the 1840S, most British convicts were sent to Van Diemen's Land, where the British government introduced a

convict system based on stages of reform, with the convicts gaining increasing levels of freedom for continued good behaviour. Transportation to the eastern colonies was abolished in 1852. In contrast, the convict system in Western Australia began in 1850, at the request of the Western Australian government, and continued until 1868. Convicts served part of their sentences in Britain before being transported to the colony, where they worked on badly-needed public construction projects under a system similar to that tried in Van Diemen's Land.

### Questions 1-3

*Which THREE of the following statements is true of free settlers in the Australian prison colonies, according to the text? Choose THREE letters A-H. NB, Your answers may be given in any order.*

- A. They were mainly skilled Workers and single women.
- B. They all welcomed Governor Macquarie's policies.
- C. 25 percent of them were born in the Colonies.
- D. 160,000 of them went to Australia between 1787 and 1868.
- E. 8,000 of them arrived in Australia in the 1820s.
- F. They established families, businesses and farms.
- G. Convicts who were assigned to them provided them with labour.
- H. They campaigned in favour of emancipist rights.

### Questions 4-9

*Reading Passage 1 has seven paragraphs, A—G. Choose the correct heading for paragraphs B—G from the list of headings*

*below.*

### List of Headings

- i. Free settlers
- ii. Transportation of convicts
- iii. The end of transportation
- iv. Convict life
- v. The colonial population
- vi. The treatment of convicts
- vii. Opponents of transportation
- viii. The first settlements

### Example Paragraph A – ii (answer)

- 4. Paragraph B
- 5. Paragraph C
- 6. Paragraph D
- 7. Paragraph E
- 8. Paragraph F
- 9. Paragraph G

### Questions 10- 13

*Complete the notes below. Write NO MORE THAN THREE WORDS for each answer.*

Australia's Convict Colonies

Events preceding first settlement

- 1615 – convicts first transported to 10..... Controlled by Britain
- 1770 – Cook claims SE Australian coast for Britain, calling it

11.....

- 1775 – 1783 – Revolutionary War in America halts transportation there
- 1787 – Botany Bay was chosen as the site for new 12.....; first convict fleet sets sail
- 1788 – fleet reaches Botany Bay but 13..... chosen instead

## Answers

1 . A\*

2 . E\*

3 . G\*

4 . VIII

5 . VI

6 . V

7 . I

8 . VII

9 . III

10 . AMERICAN COLONIES

11 . NEW SOUTH WALES

12 . PRISON COLONY

13 . SYDNEY COVE

## TEST 28:

### Multitasking Debate Can you do them at the same time?

{A} Talking on the phone while driving isn't the only situation where we're worse at multitasking than we might like to think we are. New studies have identified a bottleneck in our brains that some say means we are fundamentally incapable of true multitasking. If experimental findings reflect real-world performance, people who think they are multitasking are probably just underperforming in all – or at best, all but one – of their parallel pursuits. Practice might improve your performance, but you will never be as good as when focusing on one task at a time.

{B} The problem, according to René Marois, a psychologist at Vanderbilt University in Nashville, Tennessee, is that there's a sticking point in the brain. To demonstrate this, Marois devised an experiment to locate it. Volunteers watch a screen and when a particular image appears, a red circle, say, they have to press a key with their index finger. Different coloured circles require presses from different fingers. Typical response time is about half a second, and the volunteers quickly reach their peak performance. Then they learn to listen to different recordings and respond by making a specific sound. For instance, when they hear

a bird chirp, they have to say “ba”; an electronic sound should elicit a “ko”, and so on. Again, no problem. A normal person can do that in about half a second, with almost no effort.

**{C}** The trouble comes when Marois shows the volunteers an image, and then almost immediately plays them a sound. Now they’re flummoxed. “If you show an image and play a sound at the same time, one task is postponed,” he says. In fact, if the second task is introduced within the half-second or so it takes to process and react to the first, it will simply be delayed until the first one is done. The largest dual-task delays occur when the two tasks are presented simultaneously; delays progressively shorten as the interval between presenting the tasks lengthens.

**{D}** There are at least three points where we seem to get stuck, says Marois. The first is in simply identifying what we’re looking at. This can take a few tenths of a second, during which time we are not able to see and recognise a second item. This limitation is known as the “attentional blink”: experiments have shown that if you’re watching out for a particular event and a second one shows up unexpectedly any time within this crucial window of concentration, it may register in your visual cortex but you will be unable to act upon it. Interestingly, if you don’t expect the first event, you have no trouble responding to the second. What exactly causes the attentional blink is still a matter for debate.

**{E}** A second limitation is in our short-term visual memory. It’s estimated that we can keep track of about four items at a time,

fewer if they are complex. This capacity shortage is thought to explain, in part, our astonishing inability to detect even huge changes in scenes that are otherwise identical, so-called “change blindness” . Show people pairs of near-identical photos – say, aircraft engines in one picture have disappeared in the other – and they will fail to spot the differences. Here again, though, there is disagreement about what the essential limiting factor really is. Does it come down to a dearth of storage capacity, or is it about how much attention a viewer is paying?

{F} A third limitation is that choosing a response to a stimulus – braking when you see a child in the road, for instance, or replying when your mother tells you over the phone that she’s thinking of leaving your dad – also takes brainpower. Selecting a response to one of these things will delay by some tenths of a second your ability to respond to the other. This is called the “response selection bottleneck” theory, first proposed in 1952.

{G} But David Meyer, a psychologist at the University of Michigan, Ann Arbor, doesn’t buy the bottleneck idea. He thinks dual-task interference is just evidence of a strategy used by the brain to prioritise multiple activities. Meyer is known as something of an optimist by his peers. He has written papers with titles like “Virtually perfect time-sharing in dual-task performance: Uncorking the central cognitive bottleneck”. His experiments have shown that with enough practice – at least 2000 tries – some people can execute two tasks simultaneously as competently as if

they were doing them one after the other. He suggests that there is a central cognitive processor that coordinates all this and, what's more, he thinks it uses discretion: sometimes it chooses to delay one task while completing another.

{H} Marois agrees that practice can sometimes erase interference effects. He has found that with just 1 hour of practice each day for two weeks, volunteers show a huge improvement at managing both his tasks at once. Where he disagrees with Meyer is in what the brain is doing to achieve this. Marois speculates that practice might give us the chance to find less congested circuits to execute a task – rather like finding trusty back streets to avoid heavy traffic on main roads – effectively making our response to the task subconscious. After all, there are plenty of examples of subconscious multitasking that most of us routinely manage: walking and talking, eating and reading, watching TV and folding the laundry.

{I} It probably comes as no surprise that, generally speaking, we get worse at multitasking as we age. According to Art Kramer at the University of Illinois at Urbana-Champaign, who studies how ageing affects our cognitive abilities, we peak in our 20s. Though the decline is slow through our 30s and on into our 50s, it is there; and after 55, it becomes more precipitous. In one study, he and his colleagues had both young and old participants do a simulated driving task while carrying on a conversation. He found that while young drivers tended to miss background changes,

older drivers failed to notice things that were highly relevant. Likewise, older subjects had more trouble paying attention to the more important parts of a scene than young drivers.

{J} It's not all bad news for over-55s, though. Kramer also found that older people can benefit from the practice. Not only did they learn to perform better, brain scans showed that underlying that improvement was a change in the way their brains become active. While it's clear that practise can often make a difference, especially as we age, the basic facts remain sobering. "We have this impression of an almighty complex brain," says Marois, "and yet we have very humbling and crippling limits." For most of our history, we probably never needed to do more than one thing at a time, he says, and so we haven't evolved to be able to. Perhaps we will in the future, though. We might yet look back one day on people like Debbie and Alun as ancestors of a new breed of true multitaskers.

## IELTS WINNERS

### **Questions 1-5**

*The reading Passage has ten paragraphs A-J.*

*Which paragraph contains the following information?*

*Write the correct letter A-J, in boxes 1-5 on your answer sheet.*

**Question 1:-** A theory explained delay happens when selecting one reaction

**Question 2:-** Different age group responds to important things differently

**Question 3:-** Conflicts happen when visual and audio elements emerge simultaneously

**Question 4:-** An experiment designed to demonstrate the critical part in the brain for multitasking

**Question 5:-** An viewpoint favors optimistic side of multitask performance

### **Questions 6-8**

*Choose the correct letter, A, B, C or D. Write your answers in boxes 6-8 on your answer sheet.*

**Question 6:-** Which one is correct about the experiment conducted by René Marois?

- (A) participants performed poorly on listening tasks solely
- (B) volunteers press a different key on different colour
- (C) participants need to use different fingers on the different coloured object
- (D) they did a better job on Mixed image and sound information

**Question 7:-** Which statement is correct about the first limitation of Marois's experiment?

- (A) "attentional blink" takes about ten seconds
- (B) lag occurs if we concentrate on one object while the second one appears
- (C) we always have trouble reaching the second one
- (D) the first limitation can be avoided by certain measures

**Question 8:-** Which one is NOT correct about Meyer's experiments and statements?

- (A) just after failure in several attempts can people execute dual-task
- (B) Practice can overcome dual-task interference
- (C) Meyer holds a different opinion on Marois's theory
- (D) an existing processor decides whether delay another task or not

**Questions 9-13**

*Do the following statements agree with the information given in Reading Passage 3? In boxes 36-40 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

**Question 9:-** The longer gap between two presenting tasks

means shorter delay toward the second one.

**Question 10:-** Incapable in human memory because people sometimes miss the differences when presented with two similar images.

**Question 11:-** Marois has a different opinion on the claim that training removes the bottleneck effect.

**Question 12:-** Art Kramer proved there is a correlation between multitasking performance and genders

**Question 13:-** The author doesn't believe that the effect of practice could bring any variation.

## ANSWERS:

1	F	8	A
2	I	9	YES
3	C	10	YES
4	B	11	NO
5	G	12	NOT GIVEN
6	C	13	NO
7	B		

## TEST 29:

## The Seed Hunters

*With quarter of the world's plants set to vanish within the next 50 years, Dough Alexander reports on the scientists working against the clock to preserve the Earth's botanical heritage.*

They travel the four corners of the globe, scouring jungles, forests and savannas. But they're not looking for ancient artefacts, lost treasure or undiscovered tombs. Just pods. It may lack the romantic allure of archaeology, or the whiff of danger that accompanies going after big game, but seed hunting is an increasingly serious business. Some seek seeds for profit—hunters in the employ of biotechnology firms, pharmaceutical companies and private corporations on the lookout for species

that will yield the drugs or crops of the future. Others collect to conserve, working to halt the sad slide into extinction facing so many plant species.

Among the pioneers of this botanical treasure hunt was John Tradescant, an English royal gardener who brought back plants and seeds from his journeys abroad in the early 1600s. Later, the English botanist Sir Joseph Banks – who was the first director of the Royal Botanic Gardens at Kew and travelled with Captain James Cook on his voyages near the end of the 18th century—was so driven to expand his collections that he sent botanists around the world at his own expense.

Those heady days of exploration and discovery may be over, but they have been replaced by a pressing need to preserve our natural history for the future. This modern mission drives hunters such as Dr Michiel van Slageren, a good-natured Dutchman who often sports a wide-brimmed hat in the field—he could easily be mistaken for the cinematic hero Indiana Jones. He and three other seed hunters work at the Millennium Seed Bank, an 80 million [pounds sterling] international conservation project that aims to protect the world's most endangered wild plant species

The group's headquarters are in a modern glass-and-concrete structure on a 200-hectare Estate at Wakehurst Place in the West Sussex countryside. Within its underground vaults are 260 million dried seeds from 122 countries, all stored at -20 Celsius to survive for centuries. Among the 5, 100 species represented are

virtually all of Britain's 1,400 native seed-bearing plants, the most complete such collection of any country's flora.

Overseen by the Royal botanic gardens, the Millennium Seed Bank is the world's largest wild-plant depository. It aims to collect 24,000 species by 2010. The reason is simple: thanks to humanity's efforts, an estimated 25 per cent of the world's plants are on the verge of extinction and may vanish within 50 years.

We're currently responsible for habitat destruction on an unprecedented scale, and during the past 400 years, plant species extinction rates have been about 70 times greater than those indicated by the geological record as being 'normal'.

Experts predict that during the next 50 years a further one billion hectares of wilderness will be converted to farmland in developing countries alone.

The implications of this loss are enormous. Besides providing staple food crops, plants are a source of many medicines and the principal supply of fuel and building materials in many parts of the world. They also protect soil and help regulate the climate.

Yet, across the globe, plant species are being driven to extinction before their potential benefits are discovered.

The world Conservation Union has listed 5,714 threatened species is sure to be much higher. In the UK alone, 300 wild plant species are classified as endangered. The Millennium Seed Bank aims to ensure that even if a plant becomes extinct in the wild, it won't be lost forever. Stored seeds can be used the help

restore damaged or destroyed environments or in scientific research to find new benefits for society- in medicine, agriculture or local industry- that would otherwise be lost.

Seed banks are an insurance policy to protect the world's plant heritage for the future, explains Dr Paul Smith, another Kew seed hunter. "Seed conservation techniques were originally developed by farmers/" he says. "Storage is the basis of what we do, conserving seeds until you can use them – just as in farming."

Smith says there's no reason why any plant species should become extinct, given today's technology. But he admits that the biggest challenge is finding, naming and \_ categorising all the world's plants. And someone has to gather these seeds before it's too late. "There aren't a lot of people out there doing this," he says" The key is to know the flora from a particular area, and that knowledge takes years to acquire."

There are about 1,470 seed banks scattered around the globe, with a combined total of 5.4 million samples, of which perhaps two million are distinct non-duplicates. Most preserve genetic material for agriculture use in order to ensure crop diversity; others aim to conserve wild species, although only 15 per cent of all banked plants are wild.

Many seed banks are themselves under threat due to a lack of funds. Last year, Imperial College, London, examined crop collections from 151 countries and found that while the number of plant samples had increased in two thirds of the countries,

budget had been cut in a quarter and remained static in another 35 per cent. The UN's Food and Agriculture Organization and the Consultative Group on International Agricultural Research has since set up the Global Conservation Trust, which aims to raise US\$260 million to protect seed banks in perpetuity.

### Questions 14-18

Complete the summary below using **NO MORE THAN TWO WORDS** from the passage.

*Write your answers in boxes 14-18 on your answer sheet.*

People collect seeds for different purposes: some collect to protect certain species from 14 \_\_\_\_; others collect seeds for their potential to produce 15 \_\_\_\_\_. They are called seed hunters. The 16 \_\_\_\_\_ of them included both gardeners and botanists, such as 17 \_\_\_\_\_, who sponsored collectors out of his own pocket. The seeds collected are often stored in seed banks. The most famous among them is known as the Millennium Seed Bank, where seeds are all stored in the 18 \_\_\_\_\_ at low temperature.

### Questions 19-24

Do the following statements agree with the information given in Reading Passage 2?

*In boxes 19-24 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

- 21 The reason to collect seeds is different from the past.
- 20 The Millennium Seed Bank is one of the earliest seed banks.
- 21 A major reason for plant species extinction is farmland expansion.
- 22 The method scientists use to store seeds is similar to that used by farmers.
- 23 Technological development is the only hope to save plant species.
- 24 The works of seed conservation are often limited by insufficient financial resources.

Questions 25-26

Choose TWO letters, A-E.

*Write the correct letters in boxes 25 and 26 on your answer sheet.*

Which TWO of the following are provided by plants to the human world?

- A food
- B artefact
- C treasure
- D energy
- E clothes

ANSWERS:

14 extinction

15 drugs, crops

- 16 pioneers
- 17 Sir Joseph Banks
- 18 underground vaults
- 19 TRUE
- 20 NOT GIVEN
- 22 TRUE
- 23 FALSE
- 24 TRUE
- 25 A
- 26 D



## IELTS WINNERS

TEST 30:

*Crack IELTS the easy way*

### **How to Achieve Happiness**

A We can find happiness right in our own home, our workplace, in school, in the company of our friends, etc. It is up to us to find the ways and means to achieve that happiness each of us seek and long for. However, it is essential to recognize that there is no one absolute

way to achieve happiness. People may have different ideas with regard to the ways of achieving happiness. The following classifications are perceived by many people as sources of happiness: family and friends, wealth, position, educational achievement, fame.

**B** Happiness is a mental state of well-being characterized by positive or pleasant emotions ranging from contentment to intense joy. A variety of biological, psychological, religious, and philosophical approaches have striven to define happiness and identify its sources. Various research groups, including Positive psychology, endeavor to apply the scientific method to answer questions about what “happiness” is, and how we might attain it. Philosophers and religious thinkers often define happiness in terms of living a good life, or flourishing, rather than simply as an emotion. Happiness in this sense was used to translate the Greek Eudaimonia, and is still used in virtue ethics. Happiness economics suggests that measures of public happiness should be used to supplement more traditional economic measures when evaluating the success of public policy.

**C** The While level of physical healthiness is the biggest determinant of happiness, comparison of financial success with others of the same age group is the second largest source of happiness and unhappiness. Financially richer people tend to be happier than poorer people, according to sociological researcher Glenn Firebaugh, Pennsylvania State University, and graduate

student Laura Tach, Harvard University. Their research is focused on whether the income effect on happiness results largely from the things money can buy (absolute income effect) or from comparing one's income to the income of others (relative income effect). They present their research in a session paper, titled "Relative Income and Happiness: Are Americans on a Hedonic Treadmill?" at the American Sociological Association Centennial Annual Meeting on August 14. Firebaugh argues that, in evaluating their own incomes, individuals compare themselves to their peers of the same age. Therefore a person's reported level of happiness depends on how his or her income compares to others in the same age group. Using comparison groups on the basis of age, the researchers find evidence of both relative and absolute effects, but relative income is more important than absolute income in determining the happiness of individuals in the United States. This may result in a self-indulgent treadmill, because incomes in the United States rise over most of the adult lifespan. They always dissatisfy with the salary. The survey indicates that the students studied in Harvard University expect to earn much more money than their classmates rather than care about the exact amount of the salary.

D The Minnesota Study of Twins Reared Apart (MISTRA) has a fascinating history, but eventually had 120 pairs of reared-apart twins plus four sets of reared-apart triplets-'the most extensive and intensive study of these rare experiments of (human) nature

ever attempted'. In an early report of results it was found that, on most measurable psychological traits, monozygotic twins reared apart (MZA) were as similar as monozygotic twins reared together. Among persons of European ancestry, for psychological features that can be measured, heritabilities range from about 25 per cent to 80 per cent. Or, to put it more concretely , from one-fourth to fourfifths of the variation from person to person in such features as IQ, creativity and happiness, is associated with genetic differences between those persons. That indicates that besides the environments, genetic difference may also affect the happiness. Furthermore, neurobiological evidence shows that left and right frontal lobes play different roles in the emotion. Happiness is a type of emotion, a positive one. From the experiments, happiness and the left prefrontal lobe are combined together. The more active it is ,the more positive emotion you sense.



How to Achieve Happiness

**E** At the outset of new millennium, a global research had a result that the people living the modern world were even more unhappy. Happiness is a mixture of positive emotions, ranging from a feeling of heavenly bliss or delight to a state of well-being

and contentment. There are many ways to be happy; but with crises being on the rise these days, finding happiness can be a bit challenging. Despite of all the stresses associated with life, we still do our best to be happy—because being happy is the only way to keep us afloat. Happiness is considered a very important therapy, both physically and mentally. With it, we are inspired to accomplish whatever goals we want to achieve. It's a strong drive that keeps us going and helps us live our life every single day. Spend time with individuals who are dear to you. There is nothing more joyful than to be with the people you love. During the weekends, try to schedule a fun trip for you and your partner, or one for your whole family. Just go somewhere else for a change and enjoy the change of scenery. Do something nice for others. Helping others is a very honorable way to find happiness. If your schedule is too tight for volunteer work, you can just donate a small sum of money or some old clothes or toys to charity. When you eat out, try to be a good tipper to the waiters or the valet who safely parked your car. All these simple things will not only make you happy, but other people as well. Start and end your day with a smile. Smiling is a very powerful gesture. There's no need for words to describe how pleasant it is. If you have a lousy day, smile your way out of the office. When people smile back at you, it will uplift your mood and make you feel better. Spend some time with your friends. A close circle of friends is one of the most important source of happiness.

## QUESTIONS

**Questions 1-5** Reading this passage has six paragraphs ,A-E

Choosing the correct heading for paragraphs , A-E from the list of heading below. Write the appropriate number, i-x ,in boxes 1-5 on your answer sheet.

*List of headings*

i The definition of happiness

ii An increase in junk food consumption

iii The source of happiness

iv National dietary recommendations

v Happiness comes from relative comparisons of wealth

vi Research for twin brothers

vii Compare between happiness of male and female

viii The factors affect the happiness

ix Recommendation from the parents

x Happiness help to ease pressure for modern life

xi Students of Harvard University

**1 Paragraph A**

**2 Paragraph B**

**3 Paragraph C**

**4 Paragraph D**

**5 Paragraph E**

**Questions 6-10** Choose the correct letter, A, B,C or D. Write the correct letter in boxes **6-10** on your answer sheet

**6 Which source of happiness is not mentioned in this passage**

A wife

B reputation

C dinner

D status

**7 Which is the most important factor regarding to happiness mentioned in this passage**

A wealth

B holiday

C friend

D health

**8 Which is not motioned in this passage for affect the happiness**

A environment

B gene

C electricity

D frontal lobes

**9 A research in the 21 st century indicate that**

A always try to directly say no

B modern life makes people not happy

C female specifically feel unhappy

D medicine therapy helped to bring happiness

**10 Which suggestion is not mentioned in last paragraph for achieving happiness**

A consult a physician

B smile

C help others

D stay with friends

**Questions 11-13** Complete each sentences with the correct ending, A-G, below. Write the correct letter A-G in boxes 36-40 on your answer sheet.

A encouraged the scientist to make further study

B expected to earn much money

C identified that environment is not sole factor affect happiness

D certify that people cannot control the happiness

E can cause more happiness when it is active

F indicated reared-apart triplets were useless for the research

G may need close circle of friends for achieving happiness

**11** A study of reared-apart twins

**12** The left prefrontal lobe of human

**13** People living in modern city

#### ANSWERS

1. iii

2. i

3. v

4. viii

5. x

6. C

7. D

8. C

9. B

10. A

11. C

12. E

13. G

#### TEST 31:

## Antarctic Research

### 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.

### 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

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

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

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

**17** The explanation of how atmosphere pressure above Antarctica

can impose an effect on global climate change

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

### **Question 19-21**

#### **Summary**

**Please match the natural phenomenon with correct determined factor**

Choose the correct answer from the box;

Write the correct letter A-F, in boxes 19-21 on your answer sheet.

**19** Globally, mass Antarctica's size and \_\_\_\_\_ influence climate change

**20** \_\_\_\_\_ contributory to western wind

**21** Southern Oscillation Index based on air pressure can predict \_\_\_\_\_ in Australia

A Antarctic Circumpolar Current (ACC)

B katabatic winds

C rainfall

D temperature

E glaciers

F pressure

### **Questions 22-26**

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

Write your answer in box 22-26 on your answer sheet.

**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



Answers

**14. D**

**15. F**

**16. E**

**17. C**

**18. A**

**19. D**

**20. A**

**21. C**

**22. C**

**23. A**

**24. C**

**25. C**

**26. C**

**TEST 32:**

### **Koalas**

**A.** Koalas are just too nice for their own good. And except for the occasional baby taken by birds of prey, koalas have no natural enemies. In an ideal world, the life of an arboreal couch potato would be perfectly safe and acceptable.

**B.** Just two hundred years ago, koalas flourished across Australia. Now they seem to be in decline, but exact numbers are not available as the species would not seem to be 'under threat'. Their problem, however, has been man, more specifically, the white man. Koala and aborigine had co-existed peacefully for centuries.

**C.** Today koalas are found only in scattered pockets of southeast Australia, where they seem to be at risk on several fronts. The koala's only food source, the eucalyptus tree has declined. In the past 200 years, a third of Australia's eucalyptus forests have disappeared. Koalas have been killed by parasites, chlamydia epidemics and a tumour-causing retro-virus. And every year 11000 are killed by cars, ironically most of them in wildlife

sanctuaries, and thousands are killed by poachers. Some are also taken illegally as pets. The animals usually soon die, but they are easily replaced.

D. Bush fires pose another threat. The horrific ones that raged in New South Wales recently killed between 100 and 1000 koalas. Many that were taken into sanctuaries and shelters were found to have burnt their paws on the glowing embers. But zoologists say that the species should recover. The koalas will be aided by the eucalyptus, which grows quickly and is already burgeoning forth after the fires. So the main problem to their survival is their slow reproductive rate – they produce only one baby a year over a reproductive lifespan of about nine years.

E. The latest problem for the species is perhaps more insidious. With plush, grey fur, dark amber eyes and button nose, koalas are cuddliness incarnate. Australian zoos and wildlife parks have taken advantage of their uncomplaining attitudes, and charge visitors to be photographed hugging the furry bundles. But people may not realise how cruel this is, but because of the koala's delicate disposition, constant handling can push an already precariously balanced physiology over the edge.

F. Koalas only eat the foliage of certain species of eucalyptus trees, between 600 and 1250 grams a day. The tough leaves are packed with cellulose, tannins, aromatic oils and precursors of toxic cyanides. To handle this cocktail, koalas have a specialised

digestive system. Cellulose- digesting bacteria in the break down fibre, while a specially adapted gut and liver process the toxins. To digest their food properly, koalas must sit still for 21 hours every day.

G. Koalas are the epitome of innocence and inoffensiveness.

Although they are capable of ripping open a man's arm with their needle-sharp claws, or giving a nasty nip, they simply wouldn't. If you upset a koala, it may blink or swallow, or hiccup. But attack? No way! Koalas are just not aggressive. They use their claws to grip the hard smooth bark of eucalyptus trees.

H. They are also very sensitive, and the slightest upset can prevent them from breeding, cause them to go off their food, and succumb to gut infections. Koalas are stoic creatures and put on a brave face until they are at death's door. One day they may appear healthy, the next they could be dead. Captive koalas have to be weighed daily to check that they are feeding properly. A sudden loss of weight is usually the only warning keepers have that their charge is ill. Only two keepers plus a vet were allowed to handle London Zoo's koalas, as these creatures are only comfortable with people they know. A request for the koala to be taken to meet the Queen was refused because of the distress this would have caused the marsupial. Sadly, London's Zoo no longer has a koala. Two years ago the female koala died of a cancer caused by a retrovirus. When they come into heat, female koalas become more active, and start losing weight, but after about

sixteen days, heat ends and the weight piles back on. London's koala did not. Surgery revealed hundreds of pea-sized tumours. Almost every zoo in Australia has koalas – the marsupial has become the Animal Ambassador of the nation, but nowhere outside Australia would handling by the public be allowed. Koala cuddling screams in the face of every rule of good care. First, some zoos allow koalas to be passed from stranger to stranger, many children who love to squeeze. Secondly, most people have no idea of how to handle the animals; they like to cling on to their handler, all in their own good time and use his or her arm as a tree. For such reasons, the Association of Fauna and Marine parks, an Australian conservation society is campaigning to ban koala cuddling. Policy on koala handling is determined by state government authorities. "And the largest of the numbers in the Australian Nature Conservation Agency, with the aim of instituting national guidelines. Following a wave of publicity, some zoos and wildlife parks have stopped turning their koalas into photo.

## QUESTIONS

### *Questions 1-5*

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

*Write the correct letter in boxes 1-5 on your answer sheet.*

**1. The main reason why koala declined is that they are killed  
EXCEPT FOR**

- A. by poachers
- B. by diseases they got

C. giving too many birth yet survived little!

D. accidents on the road

**2. What can help koalas fully digest their food?**

A. toxic substance in the leaves

B. organs that dissolve the fibres

C. remaining inactive for a period to digest

D. eating eucalyptus trees

**3. What would koalas do when facing the dangerous situation?**

A. show signs of being offended

B. counter attack furiously

C. use sharp claws to rip the man

D. use claws to grip the bark of trees.

**4. In what ways Australian zoos exploit koalas?**

A. encourage people to breed koalas as pets

B. allow tourists to hug the koalas

C. put them on the trees as a symbol

D. establish a koala campaign

**5. What would the government do to protect koalas from being endangered?**

A. introduce koala protection guidelines

B. close some of the zoos

C. encourage people to resist visiting the zoos

D. persuade the public to learn more knowledge

***Questions 6-12***

*Do the following statements agree with the information given in Reading Passage 1*

*In boxes 6-12 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 passage*

6. new coming human settlers caused danger to koalas.
7. Koalas can still be seen in most of the places in Australia.
8. it takes decade for the eucalyptus trees to recover after the fire.
9. Koalas will fight each other when food becomes scarce.
10. It is not easy to notice that koalas are ill.
11. Koalas are easily infected with human contagious disease via cuddling
12. Koalas like to hold a person's arm when they are embraced.

### ***Questions 13***

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

*Write the correct letter in boxes 13 on your answer sheet. From your opinion this article written by*

- A. a journalist who write for magazine
- B. a zoo keeper in London Zoo.
- C. a tourist who traveling back from Australia
- D. a government official who studies koalas to establish a law

**ANSWERS**

Section 1					
1	C	2	C	3	A
4	B	5	A	6	Yes
7	No	8	No	9	Not Given
10	Yes	11	Not Given	12	Yes
13	A				

**TEST 33:****The Cacao: a Sweet History****A Chapter 1**

Most people today think of chocolate as something sweet to eat or drink that can be easily found in stores around the world. It might surprise you that chocolate was once highly treasured. The tasty secret of the cacao (Kah Kow) tree was discovered 2,000 years ago in the tropical rainforests of the Americas. The story of how chocolate grew from a local Mesoamerican beverage into a global sweet encompasses many cultures and continents.

**B Chapter 2**

Historians believe the Maya people of Central America first learned to farm cacao plants around two thousand years ago. The Maya took cacao trees from the rainforests and grew them in their gardens. They cooked cacao seeds, then crushed them into a soft paste. They mixed the paste with water and flavorful spices

to make an unsweetened chocolate drink. The Maya poured the chocolate drink back and forth between two containers so that the liquid would have a layer of bubbles or foam.

Cacao and chocolate were an important part of Maya culture. There are often images of cacao plants on Maya buildings and art objects. Ruling families drank chocolate at special ceremonies. And, even poorer members of society could enjoy the drink once in a while. Historians believe that cacao seeds were also used in marriage ceremonies as a sign of the union between a husband and a wife.

The Aztec culture in current-day Mexico also prized chocolate. But, cacao plants could not grow in the area where the Aztecs lived. So, they traded to get cacao. They even used cacao seeds as a form of money to pay taxes. Chocolate also played a special role in both Maya and Aztec royal and religious events. Priests presented cacao seeds and offerings to the gods and served chocolate drinks during sacred ceremonies. Only the very wealthy in Aztec societies could afford to drink chocolate because cacao was so valuable. The Aztec ruler Montezuma was believed to drink fifty cups of chocolate every day. Some experts believe the word for chocolate came from the Aztec word “xocolatl” which in the Nahuatl language means “bitter water.” Others believe the word “chocolate” was created by combining Mayan and Nahuatl words.

## C Chapter 3

The explorer Christopher Columbus brought cacao seeds to Spain after his trip to Central America in 1502. But it was the Spanish explorer Hernando Cortes who understood that chocolate could be a valuable investment. In 1519, Cortes arrived in current-day Mexico. He believed the chocolate drink would become popular with Spaniards. After the Spanish soldiers defeated the Aztec empire, they were able to seize the supplies of cacao and send them home. Spain later began planting cacao in its colonies in the Americas in order to satisfy the large demand for chocolate. The wealthy people of Spain first enjoyed a sweetened version of chocolate drink. Later, the popularity of the drink spread throughout Europe. The English, Dutch and French began to plant cacao trees in their own colonies. Chocolate remained a drink that only wealthy people could afford to drink until the eighteenth century. During the period known as the Industrial Revolution, new technologies helped make chocolate less costly to produce.

## D Chapter 4

Crack IELTS the easy way

Farmers grow cacao trees in many countries in Africa, Central and South America. The trees grow in the shady areas of the rainforests near the Earth's equator. But these trees can be difficult to grow. They require an exact amount of water, warmth, soil and protection. After about five years, cacao trees start producing large fruits called pods, which grow near the trunk of the tree. The seeds inside the pods are harvested to make

chocolate. There are several kinds of cacao trees. Most of the world's chocolate is made from the seed of the forastero tree. But farmers can also grow criollo or trinitario cacao plants. Cacao trees grown on farms are much more easily threatened by diseases and insects than wild trees. Growing cacao is very hard work for farmers. They sell their harvest on a futures market. This means that economic conditions beyond their control can affect the amount of money they will earn. Today, chocolate industry officials, activists, and scientists are working with farmers. They are trying to make sure that cacao can be grown in a way that is fair to the timers and safe for the environment.

## E Chapter 5

To become chocolate, cacao seeds go through a long production process in a factory. Workers must sort, clean and cook the seeds. Then they break off the covering of the seeds so that only the inside fruit, or nibs, remain. Workers crush the nibs into a soft substance called chocolate liquor. This gets separated into cocoa solids and fat called cocoa butter. Chocolate makers have their own special recipes in which they combine chocolate liquor with exact amounts of sugar, milk and cocoa fat. They finely crush this "crumb" mixture in order to make it smooth. The mixture then goes through two more processes before it is shaped into a mold form.

Chocolate making is big business. The market value of the yearly cacao crop around the world is more than five billion dollars.

Chocolate is especially popular in Europe and the United States. For example, in 2005, the United States bought 1.4 billion dollars worth of cocoa products. Each year, Americans eat an average of more than five kilograms of chocolate per person. Speciality shops that sell costly chocolates are also very popular. Many offer chocolate lovers the chance to taste chocolates grown in different areas of the world.

### Questions 1-5

Reading passage 1 has 5 chapters. Which chapter contains the following information?

*Write your answers in boxes 1-5 on your answer sheet*

- 1 the part of cacao trees used to produce chocolate
- 2 average chocolate consumption by people in the US per person per year
- 3 risks faced by farmers in the cacao business
- 4 where the first sweetened chocolate drink appeared
- 5 how ancient American civilizations obtained cacao

### Questions 6-10

Do the following statements agree with the information given in Reading Passage 1?

*In boxes 6-10 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** use cacao and chocolate in ceremonies were restricted Maya royal families
- 7** The Spanish explorer Hernando Cortes invested in chocolate and chocolate drinks.
- 8** The forastero tree produces the best chocolate.
- 9** some parts in cacao seed are get rid of during the chocolate process
- 10** Chocolate is welcomed more in some countries or continents than other parts around the world.

Questions 11-14

The flow chart below shows the steps in chocolate making.

Complete the flow chart using **NO MORE THAN THREE WORDS** from the passage for each blank

*Write your answers in boxes 11-14 on your answer sheet.*

Cacao seeds

↓ sorting, cleaning and cooking ridding seeds of  
their **11**.....

Nibs

↓ crushing

**12**.....

↓ Add sugar, milk and **13**.....

Crumb mixture

↓ Crush finely then come into a shape in a **14**.....  
chocolate

**ANSWERS:**

1. D
2. E
3. D
4. C
5. B
6. FALSE
7. NOT GIVEN
8. NOT GIVEN
9. TRUE
10. TRUE
11. Covering
12. Chocolate liquor
13. Cocoa fat
14. Mold (form)

*Crack IELTS the easy way*

**TEST 34:****CASE STUDY IN FLEXIBLE WORKING: FRANK RUSSELL COMPANY  
PASSAGE**

- A. Two phrases that Frank Russell Company uses to identify itself also suggest why flexible work options are a perfect fit for this American financial services firm. 'The sun never sets in Russell'

means this 24-hour, multi-country organizations' flexible work hours are essential to conducting its business. 'Employees first, clients second' expresses the bottom line worth that management sees in employee satisfaction and creating an excellent work environment that includes opportunities to work from home.

Telework, (i.e. working away from the traditional office) compressed workweeks and flexitime serve Russell both as strategic business tools and valued employee benefits. 'Of we have happy staff first, we will have happy client,' says Mike Phillips, the company's chief executive.

B. Flexible work options are offered in all departments, but the level and type of use vary widely among the 970 employees based at the company's headquaters in Tacoma, Washington State. In the early 1990s, several work groups pioneered various forms of flexible working, including telework. As the programs spread, management discovered one size does not fit all. Rather than attempt to cover every possibility, Russell now provides general guidelines under which departments customize plans to accommodate individuals' personal circumstances.

C. Implementing telework becomes less of a leap when a company's staff and clients are already scattered around the world. Pam Johnson, Manager of International Assignments, works in Tacoma but reports to a supervisor based in London. She is responsible for transfers of staff from one country to another, including negotiating the terms, shipping belongings

and obtaining work permits. She works from home several times a month. Johnson says, 'I take homework that involves reading, writing, creating spreadsheets and answer emails.' Johnson says she is a more loyal employee because of the combination of benefits, flexibility and trust her employer offers. 'I've been here 11 years. Once in a while I wonder if I should look elsewhere, but the opportunity to flex my hours and work at home are part of the formula that always ends up on the Russell side.'

D. Email and technology such as remote network access not only transformed the office environment and the communication abilities between branch offices, they supported the growth of telework. Mike Phillips is as reliant on email and remote access as anyone, regardless of whether he is working in Singapore, Tacoma or from home. 'Email is our primary means of communication,' Phillips says. 'I can get up two hours early Singapore and respond to 20 emails from associates around the world or send a company-wide memo from home.'

E. The ability to vary start times or work the longer days of a compressed workweek are a way of doing business at Russell. An earlier start or a longer day increases telephone communication with international staff. In addition, since the New York Exchange opens at 9 a.m, traders on the West Coast need to start by 6 a.m local time. Another group, which provides desktop computer support, finds four 10-hour days make it easier to accomplish

some tasks before or after employees need to use their computers.

F. The larger consulting department offers compressed workweeks to administrative staff. Administrative Assistant Jean Boelk works different proportions of alternate weeks in order to receive one extra day off every other week. She is part of team of four administrative staff who jointly support a work group of four executives. People are more willing to help each other because we're dependent on each other on our days off, Boelk says. Increasing the hours of coverage, plus the idea of cross-training and shared work, results in less overtime. So long as coverage is adequate, staff can change days off from one pay period to the next.

G. What motivates teleworkers is usually a combination of work and personal needs. Senior Technical Analyst Scott Boyd, who is in the Computer Operation section, works at home twice a month. Boyd's job involves responding to telephone requests, and in the office it's hard to work longer than 10 minutes without getting interrupted by the phone. It's an incredible relief to be so productive for one day at home,' he says.

H. A number of managers also find that working at home improves their overall performance. Sales and Marketing Services Manager Tricia O'Connell works at home approximately two days a month. She gives staff her home telephone number and advance notice of her plans, then checks voice mail every half

hour and email every hour from home. In addition, she schedules weekly meetings in her office with each of eight members of her team to discuss challenges and encourage top performance. 'This means I am more able to focus on staff when it counts,' she says.<sup>1</sup> In the end, management asks two questions when making decisions about work option requests: 1) Will it improve overall employee satisfaction or job performance? and 2) Will it hurt performance of duties in some way that it is not acceptable or is not offset by other improvements? For Frank Russell Company, the answers to these questions show that flexible working is highly satisfactory for business.

## QUESTIONS

### QUESTION 27 – 34

IELTS Reading Passage 3 has nine paragraphs, A-I.

Choose the correct heading for paragraphs A-D and F-I from the list of headings below.

Write the correct number i-xi in boxes 27-34 on your answer sheet.

#### List of Headings

- i Flexible working meets differing business needs
- ii The disadvantages of flexible working
- iii The process of organising flexible working has changed
- iv Involving clients in deciding how best to serve them
- v Technical developments have facilitated flexible working
- vi The cost/benefit analysis of flexible working

- vii Flexible working increases co-operation among staff
- ix Flexible working encourages commitment to the company
- x The workforce is the company's top priority
- xi It's easier to get on with the work at home

*Example              Answer*

**Paragraph E              i**

**27. Paragraph A**

**28. Paragraph B**

**29. Paragraph C**

**30. Paragraph D**

**31. Paragraph F**

**32. Paragraph G**

**33. Paragraph H**

**34. Paragraph I**

### **QUESTION 35 – 37**

Match each description with the correct person, **A-E**.

Write the correct letter, **A-E** in boxes **35-37** on your answer sheet.

#### **List of Staff**

- A. Mike Phillips
- B. Pam Johnson
- C. Jean Boelk
- D. Scott Boyd
- E. Tricia O'Connell

**35.** provides contact details when working out of the office

36. is convinced that staff feelings have an impact on company
37. performance has responsibilities which are shared with certain colleagues

### QUESTION 38 – 40

*Complete the sentence below.*

*Choose ONE WORD ONLY from the passage for each answer.*

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

38. The Frank Russell Company aims to ensure that staff gain a sense of from their work.
39. Mike Phillip mostly uses to contact staff.
40. In the consulting department flexible working reduces the amount of done by staff.

### ANSWERS

27. x

28. iii

29. ix

30. v

31. vii

32. xi

33. viii

34. vi

35. E

36. D

37. C

38. satisfaction

39. email

40. overtime

TEST 35:

## TASMANIAN TIGER

### PASSAGE

A. Although it was called tiger, it looked like a dog with black stripes on its back and it was the largest known carnivorous marsupial of modern times. Yet, despite its fame for being one of the most fabled animals in the world, it is one of the least understood of Tasmania's native animals. The scientific name for the Tasmanian tiger is Thylacine and it is believed that they have become extinct in the 20th century.

B. Fossils of thylacines dating from about almost 12 million years ago have been dug up at various places in Victoria, South Australia and Western Australia. They were widespread in

Australia 7,000 years ago, but have probably been extinct on the continent for 2,000 years ago. This is believed to be because of the introduction of dingoes around 8,000 years ago.

Because of disease, thylacine numbers may have been declining in Tasmania at the time of European settlement 200 years ago, but the decline was certainly accelerated by the new arrivals. The last known Tasmanian Tiger died in Hobart Zoo in 1935 and the animal is officially classified as extinct. Technically, this means that it has not been officially sighted in the wild or captivity for 50 years. However, there are still unsubstantiated sightings.

C. Hans Naarding, whose study of animals had taken him around the world, was conducting a survey of a species of endangered migratory bird. The cat he saw that night is now regarded as the most credible sighting recorded of thylacine that many believe has been extinct for more than 70 years.

D. "I had to work at night." Naarding takes up the story. "I was in the habit of intermittently shining a spotlight around. The beam fell on an animal in front of the vehicle, less than 10m away. Instead of risking movement by grabbing for a camera, I decided to register very carefully what I was seeing. The animal was about the size of a small shepherd dog, a very healthy male in prime condition.

What set it apart from a dog, though, was a slightly sloping hindquarter, with a fairly thick tail being a straight continuation of the backline of the animal. It had 12 distinct stripes on its back,

continuing onto its butt. I knew perfectly well what I was seeing. As soon as I reached for the camera, it disappeared into the tea-tree undergrowth and scrub."

E. The director of Tasmania's National Parks at the time, Peter Morrow, decided in his wisdom to keep Naarding's sighting of the thylacine secret for two years. When the news finally broke, it was accompanied by pandemonium. "I was besieged by television crews, including four to five from Japan, and others from the United Kingdom, Germany, New Zealand and South America," said Naarding.

F. Government and private search parties combed the region, but no further sightings were made. The tiger, as always, had escaped to its lair, a place many insist exists only in our imagination. But since then, the thylacine has staged something of a comeback, becoming part of Australian mythology.

G. There have been more than 4,000 claimed sightings of the beast since it supposedly died out, and the average claims each year reported to authorities now number 150. Associate professor of zoology at the University of Tasmania, Randolph Rose, has said he dreams of seeing a thylacine. But Rose, who in his 35 years in Tasmanian academia has fielded countless reports of thylacine sightings, is now convinced that his dream will go unfulfilled.

H. "The consensus among conservationists is that usually; any animal with a population base of less than 1,000 is headed for

extinction within 60 years," says Rose. "Sixty years ago, there was only one thylacine that we know of, and that was in Hobart Zoo," he says.

I. Dr. David Pemberton, curator of zoology at the Tasmanian Museum and Art Gallery, whose PhD thesis was on the thylacine, says that despite scientific thinking that 500 animals are required to sustain a population, the Florida panther is down to a dozen or so animals and, while it does have some inbreeding problems, is still ticking along. "I'll take a punt and say that, if we manage to find a thylacine in the scrub, it means that there are 50-plus animals out there."

J. After all, animals can be notoriously elusive. The strange fish is known as the coelacanth' with its "proto-legs", was thought to have died out along with the dinosaurs 700 million years ago until a specimen was dragged to the surface in a shark net off the south-east coast of South Africa in 1938.

K. Wildlife biologist Nick Mooney has the unenviable task of investigating all "sightings" of the tiger totaling 4,000 since the mid-1980s, and averaging about 150 a year. It was Mooney who was first consulted late last month about the authenticity of digital photographic images purportedly taken by a German tourist while on a recent bushwalk in the state. On face value, Mooney says, the account of the sighting, and the two photographs submitted as the proof amount to one of the most convincing cases for the species' survival he has seen.

L. And Mooney has seen it all – the mistakes, the hoaxes, the illusions and the plausible accounts of sightings. Hoaxers aside, most people who report sightings end up believing they have been a thylacine, and are themselves believable to the point they could pass a lie-detector test, according to Mooney. Others, having tabled a creditable report, then become utterly obsessed like the Tasmanian who has registered 99 thylacine sightings to date.

Mooney has seen individuals bankrupted by the obsession, and families destroyed. “It is a blind optimism that something is, rather than a cynicism that something isn’t,” Mooney says. “If something crosses the road, it’s not a case of ‘I wonder what that was?’ Rather, it is a case of ‘that’s a thylacine!’ It is a bit like a gold prospector’s blind faith, ‘it has got to be there.’”

M. However, Mooney treats all reports on face value. “I never try to embarrass people or make fools of them. But the fact that I don’t pack the car immediately they ring can often be taken as ridicule. Obsessive characters get irate that someone in my position is not out there when they think the thylacine is there.”

N. But Hans Naarding, whose sighting of a striped animal two decades ago was the highlight of “a life of animal spotting”, remains bemused by the time and money people waste on tiger searches. He says resources would be better applied to save the Tasmanian devil, and helping migratory bird populations that are declining as a result of shrinking wetlands across Australia.

O. Could the thylacine still be out there? "Sure," Naarding says. But he also says any discovery of surviving thylacines would be "rather pointless". "How do you save a species from extinction? What could you do with it? If there are thylacines out there, they are better off right where they are."

## QUESTIONS

### Questions 14-17

Complete the summary below.

Choose **NO MORE THAN TWO WORDS AND/OR A NUMBER** from the passage for each answer.

Write your answers in boxes **14-17** on your answer sheet.

The Tasmanian tiger, also called thylacine, resembles the look of a dog and has 14..... on its fur coat. Many fossils have been found, showing that thylacines had existed as early as 15..... years ago. They lived throughout 16..... before disappearing from the mainland. And soon after the 17..... settlers arrived the size of the thylacine population in Tasmania shrunk at a higher speed.

## QUESTIONS 18-23

Look at the following statements (Questions 18-23) and the list of people below, match each statement with the correct person A, B, C or D.

Write the correct letter A, B, C or D in boxes **18-23** on your

answer sheet.

NB You may use any letter more than once.

### **List of People**

A. Hans Naarding

B. Randolph Rose

C. David Pemberton

D. Nick Mooney

**18.** His report of seeing a live thylacine in the wild attracted international interest.

**19.** Many eye-witnesses' reports are not trustworthy.

**20.** It doesn't require a certain number of animals to ensure the survival of a species.

**21.** There is no hope of finding a surviving Tasmanian tiger.

**22.** Do not disturb them if there are any Tasmanian tigers still living today.

**23.** The interpretation of evidence can be affected by people's beliefs.

### **QUESTIONS 24-26**

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

Write the correct letter in boxes 24-26 on your answer sheet.

**24. Hans Naarding's sighting has resulted in**

- A. government and organisations' cooperative efforts to protect
- B. thylacine extensive interests to find a living thylacine.
- C. increase in the number of reports of thylacine worldwide.
- D. growth of popularity of thylacine in literature.

**25. The example of the coelacanth is to illustrate**

- A. it lived in the same period with dinosaurs.
- B. has dinosaurs evolved legs.
- C. some animals are difficult to catch in the wild.
- D. extinction of certain species can be mistaken.

**26. Mooney believes that all sighting reports should be**

- A. given some credit as they claim even if they are untrue.
- B. acted upon immediately.
- C. viewed as equally untrustworthy.
- D. questioned and carefully investigated.

## ANSWERS

14	Black stripes
15	IELTS WINNERS 12 million
16	Australia
17	European
18	A
19	D

20	C
21	B
22	A
23	D
24	B
25	D
26	A

**TEST 36:****The Adolescents****A**

The American Academy of Pediatrics recognizes three stages of adolescence. These are early, middle and late adolescence, and each has its own developmental tasks. Teenagers move through these tasks at their own speed depending on their physical development and hormone levels. Although these stages are common to all teenagers, each child will go through them in his or her own highly individual ways.

**B**

During the early years young people make the first attempts to leave the dependent, secure role of a child and to establish themselves as unique individuals, independent of their parents.

Early adolescence is marked by rapid physical growth and maturation. The focus of adolescents' self-concepts is thus often on their physical self and their evaluation of their physical acceptability. Early adolescence is also a period of intense conformity to peers. 'Getting along,' not being different, and being accepted seem somehow pressing to the early adolescent. The worst possibility, from the view of the early adolescent, is to be seen by peers as 'different'.

## C

Middle adolescence is marked by the emergence of new thinking skills. The intellectual world of the young person is suddenly greatly expanded. Their concerns about peers are more directed toward their opposite sexed peers. It is also during this period that the move to establish psychological independence from one's parents accelerates. Delinquency behavior may emerge since parental views are no longer seen as absolutely correct by adolescents. Despite some delinquent behavior, middle adolescence is a period during which young people are oriented toward what is right and proper. They are developing a sense of behavioral maturity and learning to control their impulsiveness.

## D

Late adolescence is marked by the final preparations for adult roles. The developmental demands of late adolescence often extend into the period that we think of as young adulthood. Late adolescents attempt to crystallize their vocational goals and to

establish a sense of personal identity. Their needs for peer approval are diminished and they are largely psychologically independent from their parents. The shift to adulthood is nearly complete.

## E

Some years ago, Professor Robert Havighurst of the University of Chicago proposed that stages in human development can best be thought of in terms of the developmental tasks that are part of the normal transition. He identified eleven developmental tasks associated with the adolescent transition. One developmental task an adolescent needs to achieve is to adjust to a new physical sense of self. At no other time since birth does an individual undergo such rapid and profound physical changes as during early adolescence. Puberty is marked by sudden rapid growth in height and weight. Also, the young person experiences the emergence and accentuation of those physical traits that make him or her a boy or girl. The effect of this rapid change is that young adolescent often becomes focused on his or her body.

## F

Before adolescence, children's thinking is dominated by a need to have a concrete example for any problem that they solve. Their thinking is constrained to what is real and physical. During adolescence, young people begin to recognize and understand abstractions. The adolescent must adjust to increased cognitive demands at school. Adults see high school in part as a place

where adolescents prepare for adult roles and responsibilities and in part as preparatory for further education. School curricula are frequently dominated by the inclusion of more abstract, demanding material, regardless of whether the adolescents have achieved formal thought. Since not all adolescents make the intellectual transition at the same rate, demands for abstract thinking prior to achievement of that ability may be frustrating.

## G

During adolescence, as teens develop increasingly complex knowledge systems and a sense of self, they also adopt an integrated set of values and morals. During the early stages of moral development, parents provide their child with a structured set of rules of what is right and wrong, what is acceptable and unacceptable. Eventually, the adolescent must assess the parents' values as they come into conflict with values expressed by peers and other segments of society. To reconcile differences, the adolescent restructures those beliefs into a personal ideology.

## H

The adolescent must develop expanded verbal skills. As adolescents mature intellectually, as they face increased school demands, and as they prepare for adult roles, they must develop new verbal skills to accommodate more complex concepts and tasks. Their limited language of childhood is no longer adequate. Adolescents may appear less competent because of their inability to express themselves meaningfully.

**I**

The adolescent must establish emotional and psychological independence from his or her parents. Childhood is marked by a strong dependence on one's parents. Adolescents may yearn to keep that safe, secure, supportive, dependent relationship. Yet, to be an adult implies a sense of independence, of autonomy, of being one's own person. Adolescents may vacillate between their desire for dependence and their need to be independent. In an attempt to assert their need for independence and individuality, adolescents may respond with what appears to be hostility and lack of cooperation.

**J**

Adolescents do not progress through these multiple developmental tasks separately. At any given time, adolescents may be dealing with several. Further, the centrality of specific developmental tasks varies with early, middle, and late periods of the transition.

### Questions 1-6

Match the following characteristics with the correct stages of the adolescent.

*Write the correct letter, A, B or C, in boxes 1-6 on your answer sheet.*

A    early adolescence

- B middle adolescence
  - C later adolescence
- 1 interested in the opposite sex
  - 2 exposure to danger
  - 3 the same as others
  - 4 beginning to form individual thinking without family context
  - 5 less need the approval of friends
  - 6 intellectual booming

#### Questions 7-10

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

*Write the correct letters, A-F, in boxes 7-10 on your answer sheet.*

- 7 One of Havighurst's research
- 8 High School Courses
- 9 Adolescence is a time when young people
- 10 The developmental speed of thinking patterns

#### List of the statements

- A form personal identity with a set of morals and values
- B develops a stable and productive peer relationships
- C are designed to be more challenging than some can accept
- D varies from people to people
- E focuses on creating a self-image
- F become an extension of their parents

### Questions 11-13

Do the following statements agree with the information given in Reading Passage 1?

*In boxes 11-13 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

- 11 The adolescent lacks the ability to think abstractly.
- 12 Adolescents may have a deficit in their language ability.
- 13 The adolescent experiences a transition from reliance on his parents to independence.

**ANSWERS:**

1. B
2. A
3. A
4. A
5. C
6. B
7. E
8. C
9. A
10. D
11. FALSE
12. TRUE

**13. TRUE****TEST 37:****Origin of Species & Continent Formation****A**

THE FACT THAT there was once a Pangean supercontinent, a Panthalassa Ocean, and a Tethys Ocean, has profound implications for the evolution of multicellular life on Earth. These considerations were unknown to the scientists of the 19th century – making their scientific deductions even more remarkable. Quite independently of each other, Charles Darwin and his young contemporary Alfred Russel Wallace reached the conclusion that life had evolved by natural selection. Wallace later wrote in *My Life* of his own inspiration:

**B**

Why do some species die and some live? The answer was clearly that on the whole the best fitted lived. From the effects of disease the most healthy escaped; from enemies the strongest, the swiftest or the most cunning from famine the best hunters – then it suddenly flashed on me that this self-acting process would improve the race, because in every generation the inferior would

inevitably be killed off and the superior would remain, that is, the fittest would survive.

## C

Both Darwin's and Wallace's ideas about natural selection had been influenced by the essays of Thomas Malthus in his *Principles of Population*. Their conclusion, however, had been the direct result of their personal observation of animals and plants in widely separated geographic locations: Darwin from his experiences during the voyage of the *Beagle*, and particularly during the ship's visit to the Galapagos Islands in the East Pacific in 1835; Wallace during his years of travel in the Amazon Basin and in the Indonesia-Australian Archipelago in the 1850s.

## D

Darwin had been documenting his ideas on natural selection for many years when he received a paper on this selfsame subject from Wallace, who asked for Darwin's opinion and help in getting it published. In July 1858, Charles Lyell and J. D Hooker, close friends of Darwin, pressed Darwin to present his conclusions so that he would not lose priority to an unknown naturalist.

Presiding over the hastily called but now historic meeting of the Linnean Society in London, Lyell and Hooker explained to the distinguished members how "these two gentlemen" (who were absent: Wallace was abroad and Darwin chose not to attend), had

“independently and unknown to one another, conceived the same very ingenious theory,”

## E

Both Darwin and Wallace had realized that the anomalous distribution of species in particular regions had profound evolutionary significance. Subsequently, Darwin spent the rest of his days in almost total seclusion thinking and writing mainly about the origin of species. In contrast, Wallace applied himself to the science of biogeography, the study of the pattern and distribution of species, and its significance, resulting in the publication of a massive two-volume work the *Geographical Distribution of Animals* in 1876.

## F

Wallace was a gentle and modest man, but also persistent and quietly courageous. He spent years working in the most arduous possible climates and terrains, particularly in the Malay archipelago, he made patient and detailed zoological observations and collected a huge number of specimens for museums and collectors-which is how he made a living. One result of his work was the conclusion that there is a distinct faunal boundary, called “Wallace’s line,” between an Asian realm of animals in Java, Bronco and the Philipiones and an Australian realm in New Guinea and Australia. In essence, this boundary posed a difficult question: How on Earth did plants and animals

with a clear affinity to the Northern Hemisphere meet with their Southern Hemispheric counterparts along such a distinct Malaysian demarcation zone? Wallace was uncertain about demarcation on one particular island-Celebes, a curiously shaped place that is midway between the two groups. Initially, he assigned its flora-fauna to the Australian side of the line, but later he transferred it to the Asian side. Today we know the reason for his dilemma. 200MYA East and West Celebes were islands with their own natural history lying on opposite sides of the Tethys Ocean. They did not collide until about 15 MYA. The answer to the main question is that Wallace's Line categorizes Laurasia-derived flora-fauna (the Asian) and Gondwana-derived flora-fauna (the Australian), fauna that had evolved on opposing shores of the Tethys. The closure of the Tethys Ocean today is manifested by the ongoing collision of Australia/New Guinea with Indochina/Indonesia and the continuing closure of the Mediterranean Sea – a remnant of the Western Tethys Ocean.

## G

IN HIS ORIGIN OF CONTINENTS AND OCEANS, Wegener quoted at length from Wallace's Geographical Distribution of Animals. According to Wegener's reading, Wallace had identified three clear divisions of Australian animals, which supported his own theory of continental displacement. Wallace had shown that animals long established in southwestern Australia had an affinity with animals in South Africa, Madagascar, India, and Ceylon, but

did not have an affinity with those in Asia. Wallace also showed that Australian marsupials and monotremes are clearly related to those in South America, the Moluccas, and various Pacific islands and that none are found in neighboring Indonesia. From this and related data, Wegener concluded that the then broadly accepted “landbridge” theory could not account for this distribution of animals and that only this theory of continental drift could explain it.

## H

The theory that Wegener dismissed in preference to his own proposed that plants and animals had once migrated across now-submerged intercontinental landbridges. In 1885, one of Europe’s leading geologists, Eduard Suess, theorized that as the rigid Earth cools, its upper-crust shrinks and wrinkles like the withering skin of an aging apple. He suggested that the planet’s seas and oceans now fill the wrinkles between once-contiguous plateaus.

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## I

Today, we know that we live on a dynamic Earth with shifting, colliding and separating tectonic plates, not a “withering skin”, and the main debate in the field of biogeography has shifted. The discussion now concerns “dispersalism” versus “vicarianism”: unrestricted radiation of species on the one hand and the development of barriers to migration on the other. Dispersion is a

short-term phenomenon – the daily or seasonal migration of species and their radiation to the limits of their natural environment on an extensive and continuous landmass. Vicarian evolution, however, depends upon the separation and isolation of a variety of species within the confines of natural barriers in the form of islands, lakes, or shallow seas – topographical features that take a long time to develop.

### Questions 1-5

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 1-5 on your answer sheet.

A Suess

B Wallace

C Darwin and Wallace

D Wegener

E Lyell and Hooker

1  urged Darwin to publish his scientific findings

2  Depicted physical feature of earth's crust.

3  believed in continental drift theory while rejecting another one

- 4  Published works about wildlife distribution in a different region.
- 5  Evolution of species is based on selection by nature.

### Questions 6-8

The Reading Passage has nine paragraphs A-I

Which paragraph contains the following information?

*Write the correct letter A-I, in boxes 6-8 on your answer sheet.*

- 6  Best adaptable animal survived on the planet.
- 7  Boundary called Wallace's line found between Asia and Australia.
- 8  Animal relevance exists between Australia and Africa.

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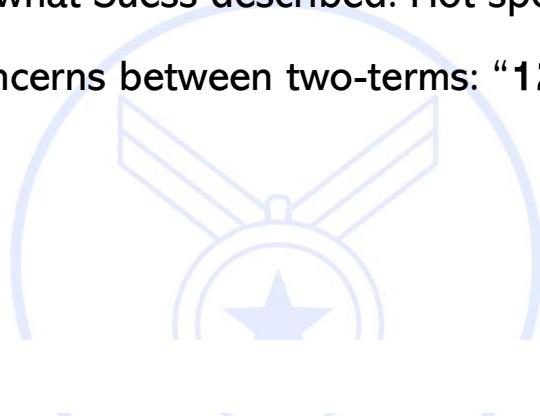
### Questions 9-13

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 9-13 on your answer sheet.*

Wegener found that continental drift instead of “land bridge” theory could explain strange species’ distribution phenomenon. In his theory, vegetation and wildlife 9  intercontinentally. However, Eduard Suess compared the wrinkle of crust to 10  of an old apple. Now it is well known that we are living on the planet where there are 11  in constant mobile states instead of what Suess described. Hot spot in biogeography is switched to concerns between two-terms: “12 ” and “13 ”



### Answer

1. E	8. G
2. A	9. migrated
3. D	10. withering skin
4. B	11. plates
5. C	12. dispersalism
6. B	13. vicariance

7. F

TEST 38:

### New Agriculture in Oregon US

A. Onion growers in eastern Oregon are adopting a system that saves water and keeps topsoil in place, while producing the highest quality “super colossal” onions. Pear growers in southern Oregon have reduced their use of some of the most toxic pesticides by up to two-thirds, and are still producing top-quality pears. Range managers throughout the state have controlled the poisonous weed tansy ragwort with insect predators and saved the Oregon livestock industry up to \$4.8 million a year.

B. These are some of the results Oregon growers have achieved in collaboration with Oregon State University (OSU) researchers as they test new farming methods including integrated pest management (IPM). Nationwide, however, IFM has not delivered results comparable to those in Oregon. A recent U.S General Accounting Office (GAO) report indicates that while integrated pest management can result in dramatically reduced pesticide use, the federal government has been lacking in effectively promoting that goal and implementing IPM. Farmers also blame the government for not making the new options of pest management attractive. “Wholesale changes in the way that

farmers control the pests on their farms is an expensive business." Tony Brown, of the National Farmers Association says. "If the farmers are given tax breaks to offset the expenditure, then they would willingly accept the new practices." The report goes on to note that even though the use of the riskiest pesticides has declined nationwide, they still make up more than 40 percent of all pesticides used today; and national pesticide use has risen by 40 million kilograms since 1992. "Our food supply remains the safest and highest quality on Earth but we continue to overdose our farmland with powerful and toxic pesticides and to under-use the safe and effective alternatives," charged Patrick Leahy, who commissioned the report. Green action groups disagree about the safety issue. "There is no way that habitual consumption of foodstuffs grown using toxic chemicals of the nature found on today's farms can be healthy for consumers," noted Bill Bowler, spokesman for Green Action, one of many lobbyists interested in this issue.

C. The GAO report singles out Oregon's apple and pear producers who have used the new IPM techniques with growing success. Although Oregon is clearly ahead of the nation, scientists at OSU are taking the Government Accounting Office criticisms seriously. "We must continue to develop effective alternative practices that will reduce environmental hazards and produce high quality products," said Paul Jepson, a professor of entomology at OSU and new director of

D. OSU's Integrated Plant Protection Centre (IPPC). The IPPC brings together scientists from OSU's Agricultural Experiment Station, OSU Extension service, the u.s. Department of Agriculture and Oregon farmers to help develop agricultural systems that will save water and soil, and reduce pesticides. In response to the GAO report, the Centre is putting even more emphasis on integrating research and farming practices to improve Oregon agriculture environmentally and economically.



#### New Agriculture in Oregon US

E. "The GAO report criticizes agencies for not clearly communicating the goals of IPM," said Jepson. "Our challenge is to greatly improve the communication to and from growers, to learn what works and what doesn't. The work coming from OSU researchers must be adopted in the field and not simply languish in scientific journals."

F. In Oregon, growers and scientists are working together to instigate new practices. For example, a few years ago scientists at OSU's Malheur Experiment Station began testing a new drip irrigation system to replace old ditches that wasted water and washed soil and fertilizer into streams. The new system cut water and fertilizer use by half, kept topsoil in place and protected water quality.

G. In addition, the new system produced crops of very large onions, rated “super colossal” and highly valued by the restaurant industry and food processors. Art Pimms, one of the researchers at Malheur comments: “Growers are finding that when they adopt more environmentally benign practices, they can have excellent results. The new practices benefit the environment and give the growers their success.”

H. OSU researchers in Malheur next tested straw mulch and found that it successfully held soil in place and kept the ground moist with less irrigation. In addition, and unexpectedly, the scientists found that the mulched soil created a home for beneficial beetles and spiders that prey on onion thrips – a notorious pest in commercial onion fields – a discovery that could reduce the need for pesticides. “I would never have believed that we could replace the artificial pest controls that we had before and still keep our good results,” commented Steve Black, a commercial onion farmer in Oregon, “but instead we have actually surpassed expectations.”

I. OSU researchers throughout the state have been working to reduce dependence on broad spectrum chemical sprays that are toxic to many kind of organisms, including humans. “Consumers are rightly putting more and more pressure on the industry to change its reliance on chemical pesticides, but they still want a picture-perfect product,” said Rick Hilton, entomologist at OSU’s Southern Oregon Research and Extension Centre, where

researchers help pear growers reduce the need for highly toxic pesticides. Picture perfect pears are an important product in Oregon and traditionally they have required lots of chemicals. In recent years, the industry has faced stiff competition from overseas producers, so any new methods that growers adopt must make sense economically as well as environmentally. Hilton is testing a growth regulator that interferes with the molting of codling moth larvae. Another study used pheromone dispensers to disrupt codling moth mating. These and other methods of integrated pest management have allowed pear growers to reduce their use of organophosphates by two-thirds and reduce all other synthetic pesticides by even more and still produce top-quality pears. These and other studies around the state are part of the effort of the IPPC to find alternative farming practices that benefit both the economy and the environment.

## QUESTIONS

### *Questions 1-8*

*Use the information in the passage to match the people (listed A-G) with opinions or deeds below. Write the appropriate letters A-G in boxes 1-8 on your answer sheet.*

**NB** you may use any letter more than once

- A. Tony Brown
- B. Patrick Leahy
- C. Bill Bowler
- D. Paul Jepson

E. Art Pimms

F. Steve Black

G. Rick Hilton

---

1. There is a double-advantage to the new techniques.
2. The work on developing these alternative techniques is not finished.
3. Eating food that has had chemicals used in its production is dangerous to our health.
4. Changing current farming methods into a new one is not a cheap process.
5. Results have exceeded the anticipated goal.
6. The research done should be translated into practical projects.
7. The U.S. produces the best food in the world nowadays.
8. Expectations of end users of agricultural products affect the products.

***Questions 9-13***

*Do the following statements agree with the information given in Reading Passage 1? In boxes 9-13 on your answer sheet, write*

*YES if the statement is true*

*NO if the statement is false*

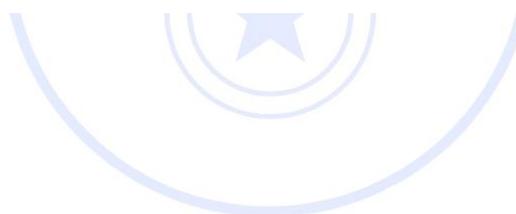
*NOT GIVEN if the formation is not given to the passage 1*

9. Integrated Pest Management has generally been regarded as a success in j the across the US.

- 10.** Oregon farmers of apples and pears have been promoted as successful examples of Integrated Pest Management.
- 11.** The IPPC uses scientists from different organisations globally
- 12.** Shaw mulch experiments produced unplanned benefits.
- 13.** The apple industry is now facing a lot of competition from abroad.

### **ANSWERS**

1	E	2	D	3	C
4	A	5	F	6	D
7	B	8	G	9	No
10	Yes	11	No	12	Yes
13	Not given				



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TEST 39:

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## REFLECTING ON THE MIRROR



In all likelihood the first mirrors would have simply been pools of water that reflected the image of the one who looked into it.

Nature's mirror, while cheap and readily accessible, must have also been quite frustrating with the slightest disturbance on the surface of the water making it difficult to see clearly. It is not altogether clear when the first man-made mirrors were produced but mirrors made of brass are mentioned in the Bible, and after that mirrors of bronze were in common use among the ancient Egyptians, Romans and Greeks. In addition to bronze, the Greeks and Romans experimented with polished silver to produce simple mirrors.

Crude forms of glass mirrors were first made in Venice in 1300. Small sheets of glass were cut from disks made by a spinning process. When this glass was backed with a covering of tin or lead, a 'mirror' resulted. During the early periods of their

development, mirrors were rare and expensive. France had glass factories but only in Venice, Italy was the secret of mirror foiling known. The chemical process of coating a glass surface with metallic silver was discovered by German chemist Justus von Liebig in 1835, and this advance inaugurated the modern techniques of mirror making.

By the end of the 17<sup>th</sup> century mirrors were made in Britain and the manufacture of mirrors developed subsequently into an important industry in many other European countries. People wore them in their hats, or set them like jewels in their rings. Society glittered and shone like the firmament. A little later on, America was gripped by the mirror craze, only this time they were interested in larger mirrors. In house after house in residential districts and eastern cities there could be found one long mirror after another placed between two front parlour windows.

In the manufacture of mirrors today, plate glass is cut to size, and all blemishes are removed by polishing with rouge. The glass is scrubbed and flushed with a reducing solution before silver is applied. The glass is then placed on a hollow, cast-iron tabletop, covered with felt, and kept warm by steam. A solution of silver nitrate is poured on the glass and left undisturbed for about 1 hour. The silver nitrate is reduced to a metallic silver and a lustrous deposit of silver gradually forms. The deposit is dried, coated with shellac, and painted. Most present-day mirrors

therefore, are made up of these layers. Glass is used on top because it is smooth, clear, and protects the reflective surface. A mirror needs to be very smooth in order for the best reflection to occur.

Mirrors may have plane or curved surfaces. A curved mirror is concave or convex depending on whether the reflecting surface faces toward the centre of the curvature or away from it. Curved mirrors in ordinary usage have surfaces of varying shapes.

Perhaps the most common is spherical. Spherical mirrors produce images that are magnified or reduced – exemplified, by mirrors for applying facial makeup and by rear-view mirrors for vehicles.

Cylindrical mirrors are another common type of shape. These focus a parallel beam flight to a linear focus. A paraboloidal mirror is one which is often used to focus parallel rays to a sharp focus, as in a telescope mirror, or to produce a parallel beam from a source at its focus, such as a searchlight. A less common but useful shape is the ellipsoidal. Such a mirror will reflect light from one of its two focal points to the other.

While the mirror is the focus of the production, the frame plays an important albeit slightly lesser role as the anchor by which the mirror is affixed to its proper place. From the late 17th century onward, mirrors and their frames played an increasingly important part in the decoration of rooms. Complementing the shiny reflective mirror, the early frames were usually of ivory, silver, ebony, or tortoiseshell or were veneered with walnut, olive,

and laburnum. Needlework and bead frames were also to be found. Craftsmen such as Grinling Gibbons often produced elaborately carved mirror frames to match a complete decorative ensemble. The tradition soon became established of incorporating a mirror into the space over the mantelpiece; many of the early versions of these mirrors, usually known as *overmantels*, were enclosed in glass frames. The architectural structure of which these mirrors formed a part became progressively more elaborate. Focusing heavily on the effect created by mirrors, 18<sup>th</sup> century designers such as the English brothers Robert and James Adam created fireplace units stretching from the hearth to the ceiling. Oil the whole, mirror frames reflected the general taste of the time and were often changed to accommodate alterations in taste – frames usually being cheaper and hence more easily replaced than the mirror itself.

## IELTS WINNERS

By the end of the 18th century, painted decoration largely supplanted carving on mirrors, the frames being decorated with floral patterns or classical ornaments. At the same time the French started producing circular mirrors. Usually surrounded by a neoclassical gilt frame that sometimes supported candlesticks, these mirrors enjoyed great popularity well into the 19<sup>th</sup> Improved skill in mirror making also made possible die introduction of the cheval glass, a freestanding full-length mirror, supported on a frame with four feet. These were mainly used for dressing

purposes, though occasionally they had a decorative function. New, cheaper techniques of mirror production in the 19th century led to a great proliferation in their use. Not only were they regularly incorporated into pieces of furniture – such as wardrobes and sideboards – they were also used in everything from high-powered telescopes to decorative schemes in public places. Their popularity continues today. Through them, infants are able to develop an awareness of their individuality through 'mirror games'. This type of emotional reflection stimulates babies to move various parts of their body and even promotes verbal utterances.

### Questions 1-5

*Do the following statements reflect the claims of the writer in Reading Passage 1?*

*In boxes 1-5 on your answer sheet write*

**TRUE**                    *if the statement agree with the information*

**FALSE**                  *if the statement contradicts the information*

**NOT GIVEN**            *if there is no information on this*

1  .The Greeks arid Egyptians used polished silver to make mirrors.

2  .The first man-made mirrors were made of bronze.

3  .Only the wealthy could afford the first mirrors.

4 [ ] .The first mirrors in America were used for decoration.

5 [ ] .Spherical mirrors are commonly used in cars.

### Questions 6-9

*Complete the labels on Diagram A below.*

*Write the correct letter A-J in boxes 6-9 on your answer sheet.*

**Diagram A: Magnified side-view of a mirror**

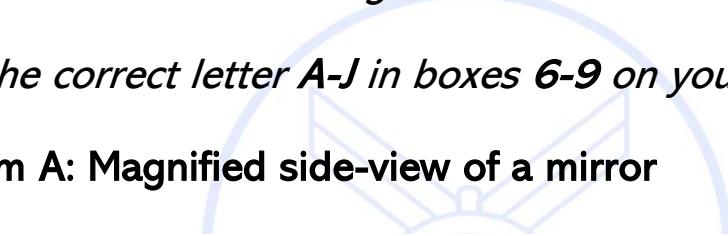
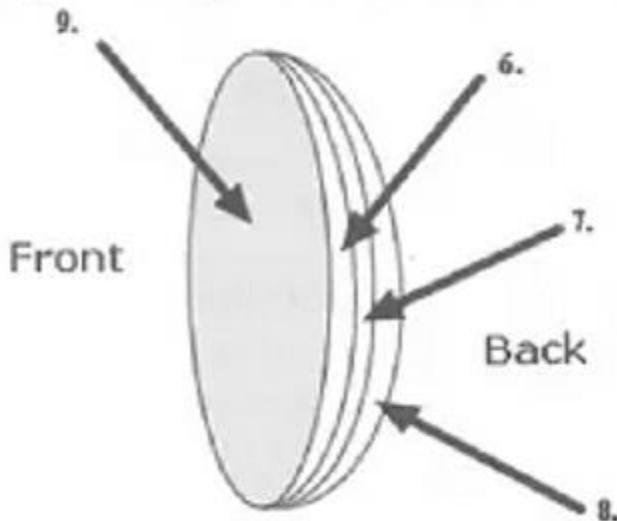


Diagram A: Magnified side-view of a mirror



A. rouge

B. cast iron

- C. felt
- D. steam
- E. shellac
- F. glass
- G. metal
- H. silver nitrate paint
- I. reducing solution

6

7

8

9



### Questions 10-13

**IELTS WINNERS**

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

*Crack IELTS the easy way*  
*Write your answers in boxes 10-13 on your answer sheet.*

**10. The type of mirror used for looking at the stars is**

A  . paraboloidal.

B  . spherical.

C  . cylindrical.

D  . ellipsoidal.

**11. 17<sup>th</sup> century craftsmen**

- A  . blended mirror frames well with other household furniture.
- B  . hung mirrors above fireplaces.
- C  . used mirror frames as a focus for home decoration.
- D  . established floral patterns as a standard for mirror frames.

**12. 18<sup>th</sup> century craftsmen**

- A  . designed furniture which highlighted the unique properties of mirrors.
- B  . experimented largely with mirror frames made of ebony and ivory.
- C  . built spherically-shaped minors.
- D  . experimented with ceiling mirrors around fireplaces.

**13. 19<sup>th</sup> century craftsmen**

- A  . used mirrors less than any previous time in history.
- B  . introduced mirrors as learning tools.
- C  . used mirrors extensively in bedroom furniture.
- D  . etched designs into mirrors.

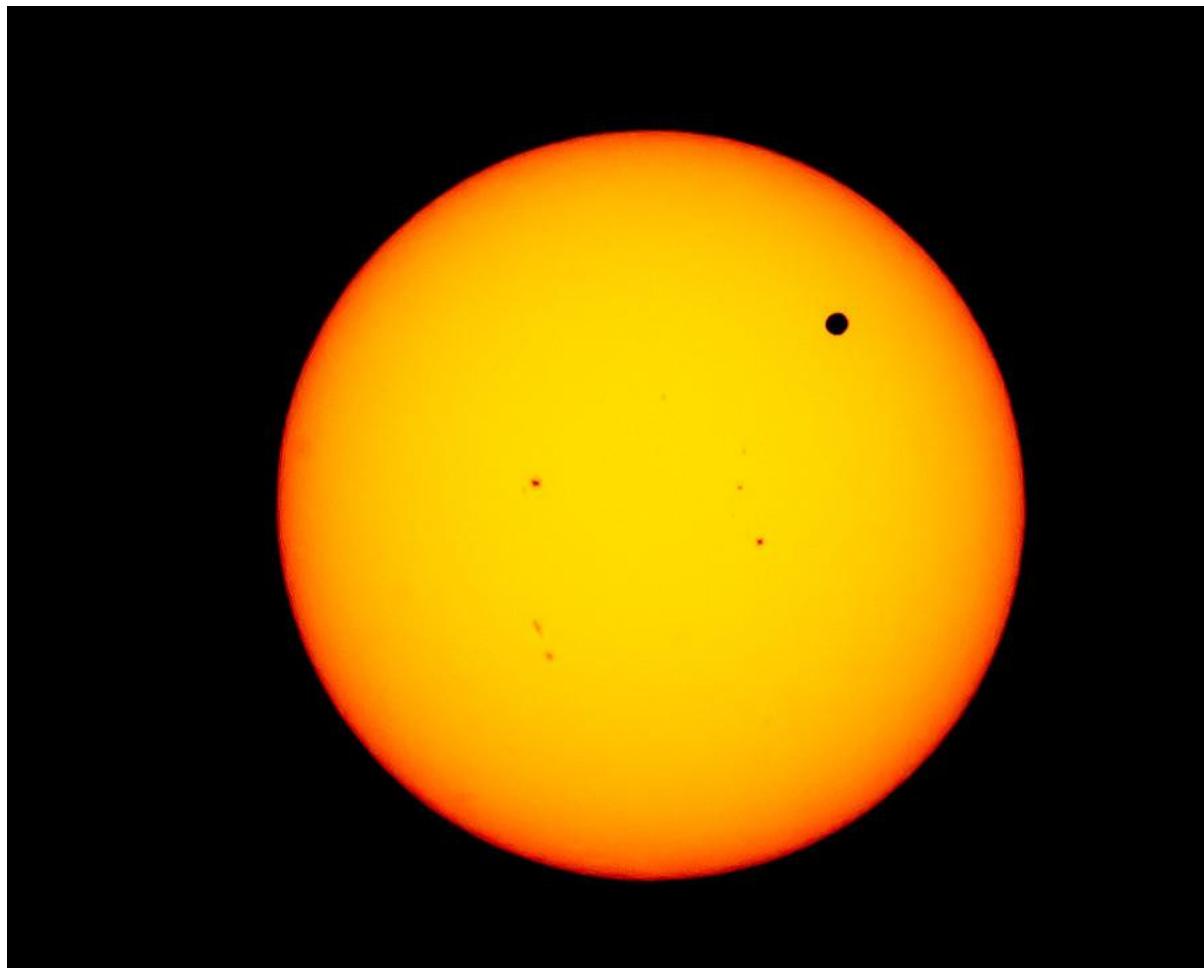
**Answer**

1. FALSE	8. I
2. FALSE	9. F
3. TRUE	10. A
4. NOT GIVEN	11. A
5. TRUE	12. A
6. H	13. C
7. E	

TEST 40:

**IELTS WINNERS***Crack IELTS the easy way*

## Venus in transit



### IELTS WINNERS

*June 2004 saw the first passage, known as a 'transit', of the planet Venus across the face of the Sun in 122 years. Transits have helped shape our view of the whole Universe, as Heather Cooper and Nigel Henbest explain*

---

## A

On 8 June 2004, more than half the population of the world were treated to a rare astronomical event. For over six hours, the planet Venus steadily inched its way over the surface of the Sun.

This ‘transit’ of Venus was the first since 6 December 1882. On that occasion, the American astronomer Professor Simon Newcomb led a party to South Africa to observe the event. They were based at a girls’ school, where - it is alleged - the combined forces of three schoolmistresses outperformed the professionals with the accuracy of their observations.

## B

For centuries, transits of Venus have drawn explorers and astronomers alike to the four corners of the globe. And you can put it all down to the extraordinary polymath Edmond Halley. In November 1677, Halley observed a transit of the innermost planet, Mercury, from the desolate island of St Helena in the South Pacific. He realised that, from different latitudes, the passage of the planet across the Sun’s disc would appear to differ. By timing the transit from two widely-separated locations, teams of astronomers could calculate the parallax angle - the apparent difference in position of an astronomical body due to a difference in the observer’s position. Calculating this angle would allow astronomers to measure what was then the ultimate goal: the distance of the Earth from the Sun. This distance is known as the astronomical unit’ or AU.

## C

Halley was aware that the AU was one of the most fundamental of all astronomical measurements. Johannes Kepler, in the early

17<sup>th</sup> century, had shown that the distances of the planets from the Sun governed their orbital speeds, which were easily measurable. But no-one had found a way to calculate accurate distances to the planets from the Earth. The goal was to measure the AU; then, knowing the orbital speeds of all the other planets round the Sun, the scale of the Solar System would fall into place. However, Halley realised that Mercury was so far away that its parallax angle would be very difficult to determine. As Venus was closer to the Earth, its parallax angle would be larger, and Halley worked out that by using Venus it would be possible to measure the Sun's distance to 1 part in 500. But there was a problem: transits of Venus, unlike those of Mercury, are rare, occurring in pairs roughly eight years apart every hundred or so years. Nevertheless, he accurately predicted that Venus would cross the face of the Sun in both 1761 and 1769 - though he didn't survive to see either.

## D

### *Crack IELTS the easy way*

Inspired by Halley's suggestion of a way to pin down the scale of the Solar System, teams of British and French astronomers set out on expeditions to places as diverse as India and Siberia. But things weren't helped by Britain and France being at war.

The person who deserves most sympathy is the French astronomer Guillaume Le Gentil.

He was thwarted by the fact that the British were besieging his observation site at Pondicherry in India. Fleeing on a French

warship crossing the Indian Ocean, Le Gentil saw a wonderful transit - but the ship's pitching and rolling ruled out any attempt at making accurate observations. Undaunted, he remained south of the equator, keeping himself busy by studying the islands of Mauritius and Madagascar before setting off to observe the next transit in the Philippines. Ironically after travelling nearly 50,000 kilometres, his view was clouded out at the last moment, a very dispiriting experience.

## E

While the early transit timings were as precise as instruments would allow, the measurements were dogged by the 'black drop' effect. When Venus begins to cross the Sun's disc, it looks smeared not circular - which makes it difficult to establish timings. This is due to diffraction of light. The second problem is that Venus exhibits a halo of light when it is seen just outside the Sun's disc. While this showed astronomers that Venus was surrounded by a thick layer of gases refracting sunlight around it, both effects made it impossible to obtain accurate timings.

## F

---

But astronomers laboured hard to analyse the results of these expeditions to observe Venus transits. Johann Franz Encke, Director of the Berlin Observatory, finally determined a value for the AU based on all these parallax measurements:

153,340,000 km. Reasonably accurate for the time, that is quite close to today's value of 149,597,870 km, determined by radar, which has now superseded transits and all other methods in accuracy. The AU is a cosmic measuring rod, and the basis of how we scale the Universe today. The parallax principle can be extended to measure the distances to the stars. If we look at a star in January - when Earth is at one point in its orbit - it will seem to be in a different position from where it appears six months later. Knowing the width of Earth's orbit, the parallax shift lets astronomers calculate the distance.

## G

June 2004's transit of Venus was thus more of an astronomical spectacle than a scientifically important event. But such transits have paved the way for what might prove to be one of the most vital breakthroughs in the cosmos - detecting Earth-sized planets orbiting other stars.

### **Questions 1-4** *Crack IELTS the easy way*

*Reading Passage has seven paragraphs, A-G.*

*Which paragraph contains the following information?*

*Write the correct letter, A-G, in boxes 1-4 on your answer sheet.*

- 1  examples of different ways in which the parallax principle has been applied

2  a description of an event which prevented a transit observation

3  a statement about potential future discoveries leading on from transit observations

4  a description of physical states connected with Venus which early astronomical instruments failed to overcome

### Questions 5-8

*Look at the following statements (Questions 5-8) and the list of people below.*

*Match each statement with the correct person, A, B, C or D.*

*Write the correct letter, A, B, C or D, in boxes 5-8 on your answer sheet.*

List of People	
A	Edmond Halley
B	Johannes Kepler
C	Guillaume Le Gentil
D	Johann Franz Encke

5  He calculated the distance of the Sun from the Earth based on observations of Venus with a fair degree of accuracy.

6  He understood that the distance of the Sun from the Earth could be worked out by comparing observations of a transit.

7  He realised that the time taken by a planet to go round the Sun depends on its distance from the Sun.

8  He witnessed a Venus transit but was unable to make any calculations.

### Questions 9-13

*Do the following statements agree with the information given in Reading Passage?*

*In boxes 9-13 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

9  Halley observed one transit of the planet Venus.

10  Le Gentil managed to observe a second Venus transit.

11  The shape of Venus appears distorted when it starts to pass in front of the Sun.

12  Early astronomers suspected that the atmosphere on Venus was toxic.

13  The parallax principle allows astronomers to work out how far away distant stars are from the Earth.

### Answer

1. F	8. C
2. D	9. FALSE
3. G	10. FALSE
4. E	11. TRUE
5. D	12. NOT GIVEN
6. A	13. TRUE
7. B	

---

TEST 41:

## THE HISTORY 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.

### 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

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

*Example*                           *Answer*

*Paragraph A*                   *iv*

- 28. Paragraph B
- 29. Paragraph C
- 30. Paragraph D
- 31. Paragraph E

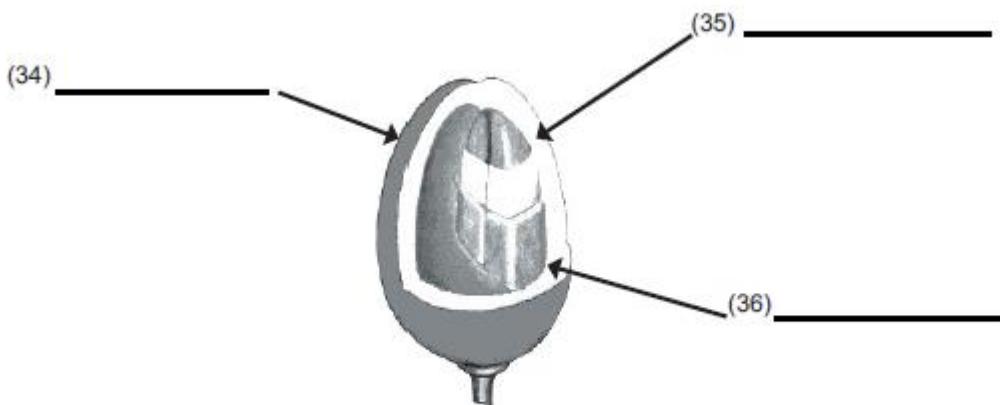
32. Paragraph F

33. Paragraph G

**Questions 34 - 36**

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**

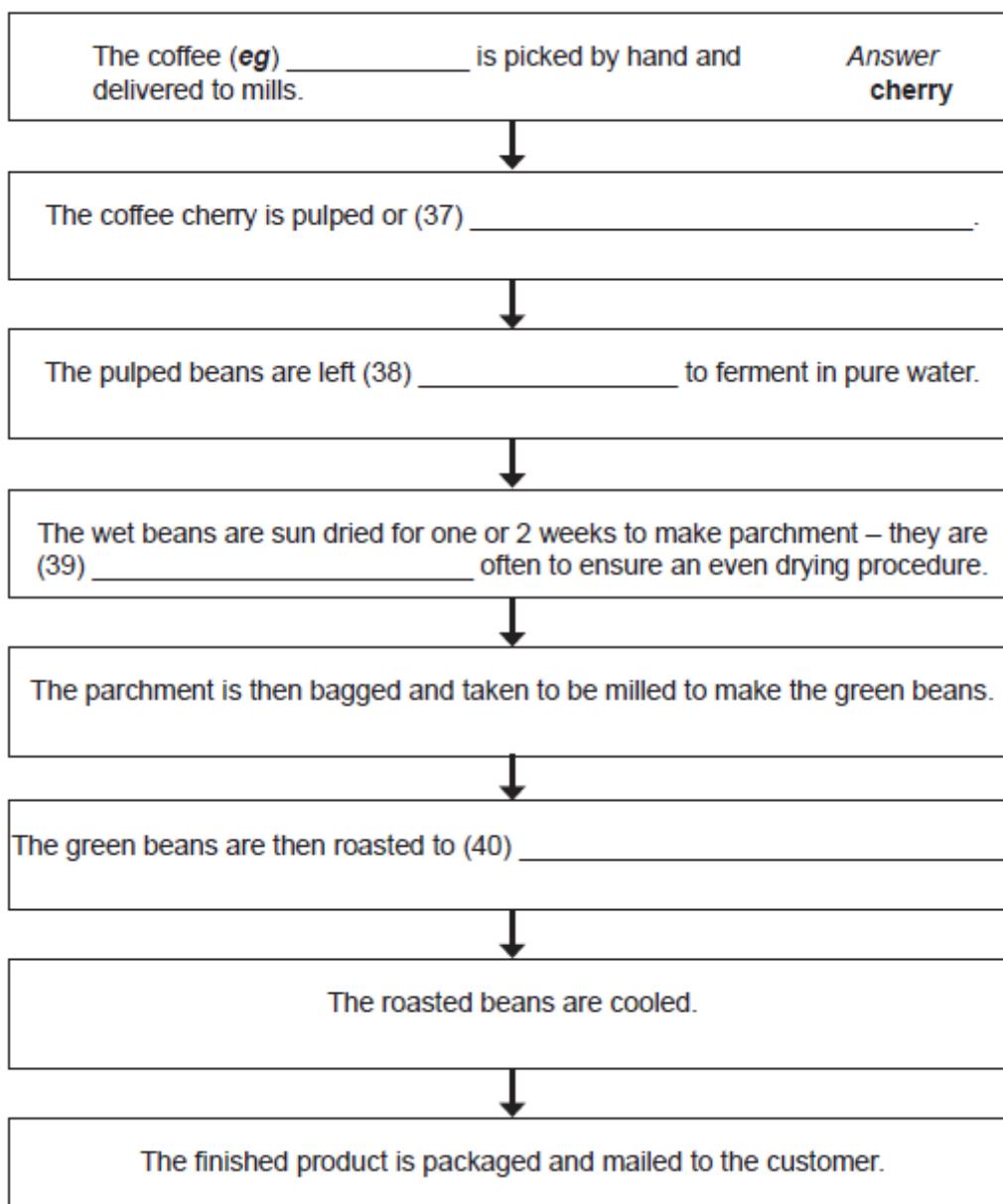
Using the information in the passage, complete the flow chart below.

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



### Answer:

28. viii

29. ix

30. vi

31. xi

32. i

- 33. iii
- 34. epicarp
- 35. mesocarp
- 36. endocarp
- 37. wet milled
- 38. overnight
- 39. raked (many times)
- 40. (the) customers' specifications

TEST 42:

**Intelligence and Giftedness**



## **INTELLIGENCE AND GIFTEDNESS**

**A**

In 1904 the French minister of education, facing limited resources for schooling, sought a way to separate the unable from the merely lazy. Alfred Binet got the job of devising selection principles and his brilliant solution put a stamp on the study of intelligence and was the forerunner of intelligence tests still used today, he developed a thirty-problem test in 1905, which tapped several abilities related to intellect, such as judgment and reasoning, the test determined a given child's 'mental age'. The test previously established a norm for children of a given physical age. (for example, five-year-old on average get ten items correct), therefore, a child with a mental age of five should score 10, which would mean that he or she was functioning pretty much as others of that age. The child's mental age was then compared to his physical age.

**B**

A large disparity in the wrong direction (e.g., a child of nine with a mental age of four) might suggest inability rather than laziness and mean he or she was earmarked for special schooling, Binet, however, denied that the test was measuring intelligence, its purpose was simply diagnostic, for selection only. This message was however lost and caused many problems and misunderstanding later.

**C**

Although Binet's test was popular, it was a bit inconvenient to deal with a variety of physical and mental ages. So in 1912, Wilhelm Stern suggested simplifying this by reducing the two to a single number, he divided the mental age by the physical age and multiplied the result by 100. An average child, irrespective of age, would score 100. A number much lower than 100 would suggest the need for help, and one much higher would suggest a child well ahead of his peer.

## D

This measurement is what is now termed the IQ (for intelligence quotient) score and it has evolved to be used to show how a person, adult or child, performed in relation to others. (the term IQ was coined by Lewis M. Terman, professor of psychology and education of Stanford University, in 1916. He had constructed an enormously influential revision of Binet's test, called the Stanford-Binet test, versions of which are still given extensively.)

## E

### *Crack IELTS the easy way*

The field studying intelligence and developing tests eventually coalesced into a sub-field of psychology called psychometrics (psycho for 'mind' and metrics for 'measurements'). The practical side of psychometrics (the development and use of tests) became widespread quite early, by 1917, when Einstein published his grand theory of relativity, mass-scale testing was already in use. Germany's unrestricted submarine warfare (which led to the

sinking of the Lusitania in 1915) provoked the United States to finally enter the First World War in the same year. The military had to build up an army very quickly; it had two million inductees to sort out. Who would become officers and who enlisted men? Psychometricians developed two intelligence tests that help sort all these people out, at least to some extent, this was the first major use of testing to decide who lived and who died, as officers were a lot safer on the battlefield, the tests themselves were given under horrendously bad conditions, and the examiners seemed to lack commonsense, a lot of recruits simply had no idea what to do and in several sessions most inductees scored zero! The examiners also came up with the quite astounding conclusion from the testing that the average American adult's intelligence was equal to that of a thirteen-year-old!

## F

Intelligence testing enforced political and social prejudice, their results were used to argue that Jews ought to be kept out of the united states because they were so intelligently inferior that they would pollute the racial mix, and blacks ought not to be allowed to breed at all. And so abuse and test bias controversies continued to plaque psychometrics.

## G

Measurement is fundamental to science and technology, science often advances in leaps and bounds when measurement devices

improve, psychometrics has long tried to develop ways to gauge psychological qualities such as intelligence and more specific abilities, anxiety, extroversion, emotional stability, compatibility, with a marriage partner, and so on. Their scores are often given enormous weight, a single IQ measurement can take on a life of its own if teachers and parents see it as definitive, it became a major issue in the 70s, when court cases were launched to stop anyone from making important decisions based on IQ test scores, the main criticism was and still is that current tests don't really measure intelligence, whether intelligence can be measured at all is still controversial, some say it cannot others say that IQ tests are psychology's greatest accomplishments.

### Questions 14-17

The Reading Passage has seven paragraphs A-G

Which paragraph contains the following information?

*Write the correct letter A-G, in boxes 14-17 on your answer sheet.*

---

14  IQ is just one single factor of human characteristics.

15  Discussion of the methodology behind Professor Stern's test.

16  Inadequacy of IQ test from Binet.

17  The definition of IQ was created by a professor.

### Questions 18-21

18 Professor Binet devises the test to .....

- A  find those who do not perform satisfied
- B  choose the best one
- C  measure the intelligence
- D  establish the standard of intelligence

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19 The test is designed according to .....

- A  math

- B  age

- 
- C  reading skill

- D  gender

20 U.S. Army used Intelligence tests to select.....

- A  Officers
- B  Normal Soldiers
- C  Examiners
- D  Submarine drivers.

21 the purpose of the text is to.....

- A  Give credit to the contribution of Binet in IQ test
- B  prove someone's theory is feasible.
- C  discuss the validity and limitation of the test
- D  outline the history of the test

### Questions 22-26

Do the following statements agree with the information given in  
Reading Passage 2?

*In boxes 22-26 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

- 22**  Part the intension in designing the test by professor Binet has been misunderstood.
- 23**  Age as a factor is completely overlooked in the simplified tests by Wilhelm Stern
- 24**  Einstein was a counter-example of IQ test conclusion.
- 25**  IQ test may probably lead to racial discrimination as a negative effect.
- 26**  The author regards measuring intelligent test as a goal hardly meaningful.

## ANSWERS

14	G	15	C	16	B
17	D	18	B	19	B
20	A	21	C	22	True
23	False	24	Not given	25	True
26	Not given				

## TEST 43:

## MAKING TIME FOR SCIENCE

Chronobiology might sound a little futuristic – like something from a science fiction novel, perhaps – but it's actually a field of study that concerns one of the oldest processes life on this planet has ever known: short-term rhythms of time and their effect on flora and fauna.

This can take many forms. Marine life, for example, is influenced by tidal patterns. Animals tend to be active or inactive depending on the position of the sun or moon. Numerous creatures, humans included, are largely diurnal – that is, they like to come out during the hours of sunlight. Nocturnal animals, such as bats and possums, prefer to forage by night. A third group are known as crepuscular: they thrive in the lowlight of dawn and dusk and remain inactive at other hours.

When it comes to humans, chronobiologists are interested in what is known as the circadian rhythm. This is the complete cycle our bodies are naturally geared to undergo within the passage of a twenty-four hour day. Aside from sleeping at night and waking during the day, each cycle involves many other factors such as changes in blood pressure and body temperature. Not everyone has an identical circadian rhythm. ‘Night people’, for example, often describe how they find it very hard to operate during the morning, but become alert and focused by evening. This is

a benign variation within circadian rhythms known as a chronotype.

Scientists have limited abilities to create durable modifications of chronobiological demands. Recent therapeutic developments for humans such as artificial light machines and melatonin administration can reset our circadian rhythms, for example, but our bodies can tell the difference and health suffers when we breach these natural rhythms for extended periods of time. Plants appear no more malleable in this respect; studies demonstrate that vegetables grown in season and ripened on the tree are far higher in essential nutrients than those grown in greenhouses and ripened by laser.

Knowledge of chronobiological patterns can have many pragmatic implications for our day-to-day lives. While contemporary living can sometimes appear to subjugate biology – after all, who needs circadian rhythms when we have caffeine pills, energy drinks, shift work and cities that never sleep? – keeping in sync with our body clock is important.

The average urban resident, for example, rouses at the eye-clearing time of 6.04 a.m., which researchers believe to be far too early. One study found that even rising at 7.00 a.m. has deleterious effects on health unless exercise is performed for 30

minutes afterward. The optimum moment has been whittled down to 7.22 a.m.; muscle aches, headaches and moodiness were reported to be lowest by participants in the study who awoke then.

Once you're up and ready to go, what then? If you're trying to shed some extra pounds, dieticians are adamant: never skip breakfast. This disorients your circadian rhythm and puts your body in starvation mode. The recommended course of action is to follow an intense workout with a carbohydrate-rich breakfast; the other way round and weight loss results are not as pronounced.

Morning is also great for breaking out the vitamins. Supplement absorption by the body is not temporal-dependent, but naturopath Pam Stone notes that the extra boost at breakfast helps us get energised for the day ahead. For improved absorption, Stone suggests pairing supplements with a food in which they are soluble and steering clear of caffeinated beverages. Finally, Stone warns to take care with storage; high potency is best for absorption, and warmth and humidity are known to deplete the potency of a supplement.

After-dinner espressos are becoming more of a tradition – we have the Italians to thank for that – but to prepare for a good night's sleep we are better off putting the brakes on caffeine consumption as early as 3 p.m. With a seven hour half-life, a cup of coffee containing 90 mg of caffeine taken at this hour could still leave 45 mg of caffeine in your nervous system at ten o'clock that evening. It is essential that, by the time you are ready to sleep, your body is rid of all traces.

Evenings are important for winding down before sleep; however, dietician Geraldine Georgeou warns that an after-five carbohydrate-fast is more cultural myth than chronobiological demand. This will deprive your body of vital energy needs. Overloading your gut could lead to indigestion, hough. Our digestive tracts do not shut down for the night entirely, but their work slows to a crawl as our bodies prepare for sleep. Consuming a modest snack should be entirely sufficient.

### Questions 1–7

*Do the following statements agree with the information given in Reading Passage 1? 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 . Chronobiology is the study of how living things have evolved over time.

- 2 . The rise and fall of sea levels affects how sea creatures behave.
- 3 . Most animals are active during the daytime.
- 4 . Circadian rhythms identify how we do different things on different days.
- 5 . A ‘night person’ can still have a healthy circadian rhythm.
- 6 . New therapies can permanently change circadian rhythms without causing harm.
- 7 . Naturally-produced vegetables have more nutritional value.
- Questions 8–13**
- Choose the correct letter, A, B, C or D.*
- 8 . What did researchers identify as the ideal time to wake up in the morning?
- A. 6.04
  - B. 7.00
  - C. 7.22
  - D. 7.30
- 9 . In order to lose weight, we should
- A. avoid eating breakfast
  - B. eat a low carbohydrate breakfast
  - C. exercise before breakfast
  - D. exercise after breakfast
- 10 . Which is NOT mentioned as a way to improve supplement absorption?
- A. avoiding drinks containing caffeine while taking supplements

- B. taking supplements at breakfast
- C. taking supplements with foods that can dissolve them
- D. storing supplements in a cool, dry environment

**11 .** The best time to stop drinking coffee is

- A. mid-afternoon
- B. 10 p.m.
- C. only when feeling anxious
- D. after dinner

**12 .** In the evening, we should

- A. stay away from carbohydrates
- B. stop exercising
- C. eat as much as possible
- D. eat a light meal

**13 .** Which of the following phrases best describes the main aim of Reading Passage 1?

- A. to suggest healthier ways of eating, sleeping and exercising
- B. to describe how modern life has made chronobiology largely irrelevant
- C. to introduce chronobiology and describe some practical applications
- D. to plan a daily schedule that can alter our natural chronobiological rhythms

### Answer

1. FALSE
2. TRUE
3. NOT GIVEN
4. FALSE
5. TRUE
6. FALSE
7. TRUE
8. C
9. C
10. B
11. A
12. D
13. C

## TEST 44:

### GRAFFITI

#### A

The word ‘graffiti’ derives from the Greek word *graphein*, meaning *to write*. This evolved into the Latin word *graffito*. Graffiti is the plural form of *graffito*. Simply put, graffiti is a drawing, scribbling or writing on a flat surface. Today,

we equate graffiti with the ‘New York’ or ‘Hip Hop’ style which emerged from New York City in the 1970s. Hip Hop was originally an inner-city concept. It evolved from the rap music made in Brooklyn and Harlem in the late 1960s and early 1970s. Donald Clarke, a music historian, has written that rap music was a reaction to the disco music of the period. Disco was centred in the rich, elitist clubs of Manhattan and rap emerged on street corners as an alternative. Using lyrical rhythms and ‘beat boxing’, the music was a way to express feelings about inner-city life. Hip Hop emerged as turntables began to be used to form part of the rhythm by ‘scratching’ (the sound created by running the stylus over the grooves of an LP). As Hip Hop music emerged so did a new outlet for artistic visibility. Keith Haring began using posters to place his uniquely drawn figures and characters in public places. Soon he began to draw directly on subway walls and transit posters. The uniqueness of his drawings eventually led to their being shown in galleries and published in books and his art became ‘legitimate’.

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**B**

At about the same time as Keith Haring, a delivery messenger began writing ‘Taki 183’ whenever he delivered documents. Soon his name was all over the city. Newspapers and magazines wrote articles about him and Keith Haring, and soon both became celebrities. This claim to fame attracted many young people,

especially those involved with rapping, and they began to imitate 'Taki 183', as a means to indicate the writer's presence, i.e. the age-old statement of */ was here*. Graffiti was soon incorporated into the Hip Hop culture and became a sort of triad with rapping and breakdancing. Breakdancing has since lost much of its initial popularity, while rapping has emerged as a major style in American music. New York City was inundated with graffiti during the late seventies and early eighties, but as media coverage faded so did the graffiti. Then, in the mid-eighties, a national TV programme did a graffiti story and set off a graffiti wildfire which has since gone global.

## C

In the past, graffiti artists usually worked alone, but the size and complexity of pieces, as well as safety concerns, motivated artists to work together in crews, which are groups of graffitists that vary in membership from 3 to 10 or more persons. A member of a crew can be 'down with' (affiliated with) more than one crew. To join a crew, one must have produced stylish pieces and show potential for developing one's own, unique style. A crew is headed by a king or queen who is usually that person recognised as having the best artistic ability among the members of the crew. One early crew wrote TAG as their crew name, an acronym for Tuff Artists Group. Tag has since come to mean both graffiti writing, 'tagging' and graffiti, a 'tag'. Crews often tag together, writing both the crew tag and their own personal tags. Graffiti

has its own language with terms such as piece, toy, wild-style, and racking.

## D

At first pens and markets were used, but these were limited as to what types of surfaces they worked on, so very quickly everyone started using spray paint. Spray paint could mark all types of surfaces and be quick and easy to use. However, the spray nozzles on the spray cans proved inadequate to create more colourful pieces. Caps from deodorant, insecticide, and other aerosol cans were substituted to allow for a finer or thicker stream of paint. As municipalities began passing graffiti ordinances outlawing graffiti implements, clever ways of disguising paint implements were devised. Shoe polish, deodorant roll-ons and other seemingly innocent containers were emptied and filled with paint. Markers, art pens and grease pens obtained from art supply stores were also used. In fact, nearly any object which can leave a mark on most surfaces is used by taggers, though the spray can is the medium of choice for most taggers.

## E

As graffiti has grown, so too has its character. What began as an urban lower-income protest, graffiti now spans all racial and economic groups. While many inner-city kids are still heavily involved in the graffiti culture, taggers range from the ultra-rich to the ultra-poor. There is no general classification of graffitists.

They range in age from 12-30 years old, and there are male and female artists. One tagger recently caught in Philadelphia was a 27-year-old stockbroker who drove to tagging sites in his BMW. Styles have dramatically evolved from the simple cursory style, which is still the most prevalent, to intricate interlocking letter graphic designs with multiple colours called 'pieces' (from master-pieces). Gang markings of territory also fit the definition of graffiti, and they mainly consist of tags and messages that provide 'news' of happenings in the neighbourhood.

## F

Graffiti shops, both retail and on-line, sell a wide variety of items to taggers. Caps, markers, magazines, T-shirts, backpacks, shorts with hidden pockets, even drawing books with templates of different railroad cars can be purchased. Over 25,000 graffiti sites exist on the world wide web; the majority of these are pro-graffiti. Graffiti vandalism is a problem in nearly every urban area in the world. Pro-graffiti web sites post photos of graffiti from Europe, South America, the Philippines, Australia, South Africa, China and Japan. Billions of dollars worldwide are spent each year in an effort to curb graffiti.

## G

While most taggers are simply interested in seeing their name is as many places as possible and as visibly as possible, some taggers are more content to find secluded warehouse walls where they can practise their pieces. Some of these taggers are able to

sell twelve-foot canvases of their work for upwards of \$10 – \$12,000. As graffiti was introduced to the art world, two trends happened. One, the art world of collectors, dealers, curators, artists and the like helped graffitists evolve in style, presumably by sharing their artistic knowledge with the newcomers. Two, the exposure helped to expand graffiti into all parts of the world. Furthermore, more progressive cities have recognised the talent of graffitists by providing a means for them to do legal graffiti art, which has helped to foster the art form and lessen the amount of graffiti art that appears in the city as vandalism. Likewise, organisations who support graffiti artists seek out places to do legal graffiti such as abandoned buildings, businesses, or community walls in parks. What this shows is that some graffiti, particularly in the form of a spray can art, is recognised as art by the conventional art world.

### Questions 1-7

Reading Passage 1 has seven paragraphs, A-G.

Choose the correct heading for each paragraph from the list of headings below.

*Write the correct number i-x in boxes 1-7 on your answer sheet.*

- i      Becoming mainstream art
- ii     The Culture Of Graffiti
- iii    Tools Of The Trade
- iv    Internet Art Styles

- v Crossing Boundaries
  - vi Cashing In On The Craze
  - vii Trends In Street Music
  - viii Gradually gaining popularity
  - ix A Solitary Existence
  - x From Ancient To Modern
- 1 Paragraph A
  - 2 Paragraph B
  - 3 Paragraph C
  - 4 Paragraph D
  - 5 Paragraph E
  - 6 Paragraph F
  - 7 Paragraph G

### Questions 8-10

Do the following statements agree with the information given in  
Reading Passage 1?

In boxes 8-10 on your answer sheet, write

**TRUE** if the statement agrees with the writer's claims

**FALSE** if the statement contradicts the writer's claims

**NOT GIVEN** if it is impossible to say what the writer thinks  
about this

**8** The introduction of anti-graffiti laws managed to curb its  
spread in some cities.

**9** Along with Hip Hop music came a new way of visual expression.

**10** There was hostility towards graffiti artists among the established art community.

### Questions 11-13

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

*Write the correct letter A-F in boxes 11-13 on your answer sheet.*

**11** Graffiti is flourishing in the 21st century as people from all backgrounds have begun to .....

**12** As graffiti has developed, it has come to

.....

**13** Graffiti artists used many ingenious methods to

.....

**A** use it as a means of expression of rebellion against law enforcement.

**B** become increasingly more difficult to succeed in the art world.

**C** transcend race, status and gender.

**D** realise that inner-urban areas where poverty is the norm are decreasing.

**E** conceal their intentions from law enforcement officers.

**F** embrace it as a means of expression.

### ANSWERS:

1. x
2. viii
3. ii
4. iii
5. v
6. vi
7. i
8. NOT GIVEN
9. TRUE
10. FALSE
11. FALSE
12. C
13. E

## TEST 45:

### TREE TOP RESEARCH:

A The forest canopy—the term given to the aggregated crowns of trees in a forest—is thought to host up to 40 per cent of all species, of which ten percent could be unique to the forest roof. “We’re dealing with the richest, least known, most threatened habitat on Earth,” says Andrew Mitchell, the executive director of

the Global Canopy Programme (GCP), a collection of groups undertaking research into this lofty world. “The problem with our understanding of forests is that nearly all the information we have has been gleaned from just two metres above the soil, and yet we’re dealing with trees that grow to heights of 60 metres, or in the case of the tallest redwood 112 metres. It’s like doctors trying to treat humans by only looking at their feet.”

**B** Tropical rainforest comprises the richest of ecosystems, rivalled only by coral reef for its diversity and complex interrelationships. And a great deal of that diversity lives up in the canopy—an estimated 70-90 percent of life in the rainforest exists in the trees; one in ten of all vascular plants are canopy dwellers; and about 20-25 per cent of all invertebrates are thought to be unique to the canopy.



Researcher on the Tree Crown

C The first Briton to actually get into the canopy may have been Sir Francis Drake who, in 1573, gained his first glimpse of the Pacific Ocean from a tall tree in Darien, Panama. However, the first serious effort to reach and study the canopy didn't begin until 1929. The Oxford University Expedition to British Guiana, led by Major RWG Hingston, still ended up requiring the help of locals when it came to building an observation platform. It was a successful expedition all the same, despite the colony's acting governor getting stuck high up on a winched seat during a visit. In terms of canopy access, the French have proved themselves to be excellent innovators, taking things further with the development of 'lighter than-air platforms'—balloons and related equipment, to you and me. Francis Halle; from the Laboratoire de Botanique Tropicale at Montpellier University took to a balloon in the mid-1980s in order to approach the canopy from above. His work in French Guiana was inspired by the use in Gabon of a tethered helium balloon by Marcel and Annette Hladick. Halle went one further by using a small, purpose-built airship—a cigar-shaped balloon with propellers to aid manoeuvrability. "We suddenly had a mobile system that could move around the treetops; there was no other means of doing this," says Mitchell.

D From this, two balloon-dependent features have developed: the radeau or raft, and the luge or sledge. The raft is a 'floating' platform, employed by French academics Dany Cleyet-Marrel and Laurent Pyot and is essentially an island in the treetops. Made of

kevlar mesh netting and edged with inflated neoprene tubes, it rests on top of the canopy, allowing sampling (mostly of plants and insects) to take place at the edges of the platform, and can stay in position for several days . The luge, on the other hand, is an inflated hexagon similar to a traditional balloon basket but with a hole in the bottom covered with Kevlar mesh. Such techniques aren't without their problems, however. "Balloons can cover larger areas, especially for collection purposes, but they are extremely expensive- Jibe raft alone cost 122,000 [euro] (86,000 [pounds sterling]) in 2001, not very effective because you can only reach the tops of the trees, and are highly dependent on the weather," says Dr Wilfried Morawetz, director of systematic botany at the University of Leipzig. "Balloons can usually only be used in the early morning for two to four hours. Last time, we could only fly three times during a whole week." Given these factors, it comes as no surprise that operations involving these balloons numbered just six between 1986 and 2001.

**E** The next major innovation came from Alan Smith, who worked at the Smithsonian Tropical Research Institute in Panama. Smith had the idea of using a static crane to get into the treetops. Untethered balloons may allow widely distributed sites to be sampled, but cranes allow scientists to study an area of at least a hectare from soil to canopy throughout the year, year after year. "Cranes beat any other access modes. They are cheap, reliable

and fast. In two minutes I can reach any point in our forest, which is essential for comparative measurements across species," says Professor Christian Körner of the University of Basel. Körner is using a static crane in a unique carbon dioxide-enrichment experiment in Switzerland, in an attempt to discover how forests might respond to the global increase in atmospheric carbon dioxide. For reasons of convenience, cranes are generally situated close to cities or a research centre. Leipzig University has a crane not far from the town, the location allowing scientists to study the effect of city pollutants on forests. In order to increase the amount of canopy a crane can access, some have been mounted on short rail tracks. In 1995, Dr Wilfried Morawetz was the first to use this technique, installing a crane on 150 metres of track in Venezuelan rainforest. "In my opinion, cranes should be the core of canopy research in the future," he says.

F It appears that the rest of the scientific community has now come around to Mitchell's way of thinking. "I think most scientists thought him mad to consider such a complex field station at first," says internationally respected 'canopist' Meg Lowman, the executive director of the Marie Selby Botanical Gardens. "However, we've all come to realize that a combination of methods, a long-term approach to ecological studies and a collaborative approach are the absolute best ways to advance canopy science. A permanent canopy field station would allow that to happen." With a dedicated group of canopy scientists

working together and a wide range of tools available for them to get into the treetops, we're now finally on our way towards a true understanding of the least-known terrestrial habitat.

## QUESTIONS

**Questions 14-18** 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 ecological significance for canopy study.

**15** the first academic research attempt mentioned to get to the top canopy.

**16** the overview idea of forest canopy and the problem of understanding the forests.

**17** a recognition for a long term effect and cooperation.

**18** an innovation accessing to treetop which proved to be an ultimate solution till now.

**Questions 19-22** 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 **19-22** on your answer sheet.

Scientists keep trying new methods to access to the canopy of the treetop. Though early attempt succeeded in building an observation platform yet the help of the **19** ..... was imperative: Further innovators made by the French who built a platform with equipments by using **20** ..... . Later, the 'floating' platform of **21** ..... is serving as an island in the

treetops. Then finally, there came the next major breakthrough in Panama. Scientist applied 22 ..... to access to the treetops, which are proved to be the centre of canopy research in today and in the future.

**Questions 23-27** Use the information in the passage to match the people (listed A-F) with opinions or deeds below. Write the appropriate letters A-F in boxes 23-26 on your answer sheet.

**NB you may use any letter more than once**

A Sir Francis Drake

B Wilfried Morawetz

C Dany Cleyet-Marrel

D Francis Halle

E Christian Korner

F Alan Smith

**23** Scientist whose work was inspired by the method used by other researchers.

**24** Scientist who made a claim that balloon could only be used in a limited frequency or time.

**25** Scientist who initiated a successful access mode which is cheap and stable.

**26** Scientist who had committed canopy-crane experiment for a specific scientific project.

**27** Scientist who initiated the use of crane on the short rail tracks.

## ANSWERS

14. B

15. C

16. A

17. F

18. E

19. locals

20. balloons

21. raft/rafts

22. (static) crane/cranes

23. D

24. B

25. F

26. E

27. B

## TEST 46:

### BRAND LOYALTY RUNS DEEP

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 Solidarposc 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.

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.

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.

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.

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 good, 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.

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 calorific 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.

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 appropriate yet more advertising is hardly welcome.

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.

*Crack IELTS the easy way*  
**Questions 14-18**

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

Write the correct letter in boxes 14-18 on your answer sheet.

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

A at markets.

B wholesale.

C online.

D retail.

**15 In Sydney, shoppers can buy beer from**

A China and Indonesia.

B India and South Africa.

C Poland.

D Vietnam.

**16 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.

**17 The writer thinks supermarkets ..... should change their products slightly.**

A in Australia

B in India and the US

C in Switzerland

D worldwide

**18 The writer suggests that:**

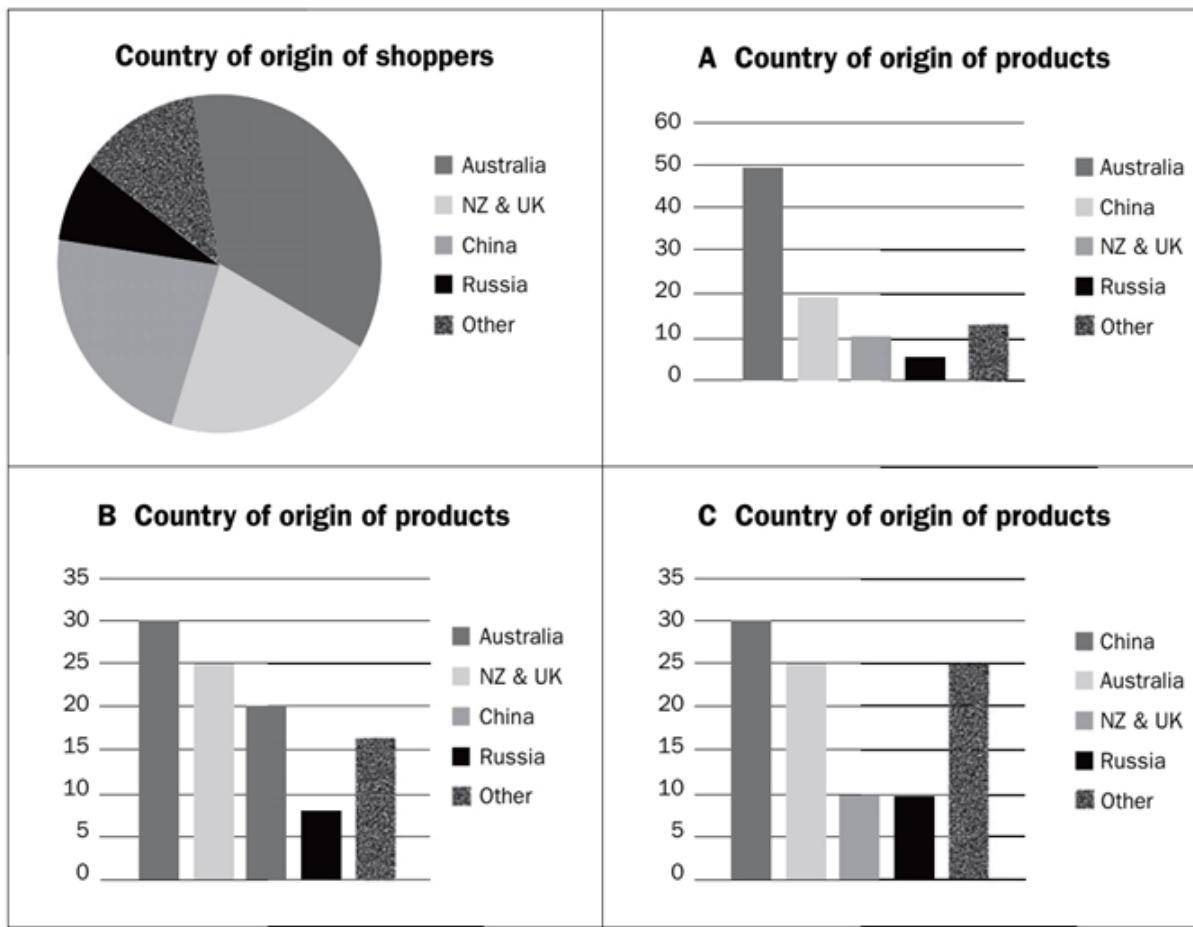
- A the quality of products at specialist shops will always be better than at supermarkets.
- B specialist shops will close down because supermarkets will be cheaper.
- C specialist shops already supply minority groups, so supermarkets shouldn't bother.
- D specialist shops already supply minority groups, yet supermarkets should compete with them.

*Question 19*

Which 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 19 on your answer sheet.

---



*Questions 20-26*

Which study/studies do the following statements relate to?

In boxes 20-26 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

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

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

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

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

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

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

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

## Answers

14. D

15. A

16. B

17. D

18. D

19. B

20. C

21. C

22. B

23. A

24. A

25. C

26. C

#### TEST 47:

#### **Dirty River But Clean Water**

*Floods can occur in rivers when the flow rate exceeds the capacity of the river channel, particularly at bends or meanders in the waterway. Floods often cause damage to homes and businesses if they are in the natural floodplains of rivers. While riverine flood damage can be eliminated by moving away from*

*rivers and other bodies of water, people have traditionally lived and worked by rivers because the land is usually flat and fertile and because rivers provide easy travel and access to commerce and industry.*

{A} FIRE and flood are two of humanity's worst nightmares. People have, therefore, always sought to control them. Forest fires are snuffed out quickly. The flow of rivers is regulated by weirs and dams. At least, that is how it used to be. But foresters have learned that forests need fires to clear out the brush and even to get seeds to germinate. And a similar revelation is now dawning on hydrologists. Rivers — and the ecosystems they support — need floods. That is why a man-made torrent has been surging down the Grand Canyon. By Thursday, March 6th it was running at full throttle, which was expected to be sustained for 60 hours.

{B} Floods once raged through the canyon every year. Spring Snow from as far away as Wyoming would melt and swell the Colorado river to a flow that averaged around 1,500 cubic meters (50,000 cubic feet) a second. Every eight years or so, that figure rose to almost 3,000 cubic meters. These floods infused the river with sediment, carved its beaches, and built its sandbars.

{C} However, in the four decades since the building of the Glen Canyon dam, just upstream of the Grand Canyon, the only sediment that it has collected has come from tiny, undammed

tributaries. Even that has not been much use as those tributaries are not powerful enough to distribute the sediment in an ecologically valuable way.

{D} This lack of flooding has harmed local wildlife. The humpback chub, for example, thrived in the rust-red waters of Colorado. Recently, though, its population has crashed. At first sight, it looked as if the reason was that the chub were being eaten by trout introduced for sport fishing in the mid-20th century. But trout and chub co-existed until the Glen Canyon dam was built, so something else is going on. Steve Gloss, of the United States Geological Survey (USGS), reckons that the chub's decline is the result of losing their most valuable natural defense, Colorado's rusty sediment. The chub was well adapted to the poor visibility created by the thick, red water which gave the river its name and depended on it to hide from predators. Without the cloudy water, the chub became vulnerable.

{E} And the chub are not alone. In the years since the Glen Canyon dam was built, several species have vanished altogether. These include the Colorado pike-minnow, the razorback sucker and the roundtail chub. Meanwhile, aliens including fathead minnows, channel catfish, and common carp, which would have been hard to survive in the savage waters of the undammed canyon, have moved in.

{F} So flooding is the obvious answer. Unfortunately, it is easier said than done. Floods were sent down the Grand Canyon in

1996 and 2004 and the results were mixed. In 1996 the flood was allowed to go on too long. To start with, all seemed well. The floodwaters built up sandbanks and infused the river with sediment. Eventually, however, the continued flow washed most of the sediment out of the canyon. This problem was avoided in 2004, but unfortunately, on that occasion, the volume of sand available behind the dam was too low to rebuild the sandbanks. This time, the USGS is convinced that things will be better. The amount of sediment available is three times greater than it was in 2004. So if a flood is going to do some good, this is the time to unleash one.

{G} Even so, it may turn out to be an empty gesture. At less than 1,200 cubic metres a second, this flood is smaller than even an average spring flood, let alone one of the mightier deluges of the past. Those glorious inundations moved massive quantities of sediment through the Grand Canyon, wiping the slate dirty, and making a muddy mess of silt and muck that would make modern river rafters cringe.

### ***Questions 1-7***

*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 is True
FALSE	if the statement is false

NOT GIVEN	If the information is not given in the passage
-----------	--

**Question 1:-** Damage caused by fire is worse than that caused by flood

**Question 2:-** The flood peaks at almost 1500 cubic meters every eight years.

**Question 3:-** Contribution of sediments delivered by tributaries has little impact.

**Question 4:-** Decreasing number of chubs is always caused by the introduction of trout since mid 20th century.

**Question 5:-** It seemed that the artificial flood in 1996 had achieved success partly at the very beginning.

**Question 6:-** In fact, the yield of artificial flood water is smaller than an average natural flood at present.

**Question 7:-** Mighty floods drove fast-moving flows with clean and high-quality water.

### Questions 8-13

*Complete the summary below.*

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

The eco-impact of the Canyon Dam Floods are people's nightmare. In the past, the canyon was ravaged by floods every year. The snow from far Wyoming would melt in the season of 8.....and cause a flood flow peak in the Colorado River. In the four decades after people built the

Glen Canyon Dam, it only could gather 9.. .....together from tiny, undammed tributaries. humpback chub population reduced, why?

Then, several species disappeared including Colorado pike-minnow, 10....., and the round-tail chub. Meanwhile, some moved in such as fathead minnows, channel catfish and 11..... The non-stopped flow led to the washing away of the sediment out of the canyon, which poses a great threat to the chubs because it has poor 12 ..... away from predators. In addition, the volume of 13.....available behind the dam was too low to rebuild the bars and flooding became more serious.

### Answers

1	NOT GIVEN	8	SPRING
2	FALSE	9	SEDIMENT
3	NOT GIVEN	10	RAZORBACK SUCKER
4	FALSE	11	COMMON CARP
5	TRUE	12	VISIBILITY
6	TRUE	13	SAND
7	NOT GIVEN		

### TEST 48:

## Food for thought 2

A. There are not enough classrooms at the Msekeni primary school, so half the lessons take place in the shade of yellow-blossomed acacia trees. Given this shortage, it might seem odd that one of the school's purpose-built classrooms has been emptied of pupils and turned into a storeroom for sacks of grain. But it makes sense. Food matters more than shelter.

B. Msekeni is in one of the poorer parts of Malawi, a landlocked southern African country of exceptional beauty and great poverty. No war lays waste Malawi, nor is the land unusually crowded or infertile, but Malawians still have trouble finding enough to eat. Half of the children under five are underfed to the point of stunting. Hunger blights most aspects of Malawian life, so the country is as good a place as any to investigate how nutrition affects development, and vice versa.

C. The headmaster at Msekeni, Bernard Kumanda, has strong views on the subject. He thinks food is a priceless teaching aid. Since 1999, his pupils have received free school lunches. Donors such as the World Food Programme (WFP) provide the food: those sacks of grain (mostly mixed maize and soyabean flour, enriched with vitamin A) in that converted classroom. Local volunteers do the cooking—turning the dry ingredients into a

bland but nutritious slop, and spooning it out on to plastic plates. The children line up in large crowds, cheerfully singing a song called “We are getting porridge”.

D. When the school’s feeding programme was introduced, enrolment at Msekeni doubled. Some of the new pupils had switched from nearby schools that did not give out free porridge, but most were children whose families had previously kept them at home to work. These families were so poor that the long-term benefits of education seemed unattractive when set against the short-term gain of sending children out to gather firewood or help in the fields. One plate of porridge a day completely altered the calculation. A child fed at school will not howl so plaintively for food at home. Girls, who are more likely than boys to be kept out of school, are given extra snacks to take home.

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E. When a school takes in a horde of extra students from the poorest homes, you would expect standards to drop. Anywhere in the world, poor kids tend to perform worse than their better-off classmates. When the influx of new pupils is not accompanied by any increase in the number of teachers, as was the case at Msekeni, you would expect standards to fall even further. But they have not. Pass rates at Msekeni improved dramatically, from 30% to 65%.

Although this was an exceptional example, the nationwide results of school feeding programmes were still pretty good. On average, after a Malawian school started handing out free food it attracted 38% more girls and 24% more boys. The pass rate for boys stayed about the same, while for girls it improved by 93%.

**F. Better nutrition makes for brighter children.** Most immediately, well-fed children find it easier to concentrate. It is hard to focus the mind on long division when your stomach is screaming for food. Mr Kumanda says that it used to be easy to spot the kids who were really undernourished. “They were the ones who stared into space and didn’t respond when you asked them questions,” he says.

More crucially, though, more and better food helps brains grow and develop. Like any other organ in the body, the brain needs nutrition and exercise. But if it is starved of the necessary calories, proteins and micronutrients. It is stunted, perhaps not as severely as a muscle would be, but stunted nonetheless. That is why feeding children at schools works so well. And the fact that the effect of feeding was more pronounced on girls than on boys gives a clue to who eats first in rural Malawian households. It isn’t the girls.

**G. On a global scale, the good news is that people are eating**

better than ever before. *Homo sapiens* has grown 50% bigger since the industrial revolution. Three centuries ago, chronic malnutrition was more or less universal. Now, it is extremely rare in rich countries. In developing countries, where most people live, plates and rice bowls are also fuller than ever before.

The proportion of children under five in the developing world who are malnourished to the point of stunting fell from 39% in 1990 to 30% in 2000, says the World Health Organisation (WHO). In other places, the battle against hunger is steadily being won. Better nutrition is making people cleverer and more energetic, which will help them grow more prosperous. And when they eventually join the ranks of the well off, they can start fretting about growing too fat.

## QUESTIONS

### Questions 1-7

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-xi, in boxes 1-7 on your answer sheet.

#### *List of Headings*

- i Why better food helps students' learning
- ii A song for getting porridge
- iii Surprising use of school premises
- iv Global perspective
- v Brains can be starved

- vi Surprising academics outcome
- vii Girls are specially treated in the program
- viii How food program is operated
- ix How food program affects school attendance
- x None of the usual reasons
- xi How to maintain academic standard

1 Paragraph A

2 Paragraph B

3 Paragraph C

4 Paragraph D

5 Paragraph E

6 Paragraph F

7 Paragraph G



### Questions 8-11

Complete the sentences below using **NO MORE THAN TWO WORDS AND/OR A NUMBER** from the passage?

Write your answers in boxes 8-11 on your answer sheet

**8** \_\_\_\_\_ are exclusively offered to girls in the feeding programme.

**9** Instead of going to school, many children in poverty are sent to collect \_\_\_\_\_ in the fields.

**10** The pass rate at Msekeni has risen to \_\_\_\_\_ with the help of the feeding programme.

**11** Since the industrial revolution, the size of the modern human has grown by \_\_\_\_\_

### Questions 12-13

Choose TWO letters, A-F.

Write your answers in boxes 12 and 13 on your answer sheet.

Which TWO of the following statements are true?

- A Some children are taught in the open air.
- B Malawi have trouble to feed its large population.
- C. No new staffs were recruited when attendance rose.
- D Girls enjoy a higher status than boys in the family
- E Boys and girls experience the same improvement in the pass rate.
- F WHO has cooperated with WFP to provide grain to the school at Msekeni.

### ANSWERS

1	iii	2	x	3	viii
4	ix	5	vi	6	i
7	iv	8	extra snacks	9	firewood
10	85%	11	50%	12	A
13	C				

## TEST 49:

### Mind readers

*It may one day be possible to eavesdrop on another person's inner voice.*

As you begin to read this article and your eyes follow the words across the page, you may be aware of a voice in your head silently muttering along. The very same thing happens when we write: a private, internal narrative shapes the words before we commit them to text.

What if it were possible to tap into this inner voice? Thinking of words does, after all, create characteristic electrical signals in our

brains, and decoding them could make it possible to piece together someone's thoughts. Such an ability would have phenomenal prospects, not least for people unable to communicate as a result of brain damage. But it would also carry profoundly worrisome implications for the future of privacy.

The first scribbled records of electrical activity in the human brain were made in 1924 by a German doctor called Hans Berger using his new invention – the electroencephalogram (EEG). This uses electrodes placed on the skull to read the output of the brain's billions of nerve cells or neurons. By the mid-1990s, the ability to translate the brain's activity into readable signals had advanced so far that people could move computer cursors using only the electrical fields created by their thoughts.

The electrical impulses such innovations tap into are produced in a part of the brain called the motor cortex, which is responsible for muscle movement. To move a cursor on a screen, you do not think 'move left' in natural language. Instead, you imagine a specific motion like hitting a ball with a tennis racket. Training the machine to realise which electrical signals correspond to your imagined movements, however, is time consuming and difficult. And while this method works well for directing objects on a screen, its drawbacks become apparent when you try using it to communicate. At best, you can use the cursor to select letters

displayed on an on-screen keyboard. Even a practised mind would be lucky to write 15 words per minute with that approach. Speaking, we can manage 150.

Matching the speed at which we can think and talk would lead to devices that could instantly translate the electrical signals of someone's inner voice into sound produced by a speech synthesiser. To do this, it is necessary to focus only on the signals coming from the brain areas that govern speech. However, real mind reading requires some way to intercept those signals before they hit the motor cortex.

The translation of thoughts to language in the brain is an incredibly complex and largely mysterious process, but this much is known: before they end up in the motor cortex, thoughts destined to become spoken words pass through two 'staging areas' associated with the perception and expression of speech.

The first is called Wernicke's area, which deals with semantics – in this case, ideas based in meaning, which can include images, smells or emotional memories. Damage to Wernicke's area can result in the loss of semantic associations: words can't make sense when they are decoupled from their meaning. Suffer a stroke in that region, for example, and you will have trouble understanding not just what others are telling you, but what you

yourself are thinking.

The second is called Broca's area, agreed to be the brain's speech-processing centre. Here, semantics are translated into phonetics and ultimately, word components. From here, the assembled sentences take a quick trip to the motor cortex, which activates the muscles that will turn the desired words into speech.

Injure Broca's area, and though you might know what you want to say, you just can't send those impulses.

When you listen to your inner voice, two things are happening. You 'hear' yourself producing language in Wernicke's area as you construct it in Broca's area. The key to mind reading seems to lie in these two areas.

(line 44) The work of Bradley Greger in 2010 broke new ground by marking the first-ever excursion beyond the motor cortex into the brain's language centres. His team used electrodes placed inside the skull to detect the electrical signatures of whole words, such as 'yes', 'no', 'hot', 'cold', 'thirsty', 'hungry', etc. Promising as it is. This approach requires a new signal to be learned for each new word. English contains a quarter of a million distinct words. And though this was the first instance of monitoring Wernicke's

area, it still relied largely on the facial motor cortex.

Greger decided there might be another way. The building blocks of language are called phonemes, and the English language has about 40 of them – the ‘kuh’ sound in ‘school’, for example, the ‘sh’ in ‘shy’. Every English word contains some subset of these components. Decode the brain signals that correspond to the phonemes, and you would have a system to unlock any word at the moment someone thinks it.

In 2011, Eric Leuthardt and his colleague Gerwin Schalk positioned electrodes over the language regions of four fully conscious people and were able to detect the phonemes ‘oo’, ‘ah’, ‘eh’ and ‘ee’. What they also discovered was that spoken phonemes activated both the language areas and the motor cortex, while imagined speech – that inner voice – boosted the activity of neurons in Wernike’s area. Leuthardt had effectively read his subjects’ minds. ‘I would call it brain reading,’ he says. To arrive at whole words, Leuthardt’s next step is to expand his library of sounds and to find out how the production of phonemes translates across different languages.

For now, the research is primarily aimed at improving the lives of people with locked-in syndrome, but the ability to explore the brain’s language centres could revolutionise other fields. The

consequences of these findings could ripple out to more general audiences who might like to use extreme hands-free mobile communication technologies that can be manipulated by inner voice alone. For linguists, it could provide previously unobtainable insight into the neural origins and structures of language. Knowing what someone is thinking without needing words at all would be functionally indistinguishable from telepathy.

### **Questions 27-32**

Do the following statements agree with the claims of the writer in the Reading Passage?

In boxes 27-32 on your answer sheet, 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.** Our inner voice can sometimes distract us when we are reading or writing.

**28.** The possibility of reading minds has both positive and negative implications.

**29.** Little progress was made in understanding electrical activity in the brain between 1924 and the mid-1990s.

**30.** Machines can be readily trained to interpret electrical signals from the brain that correspond to movements on a keyboard.

**31.** Much has been written about the potential use of speech synthesisers with paralysed patients.

**32.** It has been proven that the perception and expression of speech occur in different parts of the brain.

### **Questions 33-36**

Complete each sentence with the correct ending, A-G.

**33.** In Wernicke's area, our thoughts

**34.** It is only in Broca's area that ideas we wish to express

**35.** The muscles that articulate our sentences

**36.** The words and sentences that we speak

A. receive impulses from the motor cortex.

B. pass directly to the motor cortex.

C. are processed into language.

D. require a listener.

E. consist of decoded phonemes.

F. are largely non-verbal.

G. match the sounds that they make.

## Questions 37-40

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

Write your answers in boxes 37-40 on your answer sheet.

**37. What does the underlined phrase ‘broke new ground’ in line 44 mean?**

- A. built on the work of others
- B. produced unusual or unexpected results
- C. proved earlier theories on the subject to be false
- D. achieved something that had not been done before

**38. What was most significant about Leuthardt and Schalk’s work?**

- A. They succeeded in grouping certain phonemes into words.
- B. They linked the production of certain phonemes to recognisable brain activity.
- C. Their methods worked for speakers of languages other than English.
- D. Their subjects were awake during the course of their experiments.

**39. What does the writer conclude about mind reading?**

- A. It could become a form of entertainment.
- B. It may contribute to studies on language acquisition.
- C. Most people are keenly awaiting the possibility of doing it.
- D. Mobile technologies may become unreliable because of it.

**40. What is the main purpose of the writer of this passage?**

- A. to give an account of the developments in mind-reading research
- B. to show how scientists' attitudes towards mind reading have changed
- C. to explain why mind-reading research should be given more funding
- D. to fully explore the arguments for and against mind reading

Answer:

**27. NOT GIVEN**

**28. YES**

**29. NO**

**30. NO**

**31. NOT GIVEN**

**32. YES**

**33. F**

34. C

35. A

36. E

37. D

38. B

39. B

40. A

## TEST 50:

### Save Endangered Language

A. Ten years ago Michael Krauss sent a shudder through the discipline of linguistics with his prediction that half the 6,000 or so languages spoken in the world would cease to be uttered within a century. Unless scientists and community leaders directed a worldwide effort to stabilize the decline of local languages, he warned, nine tenths of the linguistic diversity of humankind would probably be doomed to extinction. Krauss's prediction was little more than an educated guess, but other respected linguists had been clanging out similar alarms.

Keneth L. Hale of the Massachusetts Institute of Technology noted in the same journal issue that eight languages on which he had done fieldwork had since passed into extinction. A 1990 survey in Australia found that 70 of the 90 surviving Aboriginal languages were no longer used regularly by all age groups. The

same was true for all but 20 of the 175 Native American languages spoken or remembered in the US., Krauss told a congressional panel in 1992.

B. Many experts in the field mourn the loss of rare languages, for several reasons. To start, there is scientific self interest; some of the most basic questions in linguistics have to do with the limits of human speech, which are far from fully explored. Many researchers would like to know which structural elements of grammar and vocabulary—if any are truly universal and probably therefore hard-wired into the human brain. Other scientists try to reconstruct ancient migration patterns by comparing borrowed words that appear in otherwise unrelated languages, in each of these cases, the wider the portfolio of languages you study, the more likely you are to get the right answers.

C. Despite the near constant buzz in linguistics about endangered languages over the past 10 years, the field has accomplished depressingly little. “You would think that there would be some organized response to this dire situation’ some attempt to determine which language can be saved and which should be documented before they disappear, says Sarah G. Thomason, a linguist at the University of Michigan at Ann Arbor. “But there isn’t any such effort organized in the profession.

It is only recently that it has become fashionable enough to work on endangered languages." Six years ago, recalls Douglas H. Whalen of Yale University, "when I asked linguists who was raising money to deal with these problems, I mostly got blank stares." So Whalen and a few other linguists founded the Endangered Languages Fund. In the five years to 2001 they were able to collect only \$80,000 for research grants. A similar foundation in England, directed by Nicholas Ostler, has raised just \$8,000 since 1995.

D. But there are encouraging signs that the field has turned a comer. The Volkswagen Foundation, a German charity, just issued its second round of grants totaling more than \$2 million. It has created a multimedia archive at the Max Planck Institute for Psycholinguistics in the Netherlands that can house recordings, grammars, dictionaries and other data on endangered languages. To fill the archive, the foundation has dispatched field linguists to document Aweti (100 or so speakers in Brazil), Ega (about 300 speakers in Ivory Coast), Waima'a (a few hundred speakers in East Timor), and a dozen or so other languages unlikely to survive the century.

The Ford Foundation has also edged into the arena. Its contributions helped to reinvigorate a master-apprentice program created in 1992 by Leanne Hinton of Berkeley and Native Americans worried about the imminent demise of about 50

indigenous languages in California. Fluent speakers receive \$3,000 to teach a younger relative (who is also paid) their native tongue through 360 hours of shared activities, spread over six months. So far about 5 teams have completed the program, Hinton says, transmitting at least some knowledge of 25 languages.

“It’s too early to call this language revitalization,” Hinton admits. “In California the death rate of elderly speakers will always be greater than the recruitment rate of young speakers. But at least we prolong the survival of the language.” That will give linguists more time to record these tongues before they vanish.

E. But the master-apprentice approach hasn’t caught on outside the U.S., and Hinton’s effort is a drop in the sea. At least 440 languages have been reduced to a mere handful of elders, according to the Ethnologue, a catalogue of languages produced by the Dallas-based group SIL International that comes closest to global coverage. For the vast majority of these languages, there is little or no record of their grammar, vocabulary, pronunciation or use in daily life.

Even if a language has been fully documented, all that remains once it vanishes from active use is a fossil skeleton, a scattering of features that the scientist was lucky and astute enough to capture. Linguists may be able to sketch an outline of the

forgotten language and fix its place on the evolutionary tree, but little more. “How did people start conversations and talk to babies? How did husbands and wives converse?” Hinton asks. “Those are the first things you want to learn when you want to revitalize the language.”



Save Endangered Language

F. But there is as yet no discipline of “conservation linguistics,” as there is for biology. Almost every strategy tried so far has succeeded in some places but failed in others, and there seems to be no way to predict with certainty what will work where. Twenty years ago in New Zealand, Maori speakers set up “language nests,” in which preschoolers were immersed in the native language. Additional Maori-only classes were added as the children progressed through elementary and secondary school. A similar approach was tried in Hawaii, with some success—the number of

native speakers has stabilized at 1,000 or so, reports Joseph E. Grimes of SIL International, who is working on Oahu. Students can now get instruction in Hawaiian all the way through university.

**G** One factor that always seems to occur in the demise of a language is that the speakers begin to have collective doubts about the usefulness of language loyalty. Once they start regarding their own language as inferior to the majority language, people stop using it for all situations. Kids pick up on the attitude and prefer the dominant language. In many cases, people don't notice until they suddenly realize that their kids never speak the language, even at home. This is how Cornish and some dialects of Scottish Gaelic is still only rarely used for daily home life in Ireland, 80 years after the republic was founded with Irish as its first official language.

**H.** Linguists agree that ultimately, the answer to the problem of language extinction is multilingualism. Even uneducated people can learn several languages, as long as they start as children. Indeed, most people in the world speak more than one tongue, and in places such as Cameroon (279 languages), Papua New Guinea (823) and India (387) it is common to speak three or four distinct languages and a dialect or two as well.

Most Americans and Canadians, to the west of Quebec, have a gut reaction that anyone speaking another language in front of them is committing an immoral act. You get the same reaction in Australia and Russia. It is no coincidence that these are the areas where languages are disappearing the fastest. The first step in saving dying languages is to persuade the world's majorities to allow the minorities among them to speak with their own voices.

## QUESTIONS

### Questions 27-33

The reading passage has eight paragraphs, A-H

Choose the correct heading for paragraphs A-H from the list below.

Write the correct number, i-xi, in boxes 27-33 on your answer sheet.

#### *List of Headings*

- i data consistency needed for language
- ii consensus on an initiative recommendation for saving dying out languages
- iii positive gains for protection
- iv minimum requirement for saving a language
- v Potential threat to minority language
- vi a period when there was absence of real effort made.
- vii native language programs launched
- viii Lack in confidence in young speakers as a negative factor
- ix Practise in several developing countries

- x Value of minority language to linguists.
- xi government participation in language field

**27** Paragraph A

**28** Paragraph B

*Example: Paragraph C vi*

**29** Paragraph D

**30** Paragraph E

**31** Paragraph F

**32** Paragraph G

**33** Paragraph H

### **Questions 34-38**

Use the information in the passage to match the people (listed A-F) with opinions or deeds below.

Write the appropriate letters A-F in boxes **34-38** on your answer sheet.

A Nicholas Ostler

B Michael Krauss

C Joseph E. Grimes

D Sarah G. Thomason

E Kenneth L. Hale

F Douglas H. Whalen

**34** Reported language conservation practice in Hawaii

**35** Predicted that many languages would disappear soon

**36** Experienced process that languages die out personally

**37** Raised language fund in England

**38** Not enough effort on saving until recent work

### Questions 39-40

Choose the correct letter, A, B, c or D.

Write your answers in boxes **39-40** on your answer sheet.

**39** What is real result of master-apprentice program sponsored by The Ford Foundation?

A Teach children how to speak

B Revive some endangered languages in California

C postpone the dying date for some endangered languages

D Increase communication between students

**40** What should majority language speakers do according to the last paragraph?

A They should teach their children endangered language in free lessons

B They should learn at least four languages

C They should show their loyalty to a dying language

D They should be more tolerant to minority language speaker

### ANSWERS

27	v	28	x	29	iii
30	i	31	vii	32	viii
33	ii	34	C	35	B
36	E	37	A	38	D
39	C	40	D		

APRIL EXAM:

TEST 51:

### The natural Yawning

A. While fatigue, drowsiness or boredom easily bring on yawns, scientists are discovering there is more to yawning than most people think. Not much is known about why we yawn or if it serves any useful function. People have already learned that yawning can be infectious. “Contagious yawning” is the increase in likelihood that you will yawn after watching or hearing someone else yawn, but not much is known about the under-lying causes, and very little research has been done on the subject. However, scientists at the University of Albany, as well as the University of Leeds and the University of London have done some exploration.

B. It is commonly believed that people yawn as a result of being sleepy or tired because they need oxygen. However, the latest research shows that a yawn can help cool the brain and help it work more effectively, which is quite different from the popular belief that yawning promotes sleep and is a sign of tiredness. Dr. Andrew Gallup and his colleagues at the University of Albany in New York State said their experiments on 44 students showed that raising or lowering oxygen and carbon dioxide levels in the blood did not produce that reaction.

In the study participants were shown videos of people laughing and yawning, and researchers counted how many times the volunteers responded to the “contagious yawns”. The researchers found that those who breathed through the nose rather than the mouth were less likely to yawn when watching a video of other people yawning. The same effect was found among those who held a cool pack to their forehead, whereas those who held a warm pack yawned while watching the video. Since yawning occurs when brain temperature rises, sending cool blood to the brain serves to maintain the best levels of mental efficiency.

C. Yawning is universal to humans and many animals. Cats, dogs and fish yawn just like humans do, but they yawn spontaneously. Only humans and chimpanzees, our closest relatives in the animal kingdom, have shown definite contagious yawning. Though much of yawning is due to suggestibility, sometimes people do not need to actually see a person yawn to involuntarily yawn themselves: hearing someone yawning or even reading about yawning can cause the same reaction.

D. However, contagious yawning goes beyond mere suggestibility. Recent studies show that contagious yawning is also related to our predisposition toward empathy—the ability to understand and connect with others’ emotional states. So empathy is important, sure, but how could it possibly be related

to contagious yawning? Leave it up to psychologists at Leeds University in England to answer that. In their study, researchers selected 40 psychology students and 40 engineering students. Generally, 57 psychology students are more likely to feel empathy for others, while engineering students are thought to be concerned with objects and science. Each student was made to wait individually in a waiting room, along with an undercover assistant who yawned 10 times in as many minutes. The students were then administered an emotional quotient test: students were shown 40 images of eyes and asked what emotion each one displayed. The results of the test support the idea that contagious yawning is linked to empathy.

The psychology students—whose future profession requires them to focus on others—yawned contagiously an average of 5.5 times in the waiting room and scored 28 out of 40 on the emotional test. The engineering students—who tend to focus on things like numbers and systems—yawned an average of 1.5 times and scored 25.5 out of 40 on the subsequent test. The difference doesn't sound like much, but researchers consider it significant. Strangely enough, women, who are generally considered more emotionally attuned, didn't score any higher than men.

E. Another study, led by Atsushi Senju, a cognitive researcher at the University of London, also sought to answer that question.

People with autism disorder are considered to be developmentally impaired emotionally. Autistics have trouble connecting with others and find it difficult to feel empathy. Since autistics have difficulty feeling empathy, then they shouldn't be susceptible to contagious yawning. To find out, Senju and his colleagues placed 49 kids aged 7 to 15 in a room with a television.

24 of the test subjects had been diagnosed with autism spectrum disorder, the other 25 were non-autistic kids. The test subjects were shown short clips of people yawning as well as clips of people opening their mouths but not yawning. While the kids with autism had the same lack of reaction to both kinds of clips, the non autistic kids yawned more after the clips of people yawning.

F. There also have been studies that suggest yawning, especially psychological "contagious" yawning, may have developed as a way of keeping a group of animals alert and bonding members of a group into a more unit one. If an animal is drowsy or bored, it may not be as alert as it should to be prepared to spring into action and its yawning is practically saying, "Hey, I need some rest, you stay awake".

Therefore, a contagious yawn could be an instinctual reaction to a signal from one member of the herd reminding the others to stay alert when danger comes. So the theory suggests evidence that

yawning comes from the evolution of early humans to be ready to physically exert themselves at any given moment.

## QUESTIONS

### Question 1 – 5

Read paragraphs A-F. Which paragraph contains the following information?

*NB You may use any letter more than once.*

- 1 Humans' imaginations can cause yawning.
- 2 Research shows that yawning is closely related to occupations.
- 3 An overview of the latest research in yawning.
- 4 Yawning is used to regulate brain temperature.
- 5 Scientists discovered some evidence disproving the early understanding of yawning.

### Questions 6 – 9

Match each of the following research results with the university which it comes from

*NB You may use any letter more than once.*

- A. University of Albany
- B. University of Leeds
- C. University of London

6 There is no gender difference in the cause of yawning.

7 People with certain disorders are less likely to be affected by other people yawning.

8 Yawning is associated with the way people breathe.

**9** People who are trained to feel empathy for others are more likely to yawn than those who are untrained.

### Questions 10 – 13

Complete the summary below.

Choose ONE WORD from the passage for each answer.

Write your answers in boxes 10-13 on your answer sheet.

Another theory shows that yawning is used for 10.....individuals into a tighter social unit. Alternatively, yawning can help increase alertness of group members in case 11 ..... is close. For example, yawning signals that a member of the group needs some 12 .....and requires the others to stay aware of the surrounding situation. This theory proves that yawning is only a spontaneous behaviour resulting from some part of a simple 13.....system in early humans.

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**ANSWERS**

- 1 C
- 2 D
- 3 A
- 4 B
- 5 B
- 6 B
- 7 C
- 8 A
- 9 B
- 10 bonding
- 11 danger
- 12 rest
- 13 evolution



WINNERS

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TEST 52:

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## WILLPOWER

### A

Although willpower does not shape our decisions, it determines whether and how long we can follow through on them. It almost single-handedly determines life outcomes. Interestingly, research suggests the general population is indeed aware of how essential willpower is to their wellbeing; survey participants routinely identify a 'lack of willpower' as the major impediment to making beneficial life changes. There are, however, misunderstandings surrounding the nature of willpower and how we can acquire more of it. There is a widespread misperception, for example, that increased leisure time would lead to subsequent increases in willpower.

### B

Although the concept of willpower is often explained through single-word terms, such as 'resolve' or 'drive', it refers in fact to a variety of behaviours and situations. There is a common perception that willpower entails resisting some kind of a 'treat', such as a sugary drink or a lazy morning in bed, in favour of decisions that we know are better for us, such as drinking water or going to the gym. Of course this is a familiar phenomenon for all. Yet willpower also involves elements such as overriding negative thought processes, biting your tongue in social situations, or persevering through a difficult activity. At the heart of any exercise of willpower, however, is the notion of 'delayed gratification', which involves resisting immediate satisfaction for a course that will yield greater or more permanent satisfaction in the long run.

---

**C**

Scientists are making general investigations into why some individuals are better able than others to delay gratification and thus employ their willpower, but the genetic or environmental origins of this ability remain a mystery for now. Some groups who are particularly vulnerable to reduced willpower capacity, such as those with addictive personalities, may claim a biological origin for their problems. What is clear is that levels of willpower typically remain consistent over time (studies tracking individuals from early childhood to their adult years demonstrate a remarkable consistency in willpower abilities). In the short term, however, our ability to draw on willpower can fluctuate dramatically due to factors such as fatigue, diet and stress. Indeed, research by Matthew Gailliot suggests that willpower, even in the absence of physical activity, both requires and drains blood glucose levels, suggesting that willpower operates more or less like a 'muscle', and, like a muscle, requires fuel for optimum functioning.



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**D**

These observations lead to an important question: if the strength of our willpower at the age of thirty-five is somehow pegged to our ability at the age of four, are all efforts to improve our willpower certain to prove futile? According to newer research, this is not necessarily the case. Gregory M. Walton, for example, found that a single verbal cue – telling research participants how strenuous mental tasks could ‘energise’ them for further challenging activities – made a profound difference in terms of how much willpower participants could draw upon to complete the activity. Just as our willpower is easily drained by negative influences, it appears that willpower can also be boosted by other prompts, such as encouragement or optimistic self-talk.

**E**

Strengthening willpower thus relies on a two-pronged approach: reducing negative influences and improving positive ones. One of the most popular and effective methods simply involves avoiding willpower depletion triggers, and is based on the old adage, ‘out of sight, out of mind’. In one study, workers who kept a bowl of enticing candy on their desks were far more likely to indulge than those who placed it in a desk drawer. It also appears that finding sources of motivation from within us may be important. In another study, Mark Muraven found that those who felt compelled by an external authority to exert self-control experienced far greater rates of willpower depletion than those who identified their own reasons for taking a

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particular course of action. This idea that our mental convictions can influence willpower was borne out by Veronika Job. Her research indicates that those who think that willpower is a finite resource exhaust their supplies of this commodity long before those who do not hold this opinion.

## F

Willpower is clearly fundamental to our ability to follow through on our decisions but, as psychologist Roy Baumeister has discovered, a lack of willpower may not be the sole impediment every time our good intentions fail to manifest themselves. A critical precursor, he suggests, is motivation – if we are only mildly invested in the change we are trying to make, our efforts are bound to fall short. This may be why so many of us abandon our New Year's Resolutions – if these were actions we really wanted to take, rather than things we felt we ought to be doing, we would probably be doing them already. In addition, Muraven emphasises the value of monitoring progress towards a desired result, such as by using a fitness journal, or keeping a record of savings toward a new purchase. The importance of motivation and monitoring cannot be overstated. Indeed, it appears that, even when our willpower reserves are entirely depleted, motivation alone may be sufficient to keep us on the course we originally chose.

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**Questions 27–33**

**Do the following statements agree with the information given in Reading Passage 3?**

In boxes 27–32 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

- 27** Willpower is the most significant factor in determining success in life.
- 28** People with more free time typically have better willpower.
- 29** Willpower mostly applies to matters of diet and exercise.
- 30** The strongest indicator of willpower is the ability to choose long-term rather than short-term rewards.
- 31** Researchers have studied the genetic basis of willpower.
- 32** Levels of willpower usually stay the same throughout our lives.
- 33** Regular physical exercise improves our willpower ability.

**Questions 34 –39**

**Look at the following statements (Questions 37–40) and the list of researchers below.**

Match each statement with the correct person, A–D.

Write the correct letter, A–D, in boxes 37–40 on your answer sheet.

**NB** You may use some letters more than once.

**This researcher ...**

- 34** identified a key factor that is necessary for willpower to function.
- 35** suggested that willpower is affected by our beliefs.
- 36** examined how our body responds to the use of willpower.
- 37** discovered how important it is to make and track goals.
- 38** found that taking actions to please others decreases our willpower.
- 39** found that willpower can increase through simple positive thoughts.

**List of People**

- A** Matthew Gailliot
- B** Gregory M. Walton
- C** Mark Muraven
- D** Veronika Job
- E** Roy Baumeister

**Question 40**

**Which of the following is NOT mentioned as a factor in willpower?**

**Willpower is affected by:**

- A** physical factors such as tiredness
- B** our fundamental ability to delay pleasure
- C** the levels of certain chemicals in our brains
- D** environmental cues such as the availability of a trigger



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**27. TRUE**

**28. FALSE**

**29. FALSE**

**30. TRUE**

**31. NOT GIVEN**

**32. TRUE**

**33. NOT GIVEN**

**34. E**

**35. D**

**36. A**

**37. C**

**38. C**

**39. B**

**40. C**



VINNERS

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**TEST 53:****Children's Literature**

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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.

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.

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.

---

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.

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.

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**

Complete the table below.

Choose **NO MORE THAN TWO WORDS** from Reading Passage 268 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 19 <sup>th</sup> 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

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

**19.** Thomas Boreham

**20.** Mrs. Sarah trimmer

**21.** Grimm Brothers

### **Questions 22-26**

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.

**Answer:**

14. rhymes, stories / stories, rhymes

15. America

16. folklore

17. fairy-tales/fairy-stories

18. adventures

19. C

20. A

21. E

22. FALSE

23. TRUE

24. NOT GIVEN

25. TRUE

26. TRUE

TEST 54: *Crack IELTS the easy way*

Can Scientists tell us:

What happiness is?

A

Economists accept that if people describe themselves as happy, then they are happy. However, psychologists differentiate between levels of happiness. The most immediate type involves a feeling; pleasure or joy. But sometimes happiness is a judgment



that life is satisfying, and does not imply an emotional state. Esteemed psychologist Martin Seligman has spearheaded an effort to study the science of happiness. The bad news is that we're not wired to be happy. The good news is that we can do something about it. Since its origins in a Leipzig laboratory 130 years ago, psychology has had little to say about goodness and contentment. Mostly psychologists have concerned themselves with weakness and misery. There are libraries full of theories about why we get sad, worried, and angry. It hasn't been respectable science to study what happens when lives go well. Positive experiences, such as joy, kindness, altruism and heroism, have mainly been ignored. For every 100 psychology papers dealing with anxiety or depression, only one concerns a positive trait.

## B

A few pioneers in experimental psychology bucked the trend. Professor Alice Isen of Cornell University and colleagues have demonstrated how positive emotions make people think faster and more creatively. Showing how easy it is to give people an intellectual boost, Isen divided doctors making a tricky diagnosis into three groups: one received candy, one read humanistic statements about medicine, one was a control group. The doctors who had candy displayed the most creative thinking and worked more efficiently. Inspired by Isen and others, Seligman got stuck in. He raised millions of dollars of research money and funded 50

research groups involving 150 scientists across the world. Four positive psychology centres opened, decorated in cheerful colours and furnished with sofas and baby-sitters. There were get-togethers on Mexican beaches where psychologists would snorkel and eat fajitas, then form “pods” to discuss subjects such as wonder and awe. A thousand therapists were coached in the new science.

## C

But critics are demanding answers to big questions. What is the point of defining levels of haziness and classifying the virtues? Aren't these concepts vague and impossible to pin down? Can you justify spending funds to research positive states when there are problems such as famine, flood and epidemic depression to be solved? Seligman knows his work can be belittled alongside trite notions such as “the power of positive thinking”. His plan to stop the new science floating “on the waves of self- improvement fashion” is to make sure it is anchored to positive philosophy above, and to positive biology below.

## D

And this takes us back to our evolutionary past Homo sapiens evolved during the Pleistocene era (1.8 m to 10,000 years ago), a time of hardship and turmoil. It was the Ice Age, and our ancestors endured long freezes as glaciers formed, then ferocious floods as the ice masses melted. We shared the planet with terrifying creatures such as mammoths, elephant-sized ground

sloths and sabre-toothed cats. But by the end of the Pleistocene, all these animals were extinct. Humans, on the other hand, had evolved large brains and used their intelligence to make fire and sophisticated tools, to develop talk and social rituals. Survival in a time of adversity forged our brains into a persistent mould.

Professor Seligman says: “Because our brain evolved during a time of ice, flood and famine, we have a catastrophic brain. The way the brain works is looking for what’s wrong. The problem is, that worked in the Pleistocene era. It favoured you, but it doesn’t work in the modern world”.

## E

Although most people rate themselves as happy, there is a wealth of evidence to show that negative thinking is deeply ingrained in the human psyche. Experiments show that we remember failures more vividly than success. We dwell on what went badly, not what went well. Of the six universal emotions, four anger, fear, disgust and sadness are negative and only one, joy, is positive. (The sixth, surprise, is neutral). According to the psychologist Daniel Nettle, author of *Happiness*, and one of the Royal Institution lectures, the negative emotion each tells us “something bad has happened” and suggest a different course of action.

## F

What is it about the structure of the brain that underlies our bias towards negative thinking? And is there a biology of joy? At Iowa

University, neuroscientist studied what happens when people are shown pleasant and unpleasant pictures. When subjects see landscapes or dolphins playing, part of the frontal lobe of the brain becomes active. But when they are shown unpleasant images a bird covered in oil, or a dead soldier with part of his face missing the response comes from more primitive parts of the brain. The ability to feel negative emotions derives from an ancient danger-recognition system formed early in the brain's evolution. The pre-frontal cortex, which registers happiness, is the part used for higher thinking, an area that evolved later in human history.

## G

Our difficulty, according to Daniel Nettle, is that the brain systems for liking and wanting are separate. Wanting involves two ancient regions the amygdala and the nucleus accumbens that communicate using the chemical dopamine to form the brain's reward system. They are involved in anticipating the pleasure of eating and in addiction to drugs. A rat will press a bar repeatedly , ignoring sexually available partners, to receive electrical stimulation of the "wanting" parts of the brain. But having received brain stimulation, the rat eats more but shows no sign of enjoying the food it craved. In humans, a drug like nicotine produces much craving but little pleasure.

## H

In essence, what the biology lesson tells us is that negative emotions are fundamental to the human condition and it's no wonder they are difficult to eradicate. At the same time, by a trick of nature, our brains are designed to crave but never really achieve lasting happiness.

### Questions 14-20

The reading Passage has seven paragraphs A-H.

Which paragraph contains the following information?

*Write the correct letter A-H, in boxes 14-20 on your answer sheet.*

- 14 An experiment involving dividing several groups one of which received positive icon
- 15 Review of a poorly researched psychology area
- 16 Contrast being made about the brains' action as response to positive or negative stimulus
- 17 The skeptical attitude toward the research seemed to be a waste of fund
- 18 a substance that produces much wanting instead of much liking
- 19 a conclusion that lasting happiness is hardly obtained because of the nature of brains
- 20 One description that listed the human emotional categories.

## Questions 21-25

Complete the following summary of the paragraphs of Reading Passage

Using **NO MORE THAN FOUR WORDS** from the Reading Passage for each answer.

*Write your answers in boxes 21-25 on your answer sheet.*

A few pioneers in experimental psychology study what happens when lives go well. Professor Alice divided doctors, making a tricky experiment, into three groups: besides the one control group, the other two either are asked to read humanistic statements about drugs or received 21..... The latter displayed the most creative thinking and worked more efficiently. Since critics are questioning the significance of the 22..... for both levels of happiness and classification for the virtues. Professor Seligman countered in an evolutional theory: survival in a time of adversity forged our brains into the way of thinking for what's wrong because we have a 23.....

There is bountiful of evidence to show that negative thinking is deeply built in the human psyche. Later, at Iowa University, neuroscientists studied the active parts in brains to contrast when people are shown pleasant and unpleasant pictures. When positive images like 24..... are shown, part of the frontal lobe of the brain becomes active. But when they are

shown unpleasant image, the response comes from 25..... of the brain.

### Question 26

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

*Write your answers in boxes 26 on your answer sheet.*

According to Daniel Nettle in the last two paragraphs, what is true as the scientists can tell us about happiness

- A Brain systems always mix liking and wanting together.
- B Negative emotions can be easily rid of if we think positively.
- C Happiness is like nicotine we are craving for but get little pleasure.
- D The inner mechanism of human brains does not assist us to achieve durable happiness

ANSWERS:

IELTS WINNERS

- 14. B
- 15. A
- 16. F
- 17. C
- 18. G
- 19. H
- 20. E
- 21. Candy
- 22. definition

- 23. a catastrophic brain
- 24. landscapes or dolphins playing
- 25. (more) primitive parts
- 26. D

## TEST 55:

Thomas Young

The Last *True Know-It-AU*

### A

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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 hieroglyphic. 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.

## 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

Do the following statements agree with the information given in Reading Passage 1?

*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 to 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

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?

### ANSWERS:

1. TRUE
2. FALSE
3. FALSE

4. NOT GIVEN
5. TRUE
6. TRUE
7. NOT GIVEN
8. 46
9. humaneye/ human eye accommodation
10. Indo-European
11. Richard Brocklesby
12. Royal Institution
13. gas lighting



#### TEST 56:

#### The Deep Sea

{A}. At a time when most think of outer space as the final frontier, we must remember that a great deal of unfinished business remains here on earth. Robots crawl on the surface of Mars, and spacecraft exit our solar system, but most of our planet has still never been seen by human eyes. It seems ironic that we know more about impact craters on the far side of the moon than about the longest and largest mountain range on earth. It is incredible that human beings crossed a quarter of a million miles of space to visit our nearest celestial neighbour before penetrating just two miles deep into the earth's own waters to explore the Mid ocean Ridge. And it would be hard to imagine a more significant part of our planet to investigate – a chain of volcanic

mountains 42,000 miles long where most of the earth's solid surface was born, and where vast volcanoes continue to create new submarine landscapes.

{B}. The figure we so often see quoted 71% of the earth's surface – understates the oceans' importance. If you consider three-dimensional volumes instead, the land dwellers' share of the planet shrinks even more toward insignificance: less than 1% of the total. Most of dying oceans' enormous volume, lies deep below the familiar surface. The upper sunlit layer, by one estimate, contains only 2 or 3% of the total space available to life. The other 97% of the earth's biosphere lies deep beneath the water's surface, where sunlight never penetrates. Until recently, it was impossible to study the deep ocean directly. By the sixteenth century, diving bells allowed people to stay underwater for a short time: they could swim to the hell to breathe air trapped underneath it rather than return to the surface. Later, other devices, including pressurized or armoured suits, heavy" metal helmets, and compressed air supplied through hoses from dying surfaces, allowed at least one diver to reach 500 feet or so. It was 1930 when a biologist named William Beebe and his engineering colleague Otis Barton sealed themselves into a new kind of diving craft, an invention that finally allowed humans to penetrate beyond the shallow sunlit layer of the sea and the history of deep-sea exploration began. Science then was largely incidental – something that happened

along the way. In terms of technical ingenuity and human bravery, this part of the story is every bit as amazing as the history of early aviation. Yet many of these individuals, and the deep-diving vehicles that they built and tested, are not well known.

{C}. It was not until the 1970s that deep-diving manned submersibles were able to reach the mid-ocean Ridge and begin making major contributions to a wide range of scientific questions. A burst of discoveries followed in short order. Several of these profoundly changed the whole field of science and their implications are still not fully understood. For example, biologists may now be seeing – in the strange communities of microbes and animals that live around deep volcanic vents – clues to the origin of life on earth. No one even knew that these communities existed before explorers began diving to the bottom in a submersible. Entering the deep, black abyss presents unique challenges for which humans must carefully prepare if they wish to survive. It is an unforgiving environment, both harsh and strangely beautiful, that few who have not experienced it firsthand can fully appreciate. Even the most powerful searchlights penetrate the only lens of feet. Suspended particles scatter tile light and water itself is less transparent than air; it absorbs and scatters light. The ocean also swallows other types of electromagnetic radiation, including radio signals. That is why many deep-sea vehicles dangle from tethers. Inside those tethers,

copper wires or fibre optic strands transmit signals that would dissipate and die if broadcast into open water.

{D}. Another challenge is that the temperature near the bottom in very deep water typically hovers just four degrees above freezing, and submersibles rarely have much insulation. Since water absorbs heat more quickly than air, the cold down below seems to penetrate a diving capsule far more quickly than it would penetrate, say, a control van up above, on the deck of the mother ship. And finally, the abyss clamps down with crushing pressure on anything that enters it. „This force is like air pressure on land, except that water is much heavier than air. At sea level on land, we don't even notice 1 atmosphere of pressure, about 15 pounds per square inch, the weight of the earth's blanket of air. In the deepest part of the ocean, nearly seven miles down, it's about 1,200 atmospheres, 18,000 pounds per square inch. A square-inch column of lead would crush down on your body with equal force if it were 3,600 feet tall.

{E}. Fish that live in the deep don't feel the pressure because they are filled with water from their environment. It has already been compressed by abyssal pressure as much as water can be (which is not much). A diving craft, however, is a hollow chamber, rudely displacing the water around it. That chamber must withstand the full brunt of deep-sea pressure – thousands of pounds per square inch. If seawater with that much pressure behind it ever finds a way to break inside, it explodes through

the hole with laserlike intensity. It was into such a terrifying environment that the first twentieth-century explorers ventured.

**Questions 27-30:**

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

**Question 27.** In the first paragraph, the writer finds it surprising that .....

- (A). we send robots to Mars rather than to the sea bed.
- (B). We choose to explore the least accessible side of the moon.
- (C). people reached the moon before they explored the deepest parts of the earth's oceans.
- (D). spaceships are sent beyond our solar system instead of exploring it.

**Question 28.** The writer argues that saying 71 % of the earth's surface is the ocean is not accurate because of it .....

- (A). ignores the depth of the world's oceans.
- (B). is based on an estimated volume.
- (C). overlooks the significance of landscape features.
- (D). refers to the proportion of water in which life is possible.

**Question 29.** How did the diving bell help divers?

- (A). It allowed each diver to carry a supply of air underwater.
- (B). It enabled piped air to reach deep below the surface.
- (C). It offered access to a reservoir of air below the surface.
- (D). It meant that they could dive as deep as 500 feet.

**Question 30.** What point does the writer make about scientific discoveries between 1930 and 1970?

- (A). They were rarely the primary purpose of deep-sea exploration.
- (B). The people who conducted experiments were not professional scientists.
- (C). Many people refused to believe the discoveries that were made.
- (D). They involved the use of technologies from other disciplines.

**IELTSFever Academic IELTS Reading Test 143 Questions 31-36**

*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 writer
NO	if the statement does not agree with the writer
NOT GIVEN	if there is no information about this in the passage

(31). The Mid-ocean Ridge is largely the same as when the continents emerged.

(32). We can make an approximate calculation of the percentage of the ocean in which sunlight penetrates.

(33). Many unexpected scientific phenomena came to light when exploration of the Mid-ocean Ridge began.

(34). The number of people exploring the abyss has risen sharply in the 21st century.

(35). One danger of the darkness is that deep-sea vehicles become entangled in vegetation.

(36). The construction of submersibles offers little protection from the cold at great depths.

**Questions 37-40:**

*Complete the summary using the list of words A-I below.*

**Deep diving craft**

A diving craft has to be 37..... enough to cope with the enormous pressure of the abyss, which is capable of crushing almost anything. Unlike creatures that live there, which are not 38..... because they contain compressed water, a submersible is filled with 39..... If it has a weak spot in its construction, there will be a 40..... explosion of water into the craft.

(A). ocean	(D). hollow	(G). energetic
(B). air	(E). sturdy	(H). violent
(C). deep	(F). atmosphere	(I). heavy

**answers**

1	TRUE	21	YES
---	------	----	-----

2	TRUE	22	D
3	FALSE	23	H
4	NOT GIVEN	24	C
5	FALSE	25	E
6	NOT GIVEN	26	B
7	SAIL	27	C
8	NARROW	28	A
9	LOCOMOTION	29	C
10	MOISTURE	30	A
11	STRESS	31	NO
12	GROUD	32	YES
13	FOSSIL TRACKS	33	YES
14	B	34	NOT GIVEN
15	A	35	NOT GIVEN
16	D	36	YES
17	D	37	E
18	NOT GIVEN	38	D

19	YES	39	B
20	NO	40	H

## TEST 57:

**Crop-growing skyscrapers**

By the year 2050, nearly 80% of the Earth's population will live in urban centres. Applying the most conservative estimates to current demographic trends, the human population will increase by about three billion people by then. An estimated 109 hectares of new land (about 20% larger than Brazil) will be needed to grow enough food to feed them, if traditional farming methods continue as they are practised today.

At present, throughout the world, over 80% of the land that is suitable for raising crops is in use. Historically, some 15% of that

has been laid waste by poor management practices. What can be done to ensure enough food for the world's population to live on?

The concept of indoor farming is not new, since hothouse production of tomatoes and other produce has been in vogue for some time. What is new is the urgent need to scale up this technology to accommodate another three billion people. Many believe an entirely new approach to indoor farming is required, employing cutting-edge technologies. One such proposal is for the 'Vertical Farm'. The concept is of multi-storey buildings in which food crops are grown in environmentally controlled conditions. Situated in the heart of urban centres, they would drastically reduce the amount of transportation required to bring food to consumers. Vertical farms would need to be efficient, cheap to construct and safe to operate. If successfully implemented, proponents claim, vertical farms offer the promise of urban renewal, sustainable production of a safe and varied food supply (through year-round production of all crops), and the eventual repair of ecosystems that have been sacrificed for horizontal farming.

It took humans 10,000 years to learn how to grow most of the crops we now take for granted. Along the way, we despoiled most of the land we worked, often turning verdant, natural ecozones into semi-arid deserts. Within that same time frame, we evolved into an urban species, in which 60% of the human

population now lives vertically in cities. This means that, for the majority, we humans have shelter from the elements, yet we subject our food-bearing plants to the rigours of the great outdoors and can do no more than hope for a good weather year. However, more often than not now, due to a rapidly changing climate, that is not what happens. Massive floods, long droughts, hurricanes and severe monsoons take their toll each year, destroying millions of tons of valuable crops.

The supporters of vertical farming claim many potential advantages for the system. For instance, crops would be produced all year round, as they would be kept in artificially controlled, optimum growing conditions. There would be no weather-related crop failures due to droughts, floods or pests. All the food could be grown organically, eliminating the need for herbicides, pesticides and fertilisers. The system would greatly reduce the incidence of many infectious diseases that are acquired at the agricultural interface. Although the system would consume energy, it would return energy to the grid via methane generation from composting nonedible parts of plants. It would also dramatically reduce fossil fuel use, by cutting out the need for tractors, ploughs and shipping.

A major drawback of vertical farming, however, is that the plants would require artificial light. Without it, those plants nearest the windows would be exposed to more sunlight and grow more quickly, reducing the efficiency of the system. Single-storey

greenhouses have the benefit of natural overhead light; even so, many still need artificial lighting.

A multi-storey facility with no natural overhead light would require far more. Generating enough light could be prohibitively expensive, unless cheap, renewable energy is available, and this appears to be rather a future aspiration than a likelihood for the near future.

One variation on vertical farming that has been developed is to grow plants in stacked trays that move on rails. Moving the trays allows the plants to get enough sunlight. This system is already in operation, and works well within a single-storey greenhouse with light reaching it from above: it is not certain, however, that it can be made to work without that overhead natural light.

Vertical farming is an attempt to address the undoubtedly problems that we face in producing enough food for a growing population. At the moment, though, more needs to be done to reduce the detrimental impact it would have on the environment, particularly as regards the use of energy. While it is possible that much of our food will be grown in skyscrapers in future, most experts currently believe it is far more likely that we will simply use the space available on urban rooftops.

## Questions 1-7

*Complete the sentences below.*

Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

Write your answers in boxes 1-7 on your answer sheet.

### Indoor farming

- 1 Some food plants, including  are already grown indoors.
- 2 Vertical farms would be located in  meaning that there would be less need to take them long distances to customers.
- 3 Vertical farms could use methane from plants and animals to produce
- 4 The consumption of  would be cut because agricultural vehicles would be unnecessary.
- 5 The fact that vertical farms would need  light is a disadvantage.
- 6 One form of vertical farming involves planting in  which are not fixed.
- 7 The most probable development is that food will be grown on  in towns and cities.

## Questions 8-13

*Do the following statements agree with the information given in Reading Passage?*

*In boxes 8-13 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

8  Methods for predicting the Earth's population have recently changed.

9  Human beings are responsible for some of the destruction to food-producing land.

10  The crops produced in vertical farms will depend on the season.

11  Some damage to food crops is caused by climate change.

12  Fertilisers will be needed for certain crops in vertical farms.

13  Vertical farming will make plants less likely to be affected by infectious diseases.

## Solution for: Crop-growing skyscrapers

### Answer Table

1. tomatoes	8. NOT GIVEN
2. urban centres/centers	9. TRUE
3. energy	10. FALSE
4. fossil fuel	11. TRUE
5. artificial	12. FALSE
6. (stacked) trays	13. TRUE
7. (urban) rooftops	

### TEST 58: *Crack IELTS the easy way*

The risks agriculture faces in developing countries

*Synthesis of an online debate*

A

Two things distinguish food production from all other productive activities: first, every single person needs food each day and has a right to it; and second, it is hugely dependent on nature. These two unique aspects, one political, the other natural, make food production highly vulnerable and different from any other

business. At the same time, cultural values are highly entrenched in food and agricultural systems worldwide.

## B

Farmers everywhere face major risks; including extreme weather, long-term climate change, and price volatility in input and product markets. However, smallholder farmers in developing countries must in addition deal with adverse environments, both natural, in terms of soil quality, rainfall, etc. and human, in terms of infrastructure, financial systems, markets, knowledge and technology. Counter-intuitively, hunger is prevalent among many smallholder farmers in the developing world.

## C

Participants in the online debate argued that our biggest challenge is to address the underlying causes of the agricultural system's inability to ensure sufficient food for all, and they identified as drivers of this problem our dependency on fossil fuels and unsupportive government policies.

## D

On the question of mitigating the risks farmers face, most essayists called for greater state intervention. In his essay, Kanayo F. Nwanze, President of the International Fund for Agricultural Development, argued that governments can significantly reduce

risks for farmers by providing basic services like roads to get produce more efficiently to markets, or water and food storage facilities to reduce losses. Sophia Murphy, senior advisor to the Institute for Agriculture and Trade Policy, suggested that the procurement and holding of stocks by governments can also help mitigate wild swings in food prices by alleviating uncertainties about market supply.

## E

Shenggen Fan, Director General of the International Food Policy Research Institute, held up social safety nets and public welfare programmes in Ethiopia, Brazil and Mexico as valuable ways to address poverty among farming families and reduce their vulnerability to agriculture shocks. However, some commentators responded that cash transfers to poor families do not necessarily translate into increased food security, as these programmes do not always strengthen food production or raise incomes.

Regarding state subsidies for agriculture, Rokeya Kabir, Executive Director of Bangladesh Nari Progati Sangha, commented in her essay that these 'have not compensated for the stranglehold exercised by private traders.

In fact, studies show that sixty percent of beneficiaries of subsidies are not poor, but rich landowners and non-farmer traders.

## F

Nwanze, Murphy and Fan argued that private risk management tools, like private insurance, commodity futures markets, and rural finance can help small-scale producers mitigate risk and allow for investment in improvements. Kabir warned that financial support schemes often encourage the adoption of high-input agricultural practices, which in the medium term may raise production costs beyond the value of their harvests.

Murphy noted that when futures markets become excessively financialised they can contribute to short-term price volatility, which increases farmers' food insecurity. Many participants and commentators emphasised that greater transparency in markets is needed to mitigate the impact of volatility, and make evident whether adequate stocks and supplies are available. Others contended that agribusiness companies should be held responsible for paying for negative side effects.

## G

Many essayists mentioned climate change and its consequences for small-scale agriculture. Fan explained that in addition to reducing crop yields, climate change increases the magnitude and the frequency of extreme weather events, which increase smallholder vulnerability. The growing unpredictability of weather patterns increases farmers' difficulty in managing weather-related risks.

According to this author, one solution would be to develop crop varieties that are more resilient to new climate trends and extreme weather patterns. Accordingly, Pat Mooney, co-founder and executive director of the ETC Group, suggested that 'if we are to survive climate change, we must adopt policies that let peasants diversify the plant and animal species and varieties/breeds that make up our menus.'

## H

Some participating authors and commentators argued in favour of community-based and autonomous risk management strategies through collective action groups, co-operatives or producers' groups. Such groups enhance market opportunities for small-scale producers, reduce marketing costs and synchronise buying and selling with seasonal price conditions.

According to Murphy, 'collective action offers an important way for farmers to strengthen their political and economic bargaining power, and to reduce their business risks. One commentator, Giel Ton, warned that collective action does not come as a free good. It takes time, effort and money to organise, build trust and to experiment. Others, like Marcel Vernooij and Marcel Beukeboom, suggested that in order to 'apply what we already know', all stakeholders, including business, government, scientists and civil

society, must work together, starting at the beginning of the value chain.

I

Some participants explained that market price volatility is often worsened by the presence of intermediary purchasers who, taking advantage of farmers' vulnerability, dictate prices. One commentator suggested farmers can gain greater control over prices and minimise price volatility by selling directly to consumers.

Similarly, Sonali Bisht, founder and advisor to the Institute of Himalayan Environmental Research and Education (INHERE), India, wrote that copipunity-supported agriculture, where consumers invest in local farmers by subscription and guarantee producers a fair price, is a risk-sharing model worth more attention. Direct food distribution systems not only encourage small-scale agriculture but also give consumers more control over the food they consume, she wrote.

### Questions 1-3

*Reading Passage 1 has nine paragraphs, A-I.*

Which paragraph contains the following information?

Write the correct letter, A-I, in boxes 1-3 on your answer sheet.

1. a reference to characteristics that only apply to food production.

2. a reference to challenges faced only by farmers in certain parts of the world.
3. a reference to difficulties in bringing about co-operation between farmers.

### **Questions 4-9**

*Look at the following statements (Questions 4-9) and the list of people below.*

Match each statement with the correct person, A-G.

Write the correct letter, A-G, in boxes 4-9 on your answer sheet.

**NB** You may use any letter more than once.

4. Financial assistance from the government does not always go to the farmers who most need it.
5. Farmers can benefit from collaborating as a group.
6. Financial assistance from the government can improve the standard of living of farmers.
7. Farmers may be helped if there is financial input by the same individuals who buy
8. Governments can help to reduce variation in prices.
9. Improvements to infrastructure can have a major impact on risk for farmers. from them.

### List of People

- A. Kanayo F. Nwanze
- B. Sophia Murphy
- C. Shenggen Fan
- D. Rokeya Kabir
- E. Pat Mooney
- F. Giel Ton
- G. Sonali Bisht

### Questions 10-11

Choose **TWO** letters, A-E.

Write the correct letters in boxes 10-11 on your answer sheet.

*Which **TWO** problems are mentioned which affect farmers with small farms in developing countries?*

- A. lack of demand for locally produced food
- B. lack of irrigation programmes
- C. being unable to get insurance
- D. the effects of changing weather patterns
- E. having to sell their goods to intermediary buyers

### Questions 12-13

Choose **TWO** letters, A-E.

Write the correct letters in boxes 12-13 on your answer sheet.

Which **TWO** actions are recommended for improving conditions for farmers?

- A. reducing the size of food stocks.
- B. attempting to ensure that prices rise at certain times of the year.
- C. organising co-operation between a wide range of interested parties.
- D. encouraging consumers to take a financial stake in farming.
- E. making customers aware of the reasons for changing food prices.



**Answer:**

- 1. A
- 2. B
- 3. H
- 4. D
- 5. B
- 6. C
- 7. G
- 8. B
- 9. A

**10. D**

**11. E**

[Answer to questions 10 & 11 in any order]

**12. C**

**13. D**

### TEST 59:

#### Computer Provides More Questions Than Answers

**A**

The island of Antikythera lies 18 miles north of Crete, where the Aegean Sea meets the Mediterranean. Currents there can make shipping treacherous – and one ship bound for ancient Rome never made it. The ship that sank there was a giant cargo vessel measuring nearly 500 feet long. It came to rest about 200 feet below the surface, where it stayed for more than 2,000 years until divers looking for sponges discovered the wreck a little more than a century ago.

**B**

Inside the hull were a number of bronze and marble statues. From the look of things, the ship seemed to be carrying luxury items, probably made in various Greek islands and bound for wealthy patrons in the growing Roman Empire. The statues were retrieved, along with a lot of other unimportant stuff, and stored. Nine months later, an enterprising archaeologist cleared off a layer of organic material from one of the pieces of junk and found

that it looked like a gearwheel. It had inscriptions in Greek characters and seemed to have something to do with astronomy.

## C

That piece of “junk” went on to become the most celebrated find from the shipwreck; it is displayed at the National Archaeological Museum of Athens. Research has shown that the wheel was part of a device so sophisticated that its complexity would not be matched for a thousand years – it was also the world’s first known analogue computer. The device is so famous that an international conference organized in Athens a couple of weeks ago had only one subject: the Antikythera Mechanism.

## D

Every discovery about the device has raised new questions. Who built the device, and for what purpose? Why did the technology behind it disappear for the next thousand years? What does the device tell us about ancient Greek culture? And does the marvelous construction, and the precise knowledge of the movement of the sun and moon and Earth that it implies, tell us how the ancients grappled with ideas about determinism and human destiny?

## E

“We have gear trains from the 9th century in Baghdad used for simpler displays of the solar and lunar motions relative to one another – they use eight gears,” said François Charette, a historian of science in Germany who wrote an editorial

accompanying a new study of the mechanism two weeks ago in the journal Nature. “In this case, we have more than 30 gears. To see it on a computer animation makes it mind-boggling. There is no doubt it was a technological masterpiece.”

## F

The device was probably built between 100 and 140 BC, and the understanding of astronomy it displays seems to have been based on knowledge developed by the Babylonians around 300-700 BC, said Mike Edmunds, a professor of astrophysics at Cardiff University in Britain. He led a research team that reconstructed what the gear mechanism would have looked like by using advanced three-dimensional-imaging technology. The group also decoded a number of the inscriptions. The mechanism explores the relationship between lunar months – the time it takes for the moon to cycle through its phases, say, full moon to the full moon – and calendar years. The gears had to be cut precisely to reflect this complex relationship; 19 calendar years equal 235 lunar months.

## G

By turning the gear mechanism, which included what Edmunds called a beautiful system of epicyclic gears that factored in the elliptical orbit of the moon, a person could check what the sky would have looked like on a date in the past, or how it would appear in the future. The mechanism was encased in a box with doors in front and back covered with inscriptions – a sort of

instruction manual. Inside the front door were pointers indicating the date and the position of the sun, moon and zodiac, while opening the back door revealed the relationship between calendar years and lunar months, and a mechanism to predict eclipses.

## H

“If they needed to know when eclipses would occur, and this related to the rising and setting of stars and related them to dates and religious experiences, the mechanism would directly help,” said Yanis Bitsakis, a physicist at the University of Athens who co-wrote the Nature paper. “It is a mechanical computer. You turn the handle and you have a date on the front.” Building it would have been expensive and required the interaction of astronomers, engineers, intellectuals and craftspeople. Charette said the device overturned conventional ideas that the ancient Greeks were primarily ivory tower thinkers who did not deign to muddy their hands with technical stuff. It is a reminder, he said, that while the study of history often focuses on written texts, they can tell us only a fraction of what went on at a particular time.

## I

Imagine a future historian encountering philosophy texts written in our time – and an aircraft engine. The books would tell that researcher what a few scholars were thinking today, but the engine would give them a far better window into how technology influenced our everyday lives. Charette said it was unlikely that

the device was used by practitioners of astrology, then still in its infancy. More likely, he said, it was bound for a mantelpiece in some rich Roman's home. Given that astronomers of the time already knew how to calculate the positions of the sun and the moon and to predict eclipses without the device, it would have been the equivalent of a device built for a planetarium today – something to spur popular interest or at least claim bragging rights.

J

Why was the technology that went into the device lost? "The time this was built, the jackboot of Rome was coming through," Edmunds said. "The Romans were good at town planning and sanitation but were not known for their interest in science." The fact that the device was so complex, and that it was being shipped with a number of other luxury items, tells Edmunds that it is very unlikely to have been the only one ever made. Its sophistication "is such that it can't have been the only one," Edmunds said. "There must have been a tradition of making them. We're always hopeful a better one will surface." Indeed, he said, he hopes that his study and the renewed interest in the Antikythera Mechanism will prompt second looks by both amateurs and professionals around the world. "The archaeological world may look in their cupboards and maybe say, 'That isn't a bit of rusty old metal in the cupboard.'"

## Questions 14-18

The Reading Passage has ten paragraphs A-J

Which paragraph contains the following information?

*Write the correct letter A-J, in boxes 14-18 on your answer sheet.*

- 14 The content inside the wrecked ship
- 15 Ancient astronomers and craftsman might involve
- 16 The location of the Antikythera Mechanism
- 17 Details of how it was found
- 18 Appearance and structure of the mechanism

## Questions 19-22

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 19-22 on your answer sheet.*

An ancient huge sunk 19..... was found accidentally by sponges searcher. The ship loaded with 20..... such as bronze and sculptures. However, an archaeologist found a junk similar to a 21..... which has Greek script on it. This inspiring and elaborated device was found to be the first 22..... in the world

## Questions 23-26

Use the information in the passage to match the people (listed A-C) with opinions or deeds below. Write the appropriate letters A-F in boxes 23-27 on your answer sheet.

**NB** *You may use any letter more than once*

A Yanis Bitsakis

B Mike Edmunds

C François Charette

23 More complicated than the previous device

24 Anticipate to find more Antikythera Mechanism in the future

25 Antikythera Mechanism was found related to the moon

26 Mechanism assisted ancient people to calculate the movement of stars.

## ANSWERS:

14. B

15. H

16. C

17. A

18. G

19. cargo vessel

20. luxury items

21. gearwheel

22. analog computer

23. C

24. B

25. B

26. A

TEST 60:

### Psychology of New Product Adoption

**A** In today's hypercompetitive marketplace, companies that successfully introduce new products are more likely to flourish than those that don't. Businesses spend billions of dollars making better "mousetraps" only to find consumers roundly rejecting them. Studies show that new products fail at the stunning rate of between 40% and 90%, depending on the category, and the odds haven't changed much in the past 25 years. In the U.S. packaged goods industry, for instance, companies introduce 30,000 products every year, but 70% to 90% of them don't stay on store shelves for more than 12 months. Most innovative products<sup>^</sup>those that create new product categories or revolutionize old ones—are also unsuccessful. According to one study, 47% of first movers have foiled, meaning that approximately half the companies that pioneered new product categories later pulled out of those businesses.

**B** After the fact, experts and novices alike tend to dismiss unsuccessful innovations as bad ideas that were destined to fail. Why do consumers fail to buy innovative products even when they offer distinct improvements over existing ones? Why do

companies invariably have more faith in new products than is warranted? Few would question the objective advantages of many innovations over existing alternatives, but that's often not enough for them to succeed. To understand why new products fail to live up to companies' expectations, we must delve into the psychology of behavior change.

C New products often require consumers to change their behavior. As companies know, those behavior changes entail costs. Consumers costs, such as the activation fees they have to pay when they switch from one cellular service provider to another. They also bear learning costs, such as when they shift from manual to automatic automobile transmissions. People sustain obsolescence costs, too. For example, when they switch from VCRs to DVD players, their videotape collections become useless. All of these are economic switching costs that most companies routinely anticipate.

D What businesses don't take into account, however, are the psychological costs associated with behavior change. Many products fail because of an universal, but largely ignored, psychological bias: People irrationally overvalue benefits they currently possess relative to those they don't. The bias leads consumers to value the advantages of products they own more than the benefits of new ones. It also leads executives to value the benefits of innovations they've developed over the advantages of incumbent products.

**E** Companies have long assumed that people will adopt new products that deliver more value or utility than existing ones. Thus, businesses need only to develop innovations that are objectively superior to incumbent products, and consumers will have sufficient incentive to purchase them. In the 1960s, communications scholar Everett Rogers called the concept “relative advantage” and identified it as the most critical driver of new-product adoption. This argument assumes that companies make unbiased assessments of innovations and of consumers’ likelihood of adopting them. Although compelling, the theory has one major flaw: It fails to capture the psychological biases that affect decision making.

**F** In 2002, psychologist Daniel Kahneman won the Nobel Prize in economics for a body of work that explores why and when individuals deviate from rational economic behavior. One of the cornerstones of that research, developed with psychologist Amos Tversky, is how individuals value prospects, or choices, in the marketplace. Kahneman and Tversky showed, and others have confirmed, that human beings’ responses to the alternatives before them have four distinct characteristics.

**G** First, people evaluate the attractiveness of an alternative based not on its objective, or actual, value but on its subjective, or perceived, value. Second, consumers evaluate new products or investments relative to a reference point, usually the products they already own or consume. Third, people view any

improvements relative to this reference point as gains and treat all shortcomings as losses. Fourth, and most important, losses have a far greater impact on people than similarly sized gains, a phenomenon that Kahneman and Tversky called “loss aversion.” For instance, studies show that most people will not accept a bet in which there is a 50% chance of winning \$100 and a 50% chance of losing \$100. The gains from the wager must outweigh the losses by a factor of between two and three before most people find such a bet attractive. Similarly, a survey of 1,500 customers of Pacific Gas and Electric revealed that consumers demand three to four times more compensation to endure a power outage— and suffer a loss—than they are willing to pay to avoid the problem, a potential gain. As Kahneman and Tversky wrote, “losses loom larger than gains.”



## S WINNERS ELTS the easy way

### Psychology of New Product Adoption

H Loss aversion leads people to value products that they already possess those that are part of their endowment – -more than those they don't have. According to behavioral economist Richard

Thaler, consumers value what they own, but may have to give up, much more than they value what they don't own but could obtain. Thaler called that bias the "endowment effect."

In a 1990 paper, Thaler and his colleagues describe a series of experiments they conducted to measure the magnitude of the endowment effect. In one such experiment, they gave coffee mugs to a group of people, the Sellers, and asked at what price point—from 25 cents to \$9.25—the Sellers would be willing to part with those mugs. They asked another group—the Choosers to whom they didn't give coffee mugs, to indicate whether they would choose the mug or the money at each price point. In objective terms, all the Sellers and Choosers were in the same situation: They were choosing between a mug and a sum of money. In one trial of this experiment, the Sellers priced the mug at \$7.12, on average, but the Choosers were willing to pay only \$3.12. In another trial, the Sellers and the Choosers valued the mug at \$7.00 and \$3.50, respectively. Overall, the Sellers always demanded at least twice as much to give up the mugs as the Choosers would pay to obtain them.

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## Psychology of New Product Adoption

J Kahneman and Tversky's research also explains why people tend to stick with what they have even if a better alternative exists. In a 1989 paper, economist Jack Knetsch provided a compelling demonstration of what economists William Samuelson and Richard Zeckhauser called the "status quo bias". Knetsch asked one group of students to choose between an attractive coffee mug and a large bar of Swiss chocolate. He gave a second group of students the coffee mugs but a short time later allowed each student to exchange his or her mug for a chocolate bar. Finally, Knetsch gave chocolate bars to a third group of students but much later allowed each student to exchange his or her bar for a mug. Of the students given a choice at the outset, 56% chose the mug, and 44% chose the chocolate bar, indicating a near even split in preferences between the two products. Logically, therefore, about half of the students to whom Knetsch gave the coffee mug should have traded for the chocolate bar and vice versa. That didn't happen. Only 11% of the students who had been given the mugs and 10% of those who had been given the

chocolate bars wanted to exchange their products. To approximately 90% of the students, giving up what they already had seemed like a painful loss and shrank their desire to trade. K Interestingly, most people seem oblivious to the existence of the behaviors implicit in the endowment effect and the status quo bias. In study after study, when researchers presented people with evidence that they had irrationally overvalued the status quo, they were shocked, skeptical, and more than a bit defensive. These behavioral tendencies are universal, but awareness of them is not.

### QUESTIONS

**Questions 28-31** 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 **28-31** on your answer sheet.

A Richard Thaler

B Everett Rogers

C Kahneman and Tversky

**28** stated a theory which bears potential fault in application

**29** decided the consumers/ several behavior features when they face other options

**30** generalised that customers value more of their possession they are going to abandon for a purpose than alternative they are going to swap in

**31** answered the reason why people don't replace existing products

**Questions 32-36** 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 agrees with the information

**FALSE** if the statement contradicts the information

**NOT GIVEN** if there is no information on this

**32** The products of innovations which beat existing alternatives can guarantee a successful market share.

**33** Few companies calculated the possibility of switching to new products more than in economic judgment.

**34** Gender affects the loss and gain outcome in the real market place.

**35** Endowment-effect experiment showed there was a huge gap between seller's anticipation and the chooser's offer.

**36** Customers accept the fact peacefully when they are revealed the status quo bias.

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

**37** What does paragraph A illustrated in business creative venture?

A above 70% products stored in warehouse

B only US packaged goods industry affected

C roughly half of new product business failed

D new products have long life span.

**38 What do specialists and freshers tend to think how a product sold well:**

A as more products stored on shelf

B being creative and innovative enough

C having more chain stores

D learning from famous company like Webvan

**39 According to this passage, a number of products fail because of following reason:**

A they ignore the fact that people tend to overvalue the product they own.

B they are not confident with their products

C they are familiar with people's psychology state

D they forget to mention the advantages of products

**40 what does the experiment of “status quo bias” suggest which conducted by Nobel prize winner Kahneman and Tversky:**

A about half of them are willing to change

B student are always to welcome new items

- C 90% of both owners in neutral position
- D only 10% of chocolate bar owner are willing to swap

## ANSWERS

28. B
29. C
30. A
31. C
32. FALSE
33. TRUE
34. NOT GIVEN
35. TRUE
36. FALSE
37. C
38. B
39. A
40. D

## TEST 61:

### Quantitative Research in Education

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Many education researchers used to work on the assumption that children experience different phases of development, and that they cannot execute the most advanced level of cognitive operation until they have reached the most advanced forms of cognitive process. For example, one researcher Piaget had a well-

known experiment in which he asked the children to compare the amount of liquid in containers with different shapes. Those containers had the same capacity, but even when the young children were demonstrated that the same amount of fluid could be poured between the containers, many of them still believed one was larger than the other. Piaget concluded that the children were incapable of performing the logical task in figuring out that the two containers were the same size even though they had different shapes, because their cognitive development had not reached the necessary phase. Critics on his work, such as Donaldson, have questioned this interpretation. They point out the possibility that the children were just unwilling to play the experimenter's game, or that they did not quite understand the question asked by the experimenter. These criticisms surely do state the facts, but more importantly, it suggests that experiments are social situations where interpersonal interactions take place. The implication here is that Piaget's investigation and his attempts to replicate it are not solely about measuring the children's capabilities of logical thinking, but also the degree to which they could understand the directions for them, their willingness to comply with these requirements, how well the experimenters did in communicating the requirements and in motivating those children, etc.

The same kinds of criticisms have been targeted to psychological and educational tests. For instance, Mehan argues that the

subjects might interpret the test questions in a way different from that meant by the experimenter. In a language development test, researchers show children a picture of a medieval fortress, complete with moat, drawbridge, parapets and three initial consonants in it: D, C, and G. The children are required to circle the correct initial consonant for 'castle'. The answer is C, but many kids choose D. When asked what the name of the building was, the children responded 'Disneyland'. They adopted the reasoning line expected by the experimenter but got to the wrong substantive answer. The score sheet with the wrong answers does not include in it a child's lack of reasoning capacity; it only records that the children gave a different answer rather than the one the tester expected.

Here we are constantly getting questions about how valid the measures are where the findings of the quantitative research are usually based. Some scholars such as Donaldson consider these as technical issues, which can be resolved through more rigorous experimentation. In contrast, others like Mehan reckon that the problems are not merely with particular experiments or tests, but they might legitimately jeopardise the validity of all researches of this type.

Meanwhile, there are also questions regarding the assumption in the logic of quantitative educational research that causes can be identified through physical and/or statistical manipulation of the variables. Critics argue that this does not take into consideration

the nature of human social life by assuming it to be made up of static, mechanical causal relationships, while in reality, it includes complicated procedures of interpretation and negotiation, which do not come with determinate results. From this perspective, it is not clear that we can understand the pattern and mechanism behind people's behaviours simply in terms of the causal relationships, which are the focuses of quantitative research. It is implied that social life is much more contextually variable and complex.

Such criticisms of quantitative educational research have also inspired more and more educational researchers to adopt qualitative methodologies during the last three or four decades. These researchers have steered away from measuring and manipulating variables experimentally or statistically. There are many forms of qualitative research, which is loosely illustrated by terms like 'ethnography', 'case study', 'participant observation', 'life history', 'unstructured interviewing', 'discourse analysis' and so on. Generally speaking, though, it has characteristics as follows:

Qualitative researches have an intensive focus on exploring the nature of certain phenomena in the field of education, instead of setting out to test hypotheses about them. It also inclines to deal with 'unstructured data', which refers to the kind of data that have not been coded during the collection process regarding a closed set of analytical categories. As a result, when engaging in

observation, qualitative researchers use audio or video devices to record what happens or write in detail open-ended field-notes, instead of coding behaviour concerning a pre-determined set of categories, which is what quantitative researchers typically would do when conducting 'systematic observation'. Similarly, in an interview, interviewers will ask open-ended questions instead of ones that require specific predefined answers of the kind typical, like in a postal questionnaire. Actually, qualitative interviews are often designed to resemble casual conversations.

The primary forms of data analysis include verbal description and explanations and involve explicit interpretations of both the meanings and functions of human behaviours. At most, quantification and statistical analysis only play a subordinate role. The sociology of education and evaluation studies were the two areas of educational research where criticism of quantitative research and the development of qualitative methodologies initially emerged in the most intense way. A series of studies conducted by Lacey, Hargreaves and Lambert in a boys' grammar school, a boys' secondary modern school, and a girls' grammar school in Britain in the 1960s marked the beginning of the trend towards qualitative research in the sociology of education.

Researchers employed an ethnographic or participant observation approach, although they did also collect some quantitative data, for instance on friendship patterns among the students. These researchers observed lessons, interviewed both the teachers and

the students, and made the most of school records. They studied the schools for a considerable amount of time and spent plenty of months gathering data and tracking changes over all these years.

### Questions 28-32

Look at the following statements or descriptions (Questions 28-32) and the list of people below.

Match each statement or description with the correct person or people, A, B, C or D

Write the correct letter, A, B, C or D, in boxes 28-32 on your answer sheet.

**NB** *You may use any letter more than once.*

#### Lists of People

A Piaget

B Mehan

C Donaldson

D Lacey, Hargreaves and Lambert

**28** A wrong answer indicates more of a child's different perspective than incompetence in reasoning.

**29** Logical reasoning involving in the experiment is beyond children's cognitive development.

**30** Children's reluctance to comply with the game rules or miscommunication may be another explanation.

**31** There is an indication of a scientific observation approach in research.

**32** There is a detail of flaw in experiments on children's language development.

### Questions 33-36

Complete the sentences below.

Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

Write your answers in boxes 33-36 on your answer sheet.

**33** In Piaget's experiment, he asked the children to distinguish the amount of ..... in different containers.

**34** Subjects with the wrong answer more inclined to answer '.....' instead of their wrong answer D in Mehan's question.

**35** Some people criticised the result of Piaget experiment, but Donaldson thought the flaw could be rectified by .....

**36** Most qualitative researches conducted by Lacey, Hargreaves and Lambert were done in a .....

### Questions 37-39

Choose **THREE** letters, A-F.

Write the correct letters in boxes **37-39** on your answer sheet.

The list below includes characteristics of the 'qualitative research'.

Which **THREE** are mentioned by the writer of the passage?

**A** Coding behavior in terms of predefined set of categories

- B Designing an interview as an easy conversation
- C Working with well-organised data in a closed set of analytical categories
- D Full of details instead of loads of data in questionnaires
- E Asking to give open-ended answers in questionnaires
- F Recording the researching situation and applying note-taking

#### Question 40

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

Write the correct letter in box 40 on your answer sheet.

What is the main idea of the passage?

- A to prove that quantitative research is most applicable to children's education
- B to illustrate the society lacks of deep comprehension of educational approach
- C to explain the ideas of quantitative research and the characteristics of the related criticisms
- D to imply qualitative research is a flawless method compared with quantitative one

#### ANSWERS:

---

28. B

29. A

30. C

31. D

32. B

33. liquid
34. Disneyland
35. rigorous experimentation
36. grammar school
37. B
38. D
39. E
40. C

TEST 62:



### Telepathy

*Can human beings communicate by thought alone? For more than a century the issue of telepathy has divided the scientific community, and even today it still sparks bitter controversy among top academics*

Since the 1970s, parapsychologists at leading universities and research institutes around the world have risked the derision of sceptical colleagues by putting the various claims for telepathy to the test in dozens of rigorous scientific studies. The results and their implications are dividing even the researchers who uncovered them.

Some researchers say the results constitute compelling evidence that telepathy is genuine. Other parapsychologists believe the field is on the brink of collapse, having tried to produce definitive

scientific proof and failed. Sceptics and advocates alike do concur on one issue, however, that the most impressive evidence so far has come from the so-called 'ganzfeld' experiments, a German term that means 'whole field'. Reports of telepathic experiences had by people during meditation led parapsychologists to suspect that telepathy might involve 'signals' passing between people that were so faint that they were usually swamped by normal brain activity. In this case, such signals might be more easily detected by those experiencing meditation-like tranquillity in a relaxing 'whole field' of light, sound and warmth.

The ganzfeld experiment tries to recreate these conditions with participants sitting in soft reclining chairs in a sealed room, listening to relaxing sounds while their eyes are covered with special filters letting in only soft pink light. In early ganzfeld experiments, the telepathy test involved identification of a picture chosen from a random selection of four taken from a large image bank. The idea was that a person acting as a 'sender' would attempt to beam the image over to the 'receiver' relaxing in the sealed room. Once the session was over, this person was asked to identify which of the four images had been used. Random guessing would give a hit-rate of 25 per cent; if telepathy is real, however, the hit-rate would be higher. In 1982, the results from the first ganzfeld studies were analysed by one of its pioneers, the American parapsychologist Charles Honorton. They pointed to

typical hit-rates of better than 30 per cent — a small effect, but one which statistical tests suggested could not be put down to chance.

The implication was that the ganzfeld method had revealed real evidence for telepathy. But there was a crucial flaw in this argument — one routinely overlooked in more conventional areas of science. Just because chance had been ruled out as an explanation did not prove telepathy must exist; there were many other ways of getting positive results. These ranged from 'sensory leakage' — where clues about the pictures accidentally reach the receiver — to outright fraud. In response, the researchers issued a review of all the ganzfeld studies done up to 1985 to show that 80 per cent had found statistically significant evidence. However, they also agreed that there were still too many problems in the experiments which could lead to positive results, and they drew up a list demanding new standards for future research.

After this, many researchers switched to autoganzfeld tests — an automated variant of the technique which used computers to perform many of the key tasks such as the random selection of images. By minimising human involvement, the idea was to minimise the risk of flawed results. In 1987, results from hundreds of autoganzfeld tests were studied by Honorton in a 'meta-analysis', a statistical technique for finding the overall

results from a set of studies. Though less compelling than before, the outcome was still impressive.

Yet some parapsychologists remain disturbed by the lack of consistency between individual ganzfeld studies. Defenders of telepathy point out that demanding impressive evidence from every study ignores one basic statistical fact: it takes large samples to detect small effects. If, as current results suggest, telepathy produces hit-rates only marginally above the 25 per cent expected by chance, it's unlikely to be detected by a typical ganzfeld study involving around 40 people: the group is just not big enough. Only when many studies are combined in a meta-analysis will the faint signal of telepathy really become apparent. And that is what researchers do seem to be finding.

What they are certainly not finding, however, is any change in attitude of mainstream scientists: most still totally reject the very idea of telepathy. The problem stems at least in part from the lack of any plausible mechanism for telepathy.

Various theories have been put forward, many focusing on esoteric ideas from theoretical physics. They include 'quantum entanglement', in which events affecting one group of atoms instantly affect another group, no matter how far apart they may be. While physicists have demonstrated entanglement with

specially prepared atoms, no-one knows if it also exists between atoms making up human minds. Answering such questions would transform parapsychology. This has prompted some researchers to argue that the future lies not in collecting more evidence for telepathy, but in probing possible mechanisms. Some work has begun already, with researchers trying to identify people who are particularly successful in autoganzfeld trials. Early results show that creative and artistic people do much better than average: in one study at the University of Edinburgh, musicians achieved a hit-rate of 56 per cent. Perhaps more tests like these will eventually give the researchers the evidence they are seeking and strengthen the case for the existence of telepathy.

### **Questions 27-30**

Complete each sentence with the correct ending, A —G, below.

Write the correct letter, A—G, in boxes 27-30 on your answer sheet.

*Crack IELTS the easy way*

**27** Researchers with differing attitudes towards telepathy agree on

**28** Reports of experiences during meditation indicated

**29** Attitudes to parapsychology would alter drastically with

**30** Recent autoganzfeld trials suggest that success rates will improve with

- A the discovery of a mechanism for telepathy.
- B the need to create a suitable environment for telepathy.
- C their claims of a high success rate.
- D a solution to the problem posed by random guessing.
- E the significance of the ganzfeld experiments.
- F a more careful selection of subjects.
- G a need to keep altering conditions.

### Questions 31-40

Complete the table below.

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

Write your answers in boxes 31-40 on your answer sheet.

### Telepathy Experiments

Name/ Date	Description	Result	Flaw
Ganzfeld studies 1982	Involved a person acting as a 31....., who picked out one 32..... from a random selection of four, and a 33....., who then tried to identify it.	Hit-rates were higher than with random guessing.	Posi as 3

Autoganzfeld studies 1987	<b>36</b> ..... were used for key tasks to limit the amount of <b>37</b> ..... in carrying out the tests.	The results were then subjected to a <b>38</b> .....	The resu gru mos
---------------------------------	---	--	------------------------

## ANSWERS:

27 E

28 B

29 A

30 F

31 sender

32 picture/image

33 receiver

34 & 35 sensory leakage (or) (outright) fraud (*IN EITHER ORDER*)

36 computers

37 human involvement

38 meta-analysis

39 lack of consistency

40 big/ large enough



## TEST 63:

**The history of the poster**

***The appearance of the poster has changed continuously over the past two centuries.***

The first posters were known as 'broadsides' and were used for public and commercial announcements. Printed on one side only using metal type, they were quickly and crudely produced in large quantities. As they were meant to be read at a distance, they required large lettering.

There were a number of negative aspects of large metal type. It was expensive, required a large amount of storage space and was extremely heavy. If a printer did have a collection of large metal type, it was likely that there were not enough letters. So printers did their best by mixing and matching styles.

Commercial pressure for large type was answered with the invention of a system for wood type production. In 1827, Darius Wells invented a special wood drill - the lateral router - capable of cutting letters on wood blocks. The router was used in combination with William Leavenworth's pantograph (1834) to create decorative wooden letters of all shapes and sizes. The first posters began to appear, but they had little colour and design; often wooden type was mixed with metal type in a conglomeration of styles.

A major development in poster design was the application of lithography, invented by Alois Senefelder in 1796, which allowed

artists to hand-draw letters, opening the field of type design to endless styles. The method involved drawing with a greasy crayon onto finely surfaced Bavarian limestone and offsetting that image onto paper. This direct process captured the artist's true intention; however, the final printed image was in reverse. The images and lettering needed to be drawn backwards, often reflected in a mirror or traced on transfer paper.

As a result of this technical difficulty, the invention of the lithographic process had little impact on posters until the 1860s, when Jules Cheret came up with his 'three-stone lithographic process'. This gave artists the opportunity to experiment with a wide spectrum of colours.

Although the process was difficult, the result was remarkable, with nuances of colour impossible in other media even to this day. The ability to mix words and images in such an attractive and economical format finally made the lithographic poster a powerful innovation.

Starting in the 1870s, posters became the main vehicle for advertising prior to the magazine era and the dominant means of mass communication in the rapidly growing cities of Europe and America. Yet in the streets of Paris, Milan and Berlin, these artistic prints were so popular that they were stolen off walls almost as

soon as they were hung. Cheret, later known as 'the father of the modern poster', organised the first exhibition of posters in 1884 and two years later published the first book on poster art. He quickly took advantage of the public interest by arranging for artists to create posters, at a reduced size, that were suitable for in-home display.

Thanks to Cheret, the poster slowly took hold in other countries in the 1890s and came to celebrate each society's unique cultural institutions: the cafe in France, the opera and fashion in Italy, festivals in Spain, literature in Holland and trade fairs in Germany. The first poster shows were held in Great

Britain and Italy in 1894, Germany in 1896 and Russia in 1897. The most important poster show ever, to many observers, was held in Reims, France, in 1896 and featured an unbelievable 1,690 posters arranged by country.

In the early 20th century, the poster continued to play a large communication role and to go through a range of styles. By the 1950s, however, it had begun to share the spotlight with other media, mainly radio and print. By this time, most posters were printed using the mass production technique of photo offset, which resulted in the familiar dot pattern seen in newspapers and magazines. In addition, the use of photography in posters, begun

in Russia in the twenties, started to become as common as illustration.

In the late fifties, a new graphic style that had a strong reliance on typographic elements in black and white appeared. The new style came to be known as the International Typographic Style. It made use of a mathematical grid, strict graphic rules and black-and-white photography to provide a clear and logical structure. It became the predominant style in the world in the 1970s and continues to exert its influence today.

It was perfectly suited to the increasingly international post-war marketplace, where there was a strong demand for clarity. This meant that the accessibility of words and symbols had to be taken into account. Corporations wanted international identification, and events such as the Olympics called for universal solutions, which the Typographic Style could provide.

However, the International Typographic Style began to lose its energy in the late 1970s. Many criticised it for being cold, formal and dogmatic.

A young teacher in Basel. Wolfgang Weingart, experimented with the offset printing process to produce posters that appeared complex and chaotic, playful and spontaneous - all in stark

contrast to what had gone before. Weingart's liberation of typography was an important foundation for several new styles. These ranged from Memphis and Retro to the advances now being made in computer graphics.

*[Adapted from [www.internationalposter.com](http://www.internationalposter.com)]*

### Questions 15-19

Complete the table below.

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

### Early Printing Methods

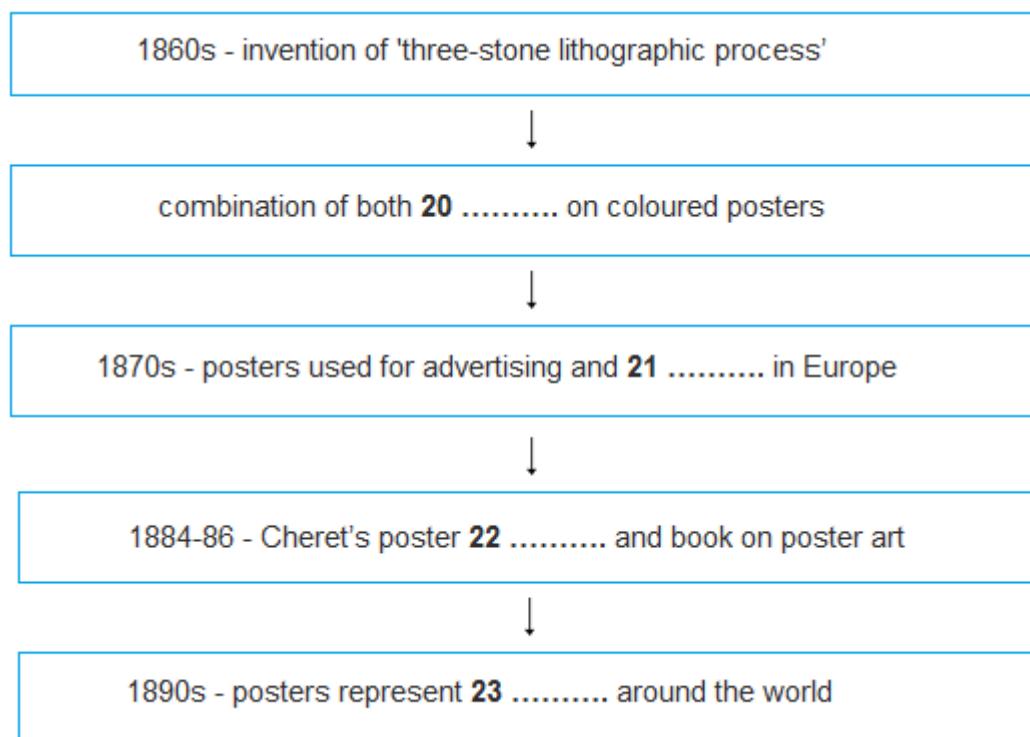
	Features	Problems
<b>Metal type</b>	<ul style="list-style-type: none"> <li>produced large print</li> </ul>	<ul style="list-style-type: none"> <li>cost, weight and 15 ..... difficulties</li> <li>mixed styles</li> </ul>
<b>Wood type</b>	<ul style="list-style-type: none"> <li>Darius's wood drill used in connection with another 16 .....</li> <li>produced a range of letters</li> </ul>	<ul style="list-style-type: none"> <li>lacked both 17 .....</li> <li>mixed type</li> </ul>

Lithography	<ul style="list-style-type: none"> <li>• letters drawn by hand</li> <li>• design tool - a 18 .....</li> </ul>	<ul style="list-style-type: none"> <li>• had to use a mirror or 19 ..... to achieve correct image</li> </ul>
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### Questions 20-23

Complete the flow chart below.

Write **NO MORE THAN THREE WORDS** from the passage for each answer.



### Questions 24-27

Do the following statements agree with the information in the reading passage?

In boxes **24–27** 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

**24.** By the 1950s, photographs were more widely seen than artists' illustrations on posters.

**25.** Features of the Typographic Style can be seen in modern-day posters.

**26.** The Typographic Style met a global need at a particular time in history.

**27.** Weingart got many of his ideas from his students in Basel.

**ANSWERS:**

**IELTS WINNERS**

14. storage

16. invention

17. color and design

18. crayon

19. transfer paper

20. words and images

21. mass communication

22. exhibition

23. cultural institutions

- 24. FALSE
- 25. TRUE
- 26. TRUE
- 27. NOT GIVEN

## TEST 64:

### 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 “palette<sup>7</sup> 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 is 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.



#### Hunting Perfume in Madagascar

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 it 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

### *Questions 14-19*

*The reading passage has seven paragraphs A-E*

*Which paragraphs contains 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.

***Questions 19-23***

*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.

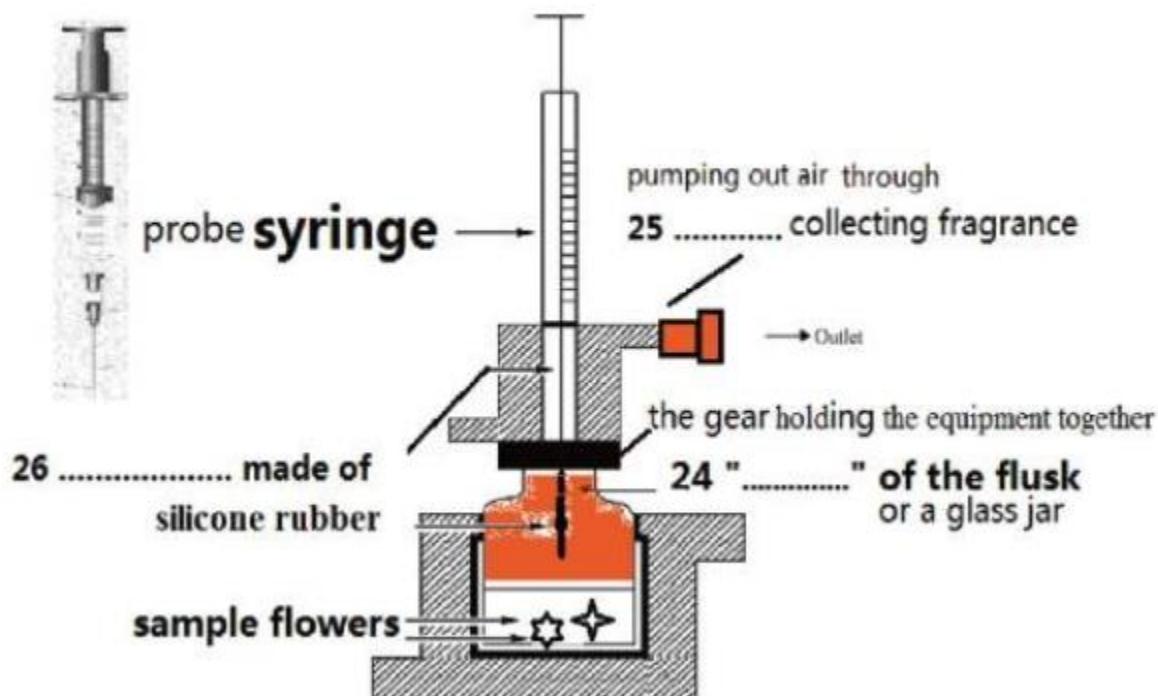
**22.** The technique the hunters used to trap fragrance molecules is totally out of their ; ingenuity.

**23.** Most customers prefer the perfume made of substance extracted from the musk I glands of animals.

### **Questions 24-26**

*Filling the blanks and answer the questions below with only one word.*

A simple device used to trap molecules



### Hunting Perfume in Madagascar

### **ANSWERS**

14	B	15	E	16	A
17	D	18	B	19	TRUE
20	TRUE	21	Not Given	22	FALSE
23	Not Given	24	headspace	25	filters
26	needle				

### TEST 65:

## Cutty Sark: the fastest sailing ship of all time

The nineteenth century was a period of great technological development in Britain, and for shipping the major changes were from wind to steam power, and from wood to iron and steel.

The fastest commercial sailing vessels of all time were clippers, three-masted ships built to transport goods around the world, although some also took passengers. From the 1840s until 1869, when the Suez Canal opened and steam propulsion was replacing sail, clippers dominated world trade. Although many were built, only one has survived more or less intact: *Cutty Sark*, now on display in Greenwich, southeast London.

*Cutty Sark's* unusual name comes from the poem *Tam O'Shanter* by the Scottish poet Robert Burns. Tam, a farmer, is chased by a witch called Nannie, who is wearing a '*cutty sark*' – an old Scottish name for a short nightdress. The witch is depicted in *Cutty Sark's* figurehead – the carving of a woman typically at the front of old sailing ships. In legend, and in Burns's poem, witches cannot cross water, so this was a rather strange choice of name for a ship.

*Cutty Sark* was built in Dumbarton, Scotland, in 1869, for a shipping company owned by John Willis. To carry out construction, Willis chose a new shipbuilding firm, Scott & Linton, and ensured that the contrast with them put him in a very strong position. In the end, the firm was forced out of business, and the ship was finished by a competitor.

Willis's company was active in the tea trade between China and Britain, where speed could bring shipowners both profits and prestige, so *Cutty Sark* was designed to make the journey more quickly than any other ship. On her maiden voyage, in 1870, she set sail from London, carrying large amounts of goods to China. She returned laden with tea, making the journey back to London in four months. However, *Cutty Sark* never lived up to the high expectations of her owner, as a result of bad winds and various misfortunes. On one occasion, in 1872, the ship and a rival clipper, *Thermopylae*, left port in China on the same day. Crossing the Indian Ocean, *Cutty Sark* gained a lead of over 400 miles, but then her rudder was severely damaged in stormy seas, making her impossible to steer. The ship's crew had the daunting task of repairing the rudder at sea, and only succeeded at the second attempt. *Cutty Sark* reached London a week after *Thermopylae*. Steam ships posed a growing threat to clippers, as their speed and cargo capacity increased. In addition, the opening of the Suez Canal in 1869, the same year that *Cutty Sark* was launched, had a serious impact. While steam ships could make use of the quick, direct route between the Mediterranean and the Red Sea, the canal was of no use to sailing ships, which needed the much stronger winds of the oceans, and so had to sail a far greater distance. Steam ships reduced the journey time between Britain and China by approximately two months.

By 1878, tea traders weren't interested in *Cutty Sark*, and instead, she took on the much less prestigious work of carrying any cargo between any two ports in the world. In 1880, violence aboard the ship led ultimately to the replacement of the captain with an incompetent drunkard who stole the crew's wages. He was suspended from service, and a new captain appointed. This marked a turnaround and the beginning of the most successful period in *Cutty Sark*'s working life, transporting wool from Australia to Britain. One such journey took just under 12 weeks, beating every other ship sailing that year by around a month. The ship's next captain, Richard Woodget, was an excellent navigator, who got the best out of both his ship and his crew. As a sailing ship, *Cutty Sark* depended on the strong trade winds of the southern hemisphere, and Woodget took her further south than any previous captain, bringing her dangerously close to icebergs off the southern tip of South America. His gamble paid off, though, and the ship was the fastest vessel in the wool trade for ten years.

As competition from steam ships increased in the 1890s, and *Cutty Sark* approached the end of her life expectancy, she became less profitable. She was sold to a Portuguese firm, which renamed her *Ferreira*. For the next 25 years, she again carried miscellaneous cargoes around the world.

Badly damaged in a gale in 1922, she was put into Falmouth harbor in southwest England, for repairs. Wilfred Dowman, a

retired sea captain who owned a training vessel, recognised her and tried to buy her, but without success. She returned to Portugal and was sold to another Portuguese company. Dowman was determined, however, and offered a high price: this was accepted, and the ship returned to Falmouth the following year and had her original name restored.

Dowman used *Cutty Sark* as a training ship, and she continued in this role after his death. When she was no longer required, in 1954, she was transferred to dry dock at Greenwich to go on public display. The ship suffered from fire in 2007, and again, less seriously, in 2014, but now *Cutty Sark* attracts a quarter of a million visitors a year.

### Questions 1-8

Do the following statements agree with the information given in Reading Passage 1?

In boxes 1-8 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** Clippers were originally intended to be used as passenger ships.

**2** *Cutty Sark* was given the name of a character in a poem.

**3** The contract between John Willis and Scott & Linton favoured Willis.

- 4 John Willis wanted *Cutty Sark* to be the fastest tea clipper travelling between the UK and China.
- 5 Despite storm damage, *Cutty Sark* beat *Thermopylae* back to London.
- 6 The opening of the Suez Canal meant that steam ships could travel between Britain and China faster than clippers.
- 7 Steam ships sometimes used the ocean route to travel between London and China.
- 8 Captain Woodget put *Cutty Sark* at risk of hitting an iceberg.

#### Questions 9-13

Complete the sentences below.

Choose ONE WORD ONLY from the passage for each answer.

*Write your answers in boxes 9-13 on your answer sheet.*

- 9 After 1880, *Cutty Sark* carried ..... as its main cargo during its most successful time.
- 10 As a captain and ....., Woodget was very skilled.
- 11 *Ferreira* went to Falmouth to repair damage that a ..... had caused.
- 12 Between 1923 and 1954, *Cutty Sark* was used for .....
- 13 *Cutty Sark* has twice been damaged by ..... in the 21st century.

#### ANSWERS:

1. FALSE

2. FALSE
3. TRUE
4. TRUE
5. FALSE
6. TRUE
7. NOT GIVEN
8. TRUE
9. wool
10. navigator
11. gale
12. training
13. fire



TEST 66:

## BIOFUELS

A. Soon, we're told, corn crops will be as valuable as oil. This is because corn and a few other crops are being promoted as the biofuels of the future. Biofuel is an umbrella term used to describe all fuels derived from organic matter. The two most common biofuels are bioethanol which is a substitute for gasoline and biodiesel. Not only have soaring oil prices made biofuels economically viable for the first time in years but they could also help countries reduce their dependency on fossil fuel imports. However, the real plus point in the minds of many is their eco-friendly image.

B. Supporters claim they will cut our net greenhouse gas inputs dramatically because the crops soak up carbon dioxide from the atmosphere as they grow. Given this fact it's no surprise that politicians and environmentalists the world over are backing the idea, hoping we will soon be using this green alternative to power their cars, buses, and trains. Other scientists, however, have begun to question the environmental and social arguments for biofuels. Far from solving out the problem, they believe biofuels will destroy rainforests, suck water reserves dry, kill off species and raise food prices. Worst of all they claim that many biofuels will hardly slow global warming at all if the technology behind them does not improve. Biofuel supporters counter that it's still early days, and we should give this technology the time and investment to delivering on its promise. So, who's right?

C. The controversy may be brand new, but the biofuels themselves are an old idea. The Model T Ford, first produced in 1908, was designed to run on ethanol, and Rudolf Diesel who invented the diesel engine in 1892, ran his demonstration model on peanut oil. Biofuels fell out of favor as petroleum-based fuel appeared and became cheaper. In produce, but, after the oil crisis of the early 1970s, some countries returned to biofuels. For example, Brazil has been producing large quantities of ethanol from sugarcane for over 30 years. Brazilian law now requires that 20 percent of fuel be blended with bioethanol which all gasoline-

powered cars can tolerate. Over 15 percent of Brazil's cars can even run on pure bioethanol.

D. According to a recent study by the World Watch Institute, for Brazil to produce ten percent of its entire fuel consumption, requires just three percent of its agricultural land, so it's not surprising that other places want to emulate Brazil's approach. The problem is that in most other countries the numbers don't add up. The same study estimated that to meet that ten percent target, the US would require 30 percent of its agricultural land, and Europe a staggering 72 percent. It's no secret why things stack up so differently. Not only do Brazilians drive far less than Europeans and Americans, their fertile land, and favorable climate mean their crop yield is higher and their population density is lower

.E. Several research groups have tried to compare fossil fuel emissions with those of corn bioethanol at every stage of production from seed sowing to fuel production. The studies have been beset by scientific uncertainties, such as how much of the greenhouse gas nitrous oxide is produced by the nitrogen fertilizer used in growing corn. Opinions are divided as to what should and should not be included in the calculation, which means the results vary widely, but a study by David Pimental at Cornell University in New York concluded that corn ethanol creates more greenhouse gases than burning fossil fuel.

F. Another reason a growing number of people oppose biofuels is that growing corn for ethanol uses up land that is currently supplying food to the world. According to Lester Brown, veteran commentator and activist on food politics, the corn required to fill a 4×4 tank with bioethanol just once could feed one person for a year. He predicts that a boom in bioethanol would lead to a competition between 800 million people in the world who own automobiles and three billion people who live on less than \$2 a day, many of whom are already spending over half their income on food.

G. So are we already mistaken to think that bioethanol could usher in an era of greener energy? The way things are developing, it certainly looks that way, but it needn't be so. Scientists want to perfect a way to make biofuels from non-food crops and waste biomass saving the corn and other food crops for food use and to do it without wrecking natural ecosystems. Already researchers are discovering ways to convert cellulose-rich organic matter into ethanol. Cellulose is the main structural component of all green plants. Its molecules comprise chains of sugars strong enough to make plant cell walls. If you could break down these molecules to release the sugars they contain, you could ferment them until ethanol is created. Developing such a process could open the door to many non-food materials such as switchgrass – a wild grass that lives on the eastern states and Midwest of the US – straw, crop residues like stalks and

hardwood chips. Its supporters say these cellulose materials could deliver twice as much ethanol per hectare as corn, and do it using land that is today neither economically productive nor environmentally precious. Some even think municipal waste such as paper, cardboard and waste food could also be used. If the numbers add up this could be the development that may yet deliver us from our dependence on oil without costing us the Earth in the process.

### Questions 1- 6

*Reading Passage has seven paragraphs, A – G. Which paragraph contains the following information.*

1. reasons for the success of bioethanol production in the region
2. an individual's prediction of the consequences of increasing production of corn ethanol
3. a reference to why biofuels might help to slow down global warming
4. a definition of biofuel
5. a reference to research that found one type of bioethanol to be less eco-friendly than oil
6. examples of how ethanol was used as a fuel before petroleum

### Questions 7- 12

*Complete the summary below. Choose NO MORE THAN TWO WORDS from the passage for each answer.*

Using Non-Fuel Crops to Make Biofuels

A major constituent of green plants is cellulose. The

7.....of cellulose is made up of sugars. These form the 8.....of plants. Ethanol could be produced by extracting the sugars and allowing them to 9..... One common North American plant that could be used in this method is 10..... Some scientists believe that this would be a more productive source of ethanol than 11..... Additionally, the source plant materials could be grown in the ground which is not currently being used for agriculture and is not 12.....valuable.

### Question 13

*Choose the correct letter A, B, C or D*

What conclusion does the writer of the text come to?

- A. Bioethanol made from sugarcane will be the cheapest fuel worldwide
- B. The US could become self-sufficient in biofuel made from corn.
- C. A biofuel may be made in time which does not damage the environment.
- D. Scientists agree that some form of bioethanol is the future for fuel.

### Answers

1 . D

2 . F

**3 . B****4 . A****5 . E****6 . C****7 . MOLECULES****8 . CELL WALLS / STRUCTURAL COMPONENT****9 . FERMENT****10 . SWITCHGRASS****11 . CORN****12 . ENVIRONMENTALLY****13 . C****TEST 67:****The History of Bicycles**

The bicycle was not invented by one individual or in one country. It took nearly 100 years and many individuals for the modern bicycle to be born. By the end of those 100 years, bicycles had revolutionized the way people travel from place to place.

Bicycles first appeared in Scotland in the early 1800s, and were called velocipedes. These early bicycles had two wheels, but they had no pedals. The rider sat on a pillow and walked his feet along the ground to move his velocipede forward.

Soon a French inventor added pedals to the front wheel. Instead of walking their vehicles, riders used their feet to run the pedals. However, pedaling was hard because velocipedes were very heavy. The framework was made of solid steel tubes and the wooden wheels were covered with steel. Even so, velocipedes were popular among rich young men, who raced them in Paris parks.

Because of the velocipedes were so hard to ride, no one thought about using them for transportation. People didn't ride velocipedes to the market or to their jobs. Instead, people thought velocipedes were just toys.

Around 1870, American manufacturers saw that velocipedes were very popular overseas. They began building velocipedes, too, but with one difference. They made the frameworks from hollow steel tubes. This alteration made velocipedes much lighter, but riders still had to work hard to pedal just a short distance. In addition, roads were bumpy so steering was difficult. In fact, most riders preferred indoor tracks where they could rent a velocipede for a small fee and take riding lessons.

Subsequent changes by British engineers altered the wheels to make pedaling more efficient. They saw that when a rider turned the pedals once, the front wheel turned once. If the front wheel was small, the bicycle traveled just a small distance with each turn. They reasoned that if the front wheel were larger, the bicycle would travel a greater distance. So they designed a bicycle with a giant front wheel. They made the rear wheel small. Its primary purpose was to help the rider balance. Balancing was hard because the rider had to sit high above the giant front wheel in order to reach the pedals.

This meant he was in danger of falling off the bicycle and injuring himself if he lost his balance. Despite this inherent danger, "high wheelers" became very popular in England.

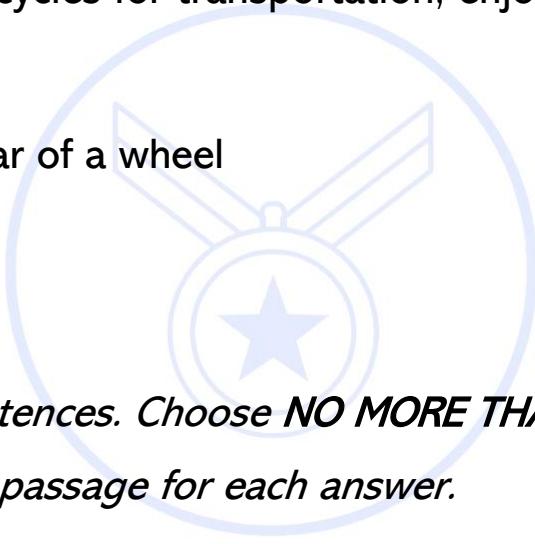
American manufacturers once again tried to design a better bicycle. Their goal was to make a safer bicycle. They substituted a small wheel for the giant front wheel and put the driving mechanism in a larger rear wheel. It would be impossible for a rider to pedal the rear wheel, so engineers designed a system of foot levers. By pressing first the right one and then the left, the rider moved a long metal bar up and down. This bar turned the rear axle<sup>1</sup>. This axle turned the rear wheel and the bicycle minimized the dangers inherent in bicycle riding, more and more people began using bicycles in their daily activities.

The British altered the design one last time. They made the two wheels equal in size and created a mechanism that uses a chain

to turn the rear wheel. With this final change, the modern bicycle was born.

Subsequent improvements, such as brakes, rubber tires, and lights were added to make bicycles more comfortable to ride. By 1900, bicycle riding had become very popular with men and women of all ages. Bicycles revolutionized the way people worldwide ride bicycles for transportation, enjoyment, sport, and exercise.

'axle the center bar of a wheel



### Questions 1-6

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

In the invention of the bicycle took part not only one individual or the country, but the world in general during the 1  years. This invention was firstly found in Scotland in the first decades of 1800, and was known as velocipedes. They were not resembled to today's bicycles and had two wheels, but they had no 2 . The rider sat on a pillow and walked his feet along the ground in order to move his velocipede forward. Soon, a French inventor added pedals to the front wheel. However, because of their difficulty in riding, nobody used them in a daily life, and they

were accepted as 3  . Around 1870, manufacturers in America found that this invention is popular 4  , but within the difference: frameworks were made from 5  , what makes them much lighter. Soon, the British inventors found the method which can make pedaling more efficient- to turn pedals one by one. They designed a bicycle with a giant front wheel. However, as the rider had to sit high above the giant front wheel it was too difficult to keep the balance. The safer bicycle was invented by Americans. They designed the rear 6  , which minimized the danger of falling and injuring. At last, the British changed the design one last time and added two wheels equal in size and the mechanism that induce a chain to turn the rear wheel. By this there was invented the example of the modern bicycle.

### Questions 7-10

*Do the following statements agree with the information given in  
Reading Passage 1? 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*

7  The bicycle was invited by Americans only

8  It was too hard to lead the velocipedes due to their heaviness

9  The alteration of velocipedes made the life of people much more easy

10  The changes by British inventors altered the wheels to make pedaling more efficient

### Questions 11-13

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

11 The British inventors concluded that if the front wheel were large in , the bicycle would travel comparatively long distance.

12 American engineers designed a system of  which was driven by pressing first the right and then the left pedals.

13 The last, but not least alteration in creating of the modern bicycle was a making the two wheels equal in size and using the  to spin the rear wheel.

### Answer Table

1. hundred	8. TRUE
2. pedals	9. NOT GIVEN

3. toys	10. TRUE
4. overseas	11. size
5. hollow steel tubes	12. foot, levers
6. axle	13. chain
7. FALSE	

TEST 68:



IELTS WINNERS

*Crack IELTS the easy way*

## Preserving Gardens

### A

With a quarter of the world's plants set to vanish within the next 50 years, Dough Alexander reports on the scientists working against the clock to preserve the Earth's botanical heritage. They travel the four corners of the globe, scouring jungles, forests and savannas. But they're not looking for ancient artefacts, lost treasure or undiscovered tombs. Just pods. It may lack the romantic allure of archaeology or the whiff of danger that accompanies going after a big game, but seed hunting is an increasingly serious business. Some seek seeds for profit-hunters in the employ of biotechnology firms, pharmaceutical companies and private corporations on the lookout for species that will yield the drugs or crops of the future. Others collect to conserve, working to halt the sad slide into extinction facing so many plant species.

### B

Among the pioneers of this botanical treasure hunt was John Tradescant, an English royal gardener who brought back plants and seeds from his journeys abroad in the early 1600s. Later, the English botanist Sir Joseph Banks – who was the first director of the Royal Botanic Gardens at Kew and travelled with Captain James Cook on his voyages near the end of the 18th century – was so driven to expand his collections that he sent botanists around the world at his own expense.

CRUCIAL TO THE EASY WAY

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**C**

Those heady days of exploration and discovery may be over, but they have been replaced by a pressing need to preserve our natural history for the future. This modern mission drives hunters such as Dr Michiel van Slageren, a good-natured Dutchman who often sports a wide-brimmed hat in the field – he could easily be mistaken for the cinematic hero Indiana Jones. He and three other seed hunters work at the Millennium Seed Bank, an 80 million [pounds sterling] international conservation project that aims to protect the world's most endangered wild plant species.

**D**

The group's headquarters are in a modern glass-and-concrete structure on a 200-hectare Estate at Wakehurst Place in the West Sussex countryside. Within its underground vaults are 260 million dried seeds from 122 countries, all stored at -20 Celsius to survive for centuries. Among the 5,100 species represented are virtually all of Britain's 1,400 native seed-bearing plants, the most complete such collection of any country's flora.

**E**

Overseen by the Royal botanic gardens, the Millennium Seed Bank is the world's largest wild-plant depository. It aims to collect 24,000 species by 2010. The reason is simple: thanks to humanity's effort, an estimated 25 per cent of the world's plants are on the verge of extinction and may vanish within 50 years. We're currently responsible for habitat destruction on an unprecedented scale, and during the past 400 years, plant species extinction rates have been about 70 times greater than those indicated by the

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geological record as being 'normal'. Experts predict that during the next 50 years further one billion hectares of wilderness will be converted to farmland in developing countries alone.

**F**

The implications of this loss are enormous. Besides providing staple food crops, plants are a source of many medicines and the principal supply of fuel and building materials in many parts of the world. They also protect soil and help regulate the climate. Yet, across the globe, plant species are being driven to extinction before their potential benefits are discovered.

**G**

The world Conservation Union has listed 5,714 threatened species is sure to be much higher. In the UK alone, 300 wild plant species are classified as endangered. The Millennium Seed Bank aims to ensure that even if a plant becomes extinct in the wild, it won't be lost forever. Stored seeds can be used the help restore damaged or destroyed the environment or in scientific research to find new benefits for society- in medicine, agriculture or local industry- that would otherwise be lost.

**H**

Seed banks are an insurance policy to protect the world's plant heritage for the future, explains Dr Paul Smith, another Kew seed hunter. "Seed conservation techniques were originally developed by farmers," he says. "Storage is the basis what we do, conserving seeds until you can use them just as in farming," Smith says there's no reason why any plant species should become extinct, given today's technology. But he admits that the biggest challenge is finding, naming and categorizing all the world's plants. And someone has to gather these seeds before it's too late. "There aren't a lot of people out there doing this," he says. "The key is to know the flora

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from a particular area, and that knowledge takes years to acquire."

**I**

There are about 1,470 seedbanks scattered around the globe, with a combined total of 5.4 million samples, of which perhaps two million are distinct non-duplicates. Most preserve genetic material for agriculture use in order to ensure crop diversity; others aim to conserve wild species, although only 15 per cent of all banked plants is wild.

**J**

Many seed banks are themselves under threat due to a lack of funds. Last year, Imperial College, London, examined crop collections from 151 countries and found that while the number of plant samples had increased in two-thirds of the countries, the budget had been cut in a quarter and remained static in another 35 per cent. The UN's Food and Agriculture Organization and the Consultative Group on International Agricultural Research has since set up the Global Conservation Trust, which aims to raise the US \$260 million to protect seed banks in perpetuity.



IELTS WINNERS

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### Questions 14-19

Do the following statements agree with the information given in Reading Passage 2?

In boxes 14-19 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

**14** The purpose of collecting seeds now is different from the past.

**15** The millennium seed bank is the earliest seed bank.

**16** One of the major threats for plant species extinction is farmland expansion into wildness.

**17** The approach that scientists apply to store seeds is similar to that used by farmers.

**18** technological development is the only hope to save plant species.

**19** The works of seed conservation are often limited by financial problems.

### Questions 20-24

#### Summary

Complete the following summary of the paragraphs of Reading Passage 2, Using **NO MORE THAN THREE WORDS** from the Reading Passage for each answer.

Write your answers in boxes 20-24 on your answer sheet.

Some people collect seeds for the purpose of protecting certain species from **20**\_\_\_\_\_ others collect seeds for their ability to produce **21**\_\_\_\_\_. They are called seed hunters. The **22**\_\_\_\_\_ of them included both gardeners and botanists, such as **23**\_\_\_\_\_, who financially supported collectors out of his own pocket. The seeds collected are usually stored in seed banks, one of which is the famous millennium seed bank, where seeds are all stored in the **24**\_\_\_\_\_ at a low temperature.

**Questions 25-26****Choose the correct letter, A-E.**

Write your answers in boxes 25, 26 on your answer sheet.

**Which TWO of the following are provided by plants to the human?**

- A** food
- B** fuels
- C** clothes
- D** energy
- E** commercial products

**IELTS WINNERS***Crack IELTS the easy way*

**14.** TRUE

**15.** NOT GIVEN

**16.** TRUE

**17.** TRUE

**18.** FALSE

**19.** TRUE

**20.** extinction

**21.** drugs, crops

**22.** pioneers

**23.** Sir Joseph Banks

**24.** underground vaults

**25.** A

**26.** B



NNERS  
*the easy way*

**TEST 69:****Antarctic Research****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.

**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

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

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

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

**17** The explanation of how atmosphere pressure above Antarctica

can impose an effect on global climate change

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

### **Question 19-21**

#### **Summary**

**Please match the natural phenomenon with correct determined factor**

Choose the correct answer from the box;

Write the correct letter A-F, in boxes 19-21 on your answer sheet.

**19** Globally, mass Antarctica's size and \_\_\_\_\_ influence climate change

**20** \_\_\_\_\_ contributory to western wind

**21** Southern Oscillation Index based on air pressure can predict \_\_\_\_\_ in Australia

A Antarctic Circumpolar Current (ACC)

B katabatic winds

C rainfall

D temperature

E glaciers

F pressure

### **Questions 22-26**

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

Write your answer in box 22-26 on your answer sheet.

**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



Answers

**14. D**

**15. F**

**16. E**

**17. C**

**18. A**

**19. D**

**20. A**

**21. C**

**22. C**

23. A

24. C

25. C

26. C

TEST 70:

Grey Workers



A

Given the speed at which their workers are growing greyer, employers know surprisingly little about how productive they are. The general assumption is that the old are paid more in spite of, rather than because of, their extra productivity. That might partly explain why, when employers are under pressure to cut costs, they persuade the 55-year-olds to take early retirement. Earlier this year, Sun Life of Canada, an insurance company, announced that it was offering redundancy to all its British employees aged 50 or over “to bring in new blood”.

B

In Japan, says Mariko Fujiwara, an industrial anthropologist who runs a think-tank for Hakuhodo, Japan’s second-largest advertising agency, most companies are bringing down the retirement age from the traditional 57 to 50 or thereabouts – and in some cases, such as Nissan, to 45. More than perhaps anywhere else, pay in Japan is linked to seniority. Given that the

percentage of workers who have spent more than 32 years with the same employer rose from 11% in 1980 to 42% by 1994, it is hardly surprising that seniority-based wage costs have become the most intractable item on corporate profit-and-loss accounts.

## C

In Germany, Patrick Pohl, spokesman for Hoechst, expresses a widely held view: "The company is trying to lower the average age of the workforce. Perhaps the main reason for replacing older workers is that it makes it easier to 'defrost' the corporate culture. Older workers are less willing to try a new way of thinking. Younger workers are cheaper and more flexible." Some German firms are hampered from getting rid of older workers as quickly as they would like. At SGL Carbon, a graphite producer, the average age of workers has been going up not down. The reason, says the company's Ivo Lingnau, is not that SGL values older workers more. It is collective bargaining: the union agreement puts strict limits on the proportion of workers that may retire early.

## D

Clearly, when older people do heavy physical work, their age may affect their productivity. But other skills may increase with age, including many that are crucial for good management, such as an ability to handle people diplomatically, to run a meeting or to spot a problem before it blows up. Peter Hicks, who co-ordinates OECD work on the policy implications of ageing, says that plenty

of research suggests older people are paid more because they are worth more.

## E

And the virtues of the young may be exaggerated. “The few companies that have kept on older workers find they have good judgment and their productivity is good,” says Mr Peterson.

“Besides, their education standards are much better than those of today’s young high-school graduates.” Companies may say that older workers are not worth training, because they are reaching the end of their working lives: in fact, young people tend to switch jobs so frequently that offer the worst returns on training.

“The median age for employer-driven training is the late 40s and early 50s,” says Mr Hicks. “It goes mainly to managers.”

## F

Take away those seniority-based pay scales, and older workers may become a much more attractive employment proposition. But most companies (and many workers) are uncomfortable with the idea of reducing someone’s pay in later life – although workers on piece-fates often earn less over time. So retaining the services of older workers may mean employing them in new ways.

## G

One innovation, described in Mr Walker’s report on combating age barriers, was devised by IBM Belgium. Faced with the need to cut staff costs, and have decided to concentrate cuts on 55-60-year-olds, IBM set up a separate company called SkillTeam,

which re-employed any of the early retired who wanted to go on working up to the age of 60. An employee who joined SkillTeam at the age of 55 on a five-year contract would work for 58% of his time, over the full period, for 88% of his last IBM salary. The company offered services to IBM, thus allowing it to retain access to some of the intellectual capital it would otherwise have lost.

## H

The best way to tempt the old to go on working may be to build on such “bridge” jobs: part-time or temporary employment that creates a more gradual transition from full-time work to retirement. Mr Quinn, who has studied the phenomenon, finds that, in the United States, nearly half of all men and women who had been in full-time jobs in middle age moved into such “bridge” jobs at the end of their working lives. In general, it is the best-paid and worst-paid who carry on working: “There are”, he says, “two very different types of bridge jog-holders – those who continue working because they have to and those who continue working because they want to, even though they could afford to retire.”

## I

If the job market grows more flexible, the old may find more jobs that suit them. Often, they will be self-employed. Sometimes, they may start their own businesses: a study by David Storey of Warwick University found that, in Britain, 70% of businesses started by people over 55 survived, compared with an average of

only 19%. To coax the old back into the job market, work will not only have to pay. It will need to be more fun than touring the country in an Airstream trailer, or seeing the grandchildren, or playing golf. Only then will there be many more Joe Clarks.

#### Questions 1-4

Do the following statements agree with the information given in Reading Passage 3?

*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** Insurance company Sun Life of Canada made the decision that it would hire more Canadian employees rather than British ones in order to get fresh staffs.

**2** Unlike other places, employees in Japan get paid according to the years they are employed

**3** Elder workers are laid off by some German companies which are refreshing corporate culture

**4** according to Peter Hicks, companies pay older people more regardless of the contribution of they make.

#### Questions 5-6

Choose the correct letter, A, B, C, D, E.

*Write your answers in boxes 5-6 on your answer sheet.*

According to the passage, there are several advantages to hire elder people, please choose **TWO** from below:

- A their productivity is more superior than the young.
- B paid less compared with younger ones.
- C run fast when there is a meeting
- D has a better inter-person relationship
- E identify problems in an advanced time

### Questions 7-8

Choose the correct letter, A, B, C, D, E.

*Write your answers in boxes 7-8 on your answer sheet.*

According to Mr Peterson, Compared with the elder employee, young graduates have several weaknesses in the workplace, please choose TWO of them below:

- A they are not worth training.
- B their productivity is lower than counterparts.
- C they change work more often
- D their academic criteria is someway behind elders'.
- E they are normally high school graduates.

### Questions 9-13

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

*Write your answers in boxes 9-13 on your answer sheet.*

9 According to paragraph F, the firms and workers still hold the opinion that:

- A Older workers are more likely to attract other staff
- B people are not happy if pay gets lower in retiring age.
- C Older people have more retaining motivation than young people

- D young people often earn less for their piece-rates salary.
- 10 SkillTeam that has been founded by IBM conducted which of the following movement:
- A Ask all the old worker to continue their job on former working hours basis
  - B Carry on the action of cutting off the elder's proportion of employment
  - C Ask employees to work more hours in order to get extra pay
  - D Re-hire old employees and kept the salary a bit lower
- 11 Which of the followings is correct according to the research of Mr Quinn:
- A About 50% of all employees in America switched into 'bridge' jobs.
  - B Only the worst-paid continue to work.
  - C More men than women fell into the category of 'bridge' work.
  - D Some old people keep working for their motive rather than an economic incentive.
- 12 Which of the followings is correct according to David Storey:
- A 70% business is successful if hire more older people.
  - B Average success of a self-employed business is getting lower.
  - C Self-employed elder people are more likely to survive.
  - D Older people's working hours are more flexible.
- 13 What is the main purpose of the author in writing this passage?
- A there must be a successful retiring program for the old

- B order people should be correctly valued in employment
- C old people should offer more helping young employees grow.
- D There are more jobs in the world that only employ older people

Answers:

1. NOT GIVEN
2. TRUE
3. TRUE
4. FALSE
5. D
6. E
7. C
8. D
9. B
10. D
11. D
12. C
13. B

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#### TEST 71:

#### **Johnson's Dictionary**

For the century before Johnson's Dictionary was published in 1775, there had been concern about the state of the English

language. There was no standard way of speaking or writing and no agreement as to the best way of bringing some order to the 'chaos' of English spelling. Dr Johnson provided the solution.

There had, of course, been dictionaries in the past, the first of these being a little book of some 120 pages, compiled by a certain Robert Cawdray, published in 1604 under the title A Table Alphabetical! 'of hard usual English wordes'. Like the various dictionaries that came after it during the seventeenth century, Cawdray's tended to concentrate on 'scholarly' words; one function of the dictionary was to enable its student to convey an impression of fine learning.

Beyond the practical need to make order out of chaos, the rise of dictionaries is associated with the rise of the English middle class, who were anxious to define and circumscribe the various worlds to conquer - lexical as well as social and commercial. It is highly appropriate that Dr Samuel Johnson, the very model of an eighteenth-century literary man, as famous in his own time as in ours, should have published his dictionary at the very beginning of the heyday of the middle class.

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Johnson was a poet and critic who raised common sense to the heights of genius. His approach to the problems that had worried writers throughout the late seventeenth and early eighteenth centuries was intensely practical. Up until his time, the task of producing a dictionary on such a large scale had seemed impossible without the establishment of an academy to make

decisions about right and wrong usage Johnson decided he did not need an academy to settle arguments about language; he would write a dictionary himself; and he would do it single-handed. Johnson signed the contract for the Dictionary with the bookseller Robert Dosley at a breakfast held at the Golden Anchor Inn near Holbom Bar on 18 June 1764. He was to be paid £ 1.575 in instalments, and from this he took money to rent 17 Gough Square, in which he set up his 'dictionary workshop'.

James Boswell, his biographer described the garret where Johnson worked as 'fitted up like a counting house' with a long desk running down the middle at which the copying clerks would work standing up. Johnson himself was stationed on a rickety chair at an 'old crazy deal table' surrounded by a chaos of borrowed books. He was also helped by six assistants, two of whom died whilst the Dictionary was still in preparation.

The work was immense; filling about eighty large notebooks (and without a library to hand). Johnson wrote the definitions of over 40,000 words, and illustrated their many meanings with some 14,000 quotations drawn from English writing on every subject, from the Elizabethans to his own time. He did not expect to achieve complete originality. Working to a deadline, he had to draw on the best of all previous dictionaries, and to make his work one of heroic synthesis. In fact it was very much more. Unlike his predecessors Johnson treated English very practically,

as a living language, with many different shades of meaning. He adopted his definitions on the principle of English common law - according to precedent. After its publication, his Dictionary was not seriously rivalled for over a century.

After many vicissitudes the Dictionary was finally published on 15 April 1775. It was instantly recognised as a landmark throughout Europe. This very noble work.' wrote the leading Italian lexicographer; 'will be a perpetual monument of Fame to the Author, an Honour to his own Country in particular, and a general Benefit to the republic of Letters throughout Europe.' The fact that Johnson had taken on the Academies of Europe and matched them (everyone knew that forty French academics had taken forty years to produce the first French national dictionary) was cause for much English celebration.

Johnson had worked for nine years. 'with little assistance of the learned, and without any patronage of the great; not in the soft obscurities of retirement, or under the shelter of academic bowers, but amidst inconvenience and distraction, in sickness and in sorrow'. For all its faults and eccentricities his two-volume work is a masterpiece and a landmark, in his own words, 'setting the orthography, displaying the analogy, regulating the structures, and ascertaining the significations of English words'. It is the corner-stone of Standard English, an achievement which, in James Boswell's words, 'conferred stability on the language of his country'.

The Dictionary, together with his other writing, made Johnson famous and so well esteemed that his friends were able to prevail upon King George III to offer him a pension. From then on, he was to become the Johnson of folklore.

### Questions 1-3

*Choose THREE letters A-H.*

*Write your answers in boxes 1-3 on your answer sheet.*

**NB** Your answers may be given in any order.

*Which THREE of the following statements are true of Johnson's Dictionary?*

- A  It avoided all scholarly words.
- B  It was the only English dictionary in general use for 200 years.
- C  It was famous because of the large number of people involved.
- D  It focused mainly on language from contemporary texts.
- E  There was a time limit for its completion.
- F  It ignored work done by previous dictionary writers.
- G  It took into account subtleties of meaning.

H  Its definitions were famous for their originality.

### Questions 4-7

*Complete the summary.*

*Choose NO MORE THAN TWO WORDS from the passage for each answer.*

*Write your answers in boxes 4-7 on your answer sheet.*

In 1764 Dr Johnson accepted the contract to produce a dictionary. Having rented a garret, he took on a number of 4  who stood at a long central desk.

Johnson did not have a 5  available to him, but eventually produced definitions of in excess of 40,000 words written down in 80 large notebooks. On publication, the Dictionary was immediately hailed in many European countries as a landmark. According to his biographer, James Boswell, Johnson's principal achievement was to bring 6  to the English language. As a reward for his hard work, he was granted a 7  by the king.

### Questions 8-13

*Do the following statements agree with the information given in Reading Passage ?*

*In boxes 8-13 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

8  The growing importance of the middle classes led to an increased demand for dictionaries.

9  Johnson has become more well known since his death.

10  Johnson had been planning to write a dictionary for several years.

11  Johnson set up an academy to help with the writing of his Dictionary.

12  Johnson only received payment for his Dictionary on its completion.

13  Not all of the assistants survived to see the publication of the Dictionary.

### Answer

1. D, E, G IN ANY ORDER	8. TRUE
2. D, E, G IN ANY ORDER	9. FALSE
3. D, E, G IN ANY ORDER	10. NOT GIVEN

4. clerks / copying clerks	11. FALSE
5. library	12. FALSE
6. stability	13. TRUE
7. pension	

## TEST 72:

### Revolutions in Mapping

A Today, the mapmaker's vision is no longer confined to what the human eye can see. The perspective of mapmaking has shifted from the crow's nest of the sailing vessel, mountain top and airplane to 'new orbital heights. Radar, which bounces microwave radio signals off a given surface to create images of its contours and textures, can penetrate jungle foliage and has produced the first maps of the mountains of the planet Venus. And a combination of sonar and radar produces charts of the seafloor, putting much of Earth on the map for the first time. 'Suddenly it's a whole different world for us,' says Joel Morrison, chief of

geography at the U.S. Bureau of the Census, 'Our future as mapmakers-even ten years from now-is uncertain.'

**B** The world's largest collection of maps resides in the basement of the Library of Congress in Washington, D.C. The collection, consisting of up to 4,6 million map sheets and 63,000 atlases, includes magnificent bound collections of elaborate maps-the pride of the golden age of Dutch cartography\*. In the reading room scholars, wearing thin cotton g.loves to protect the fragi. le sheets, examine ancient maps with magnifying glasses. Across the room people sit at their computer screens, studying the latest maps, With their prodigious memories, computers are able to store data about people, places and environments-the stuff of maps-and almost instantly information is displayed on the screen in the desired geographic context, and at the dick of a button, a print-out of the map appears.

**C** Measuring the spherical Earth ranks as the first major milestone in scientific cartography. This was first achieved by the Greek astronomer Eratosthenes, a scholar at the famous Alexandrian Library in Egypt in the third century BC. He calculated the Earth's circumference as 25,200 miles, which was remarkably accurate. The longitudinal circumference is known today to be 24,860 miles.

**D** Building on the ideas of his predecessors, the astronomer and geographer Ptolemy, working in the second century AD, spelled out a system for organising maps according to grids of latitude

and longitude. Today, parallels of latitude are often spaced at intervals of 10 to 20 degrees and meridians at 15 degrees, and this is the basis for the width of modern time zones. Another legacy of Ptolemy's is his advice to cartographers to create maps to scale. Distance on today's maps is expressed as a fraction or ratio of the real distance. But mapmakers in Ptolemy's time lacked the geographic knowledge to live up to Ptolemy's scientific principles. Even now, when surveyors achieve accuracies down to inches and satellites can plot potential missile targets within feet, maps are not true pictures of reality.

E However, just as the compass improved navigation and created demand for useful charts, so the invention of the printing press in the 15th century put maps in the hands of more people, and took their production away from monks, who had tended to illustrate theology rather than geography. Ocean-going ships launched an age of discovery, enlarging both what could and needed to be mapped, and awakened an intellectual spirit and desire for knowledge of the world.

F Inspired by the rediscovered Ptolemy, whose writing had been preserved by Arabs after the sacking of the Alexandrian Library in AD 931, mapmakers in the 15th century gradually replaced theology with knowledge of faraway places, as reported by travelling merchants like Marco Polo.

G Gerhardus Mercator, the foremost shipmaker of the 16th century, developed a technique of arranging meridians and

parallels in such a way that navigators could draw straight lines between two points and steer a constant compass course between them. This distortion formula, introduced on his world map of 1569, created the 'Greenland problem'. Even on some standard maps to this day, Greenland looks as large as South America—one of the many problems when one tries to portray a round world on a flat sheet of paper. But the Mercator projection was so practical that it is still popular with sailors.

H Scientific mapping of the land came into its own with the achievements of the Cassini family—father, son, grandson and great-grandson. In the late 17th century, the Italian-born founder, Jean-Dominique, invented a complex method of determining longitude based on observations of Jupiter's moons. Using this technique, surveyors were able to produce an accurate map of France. The family continued to map the French countryside and his great grandson finally published their famous Cassini map in 1793 during the French Revolution. While it may have lacked the artistic appeal of earlier maps, it was the model of a social and geographic map showing roads, rivers, canals, towns, abbeys, vineyards, lakes and even windmills. With this achievement, France became the first country to be completely mapped by scientific methods.

I Mapmaking has come a long way since those days. Today's surveyors rarely go into the field without being linked to navigation satellites. Their handheld receivers are the most

familiar of the new mapping technologies, and the satellite system, developed and still operated by the US Defense Department, is increasingly used by surveyors. Even ordinary hikers, sailors and explorers can tap into it for data telling them where they are. Simplified civilian versions of the receivers are available for a few also the heart of electronic map displays available in some cars. Cartography is pressing on to cosmic frontiers, but its objective is, and always has been, to communicate a sense of 'here' in relation to 'there', however far away 'there' may be.

## QUESTIONS

**Questions 14–18** Choose the correct letter, A, B, C or D. Write the correct letter in boxes 14–18 on your answer sheet.

**14 According to the first paragraph, mapmakers in the 21st century**

A combine techniques to chart unknown territory.

B still rely on being able to see what they map.

---

C are now able to visit the darkest jungle .

D need input from experts in other fields.

**15 The Library of Congress offers an opportunity to**  
**A borrow from their collection of Dutch maps.**

B learn how to restore ancient and fragile maps.

C enjoy the atmosphere of the reading room.

D create individual computer maps to order.

**16 Ptolemy alerted his contemporaries to the importance of**

A measuring the circumference of the world.

B organising maps. to reflect accurate ratios of distance.

C working. out the distance between parallels of latitude.

D accuracy and predisionin mapping.

**17 The invention of the printing press**

A revitalised interest in scientific knowledge

B enabled maps to be produced more cheaply.

C changed the approach to mapmaking.

D ensured that the work of ptolemy was continued.

**18 The writer concludes by stating that**

A mapmaking has become too specialised.

B cartographers work in very harsh conditions.

C the fundamental aims of mapmaking remain unchanged.

D the possibilities of satellite mapping are infinite.

**Questions 19-21** Look at the following list of achievements  
**(Questions 19-21)** and the list of mapmakers below.

Match each achievement with the correct mapmaker, A, B, C or D.

Write the correct letter, A, B, C or D, in boxes **19-21** on your answer sheet.

***List of Mapmakers***

A Mercator

B Ptolemy

C Cassini family

D Eratosthenes



**19** came very close to accurately measuring the distance round the Earth

**20** produced maps showing man-made landmarks

**21** laid the foundation for our modern time zones

**Questions 22-26** Complete the summary below. Choose **NO**

**MORE THAN TWO WORDS** from the passage for each answer.

Write your answers in boxes **22-26** on your answer sheet.

Ancient maps allow us to see how we have come to make sense of the world. They also reflect the attitudes and knowledge of the day. The first great step in mapmaking took place

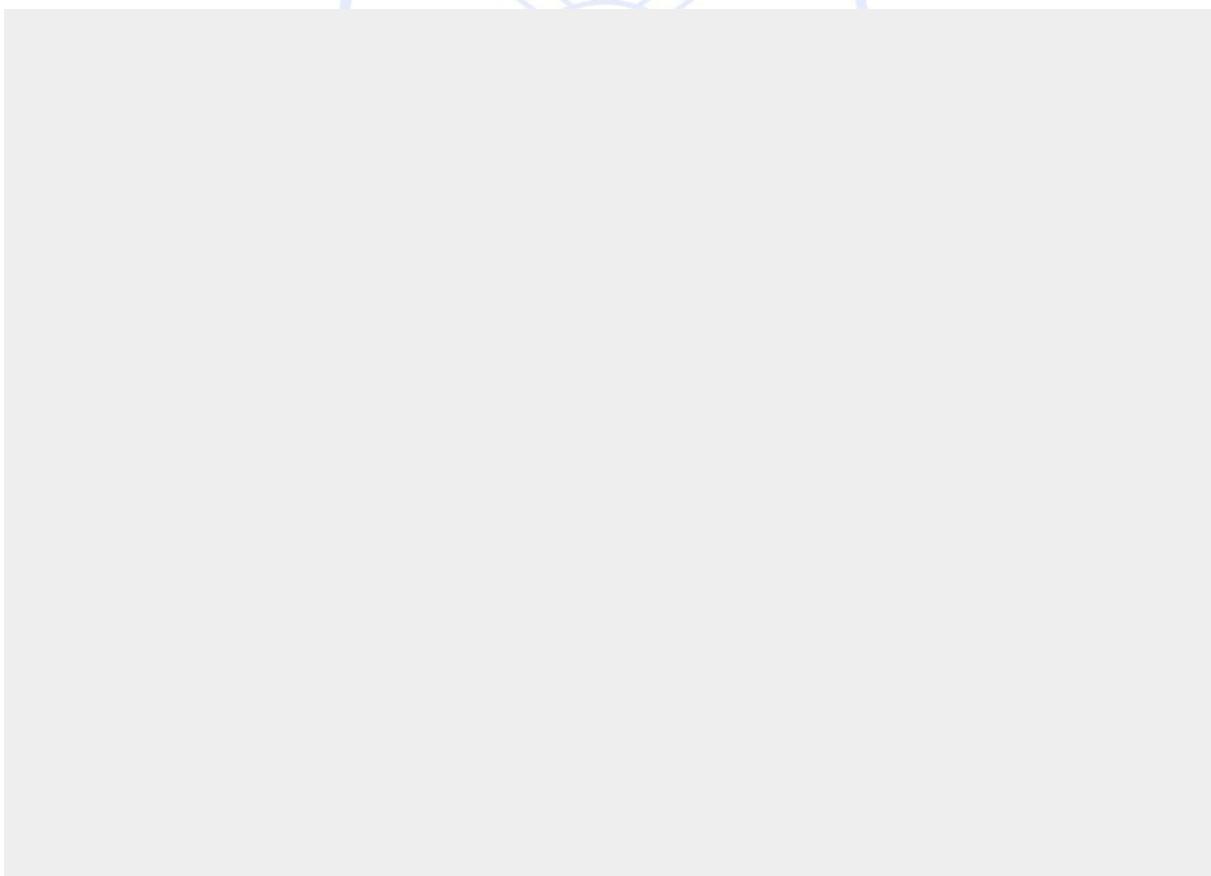
in **22** ..... in the 3rd century BC. Work continued in this tradition until the 2nd century AD but was then abandoned for over a thousand years, during which time maps were the

responsibility of 23 ..... rather than scientists.

Fortunately, however, the writings of 24 ..... had been kept, and interest in scientific mapmaking was revived as scholars sought to produce maps, inspired by the accounts of travellers.

These days, 25 ..... are vital to the creation of maps and radar has allowed cartographers to map areas beyond our immediate world. In addition, this high-tech equipment is not only used to map faraway places, but cheaper versions have also been developed for use in 26 ..... .

#### ANSWERS



- 14 A
- 15 D
- 16 B
- 17 C
- 18 C
- 19 D
- 20 C
- 21 B
- 22. Egypt
- 23. monks
- 24. Ptolemy
- 25. (navigation) satellites
- 26. (some) cars

### TEST 73:

#### The Beginning of Football!

##### A

Football as we now know it developed in Britain in the 19th century, but the game is far older than this. In fact, the term has historically been applied to games played on foot, as opposed to those played on horseback, so ‘football’ hasn’t always involved kicking a ball. It has generally been played by men, though at the end of the 17th century, games were played between married and single women in a town in Scotland. The married women regularly won.

**B**Ads by Ad.Plus

The very earliest form of football for which we have evidence is the ‘tsu’chu’, which was played in China and may date back 3,000 years. It was performed in front of the Emperor during festivities to mark his birthday. It involved kicking a leather ball through a 30-40 cm opening into a small net fixed onto long bamboo canes – a feat that demanded great skill and excellent technique.

**C**

Another form of the game, also originating from the Far East, was the Japanese ‘kemari’ which dates from about the fifth century and is still played today. This is a type of circular football game, a more dignified and ceremonious experience requiring certain skills, but not competitive in the way the Chinese game was, nor is there the slightest sign of struggle for possession of the ball. The players had to pass the ball to each other, in a relatively small space, trying not to let it touch the ground.

**D**

The Romans had a much livelier game, ‘harpastum’. Each team member had his own specific tactical assignment took a noisy interest in the proceedings and the score. The role of the feet was so small as scarcely to be of consequence. The game remained popular for 700 or 800 years, but, although it was taken to

England, it is doubtful whether it can be considered as a forerunner of contemporary football.

## E

The game that flourished in Britain from the 8th to the 19th centuries was substantially different from all the previously known forms – more disorganised, more violent, more spontaneous and usually played by an indefinite number of players. Frequently, the games took the form of a heated contest between whole villages. Kicking opponents were allowed, as in fact was almost everything else.

## F

There was tremendous enthusiasm for football, even though the authorities repeatedly intervened to restrict it, as a public nuisance. In the 14th and 15th centuries, England, Scotland and France all made football punishable by law, because of the disorder that commonly accompanied it, or because the well-loved recreation prevented subjects from practicing more useful military disciplines. None of these efforts had much effect.

## G

The English passion for football was particularly strong in the 16th century, influenced by the popularity of the rather better organised Italian game of 'calcio'. English football was as rough as ever, but it found a prominent supporter in the school headmaster Richard Mulcaster. He pointed out that it had positive educational value and promoted health and strength. Mulcaster

claimed that all that was needed was to refine it a little, limit the number of participants in each team and, more importantly, have a referee to oversee the game.

## H

The game persisted in a disorganised form until the early 19th century, when a number of influential English schools developed their own adaptations. In some, including Rugby School, the ball could be touched with the hands or carried; opponents could be tripped up and even kicked. It was recognised in educational circles that, as a team game, football helped to develop such fine qualities as loyalty, selflessness, cooperation, subordination and deference to the team spirit. A ‘games cult’ developed in schools and some form of football became an obligatory part of the curriculum.

## I

In 1863, developments reached a climax. At Cambridge University, an initiative began to establish some uniform standards and rules that would be accepted by everyone, but there were essentially two camps: the minority – Rugby School and some others – wished to continue with their own form of the game, in particular allowing players to carry the ball. In October of the same year, eleven London clubs and schools sent representatives to establish a set of fundamental rules to govern the matches played amongst them. This meeting marked the birth of the Football Association.

**J**

The dispute concerning kicking and tripping opponents and carrying the ball was discussed thoroughly at this and subsequent meetings, until eventually, on 8 December, the die-hard exponents of the Rugby style withdrew, marking a final split between rugby and football. Within eight years, the Football Association already had 50 member clubs, and the first football competition in the world was started – the FA Cup.

**Questions 1-7**

Reading Passage 1 has ten paragraphs A-J.

Choose the correct headings for paragraphs D-J from the list of headings below.

*Write the correct number i-x in boxes 1-7 on your answer sheet.*

**List of Headings**

- i Limited success in suppressing the game
- ii Opposition to the role of football in schools
- iii A way of developing moral values
- iv Football matches between countries
- v A game that has survived
- vi Separation into two sports
- vii Proposals for minor improvements
- viii Attempts to standardize the game
- ix Probably not an early version of football
- x A chaotic activity with virtually no rules

**Example      Paragraph C      Answer v**

- 1 Paragraph D
- 2 Paragraph E
- 3 Paragraph F
- 4 Paragraph G
- 5 Paragraph H
- 6 Paragraph I
- 7 Paragraph J

**Questions 8-13**

Complete each sentence with the correct ending A-L from the box below.

*Write the correct letter A-F in boxes 8-13 on your answer sheet.*

- 8 Tsu'chu
  - 9 Kemari
  - 10 Harpastum
  - 11 From the 8th centuries, football in the British Isles
  - 12 In the past, the authorities legitimately despised the football and acted on the belief that football.
  - 13 When it was accepted in academic settings, football.
- A was seen as something to be encouraged in the young.  
 B involved individual players having different responsibilities.  
 C was influenced by a game from another country.  
 D was a cooperative effort by all the players.

- E distracted people from more important activities.
- F was played by teams of a fixed size.
- G was less popular than it later became.
- H was often played by one community against another.
- I formed part of a celebration.

**ANSWERS:**

- 1. ix
- 2. x
- 3. i
- 4. vii
- 5. iii
- 6. viii
- 7. vi
- 8. I
- 9. D
- 10. B
- 11. H
- 12. E
- 13. A

**TEST 74: Eco-Resort Management**

- A. Ecotourism is often regarded as a form of nature-based tourism and has become an important alternative source of tourists. In addition to providing the traditional resort-leisure

product, it has been argued that ecotourism resort management should have a particular focus on best-practice environmental management, an educational and interpretive component, and direct and indirect contributions to the conservation of the natural and cultural environment (Ayala, 1996).

B. Couran Cove Island Resort is a large integrated ecotourism-based resort located south of Brisbane on the Gold Coast, Queensland, Australia. As the world's population becomes increasingly urbanised, the demand for tourist attractions which are environmentally friendly, serene and offer amenities of a unique nature, has grown rapidly. Couran Cove Resort, which is one such tourist attractions, is located on South Stradbroke Island, occupying approximately 150 hectares of the island. South Stradbroke Island is separated from the mainland by the Broadwater, a stretch of sea 3 kilometers wide. More than a century ago, there was only one Stradbroke Island, and there were at least four aboriginal tribes living and hunting on the island. Regrettably, most of the original island dwellers were eventually killed by diseases such as tuberculosis, smallpox and influenza by the end of the 19th The second ship wreck on the island in 1894, and the subsequent destruction of the ship (the Cambus Wallace) because it contained dynamite, caused a large crater in the sandhills on Stradbroke Island. Eventually, the ocean broke through the weakened land form and Stradbroke became

two islands. Couran Cove Island Resort is built on one of the world's few naturally-occurring sand lands, which is home to a wide range of plant communities and one of the largest remaining remnants of the rare Livistona rainforest left on the Gold Coast. Many mangrove and rainforest areas, and Melaleuca Wetlands on South Stradbroke Island (and in Queensland) have been cleared, drained or filled for residential, industrial, agricultural or urban development in the first half of the 20th century. Farmer and graziers finally abandoned South Stradbroke Island in 1939 because the vegetation and the soil conditions there were not suitable for agricultural activities.

### SUSTAINABLE PRACTICES OF COURAN COVE RESORT

Being located on an offshore island, the resort is only accessible by means of water transportation. The resort provides hourly ferry service from the marina on the mainland to and from the island. Within the resort, transport modes include walking trails, bicycle tracks and the beach train. The reception area is the counter of the shop which has not changed in 8 years at least. The accommodation is an octagonal "Bure". These are large rooms that are clean but! The equipment is tired and in some cases just working. Our ceiling fan only worked on high speed for example. Beds are hard but clean, there is television, radio, an old air conditioner and a small fridge. These "Bures" are right on

top of each other and night noises do carry so be careful what you say and do. The only thing is the mosquitos but if you forget to bring mosquito repellent they sell some on the island.

As an ecotourism-based resort, most of the planning and development of the attraction has been concentrated on the need to co-exist with the fragile natural environment of South Stradbroke Island to achieve sustainable development.

### WATER AND ENERGY MANAGEMENT

C. South Stradbroke Island has groundwater at the centre of the island, which has a maximum height of 3 metres above sea level. The water supply is recharged by rainfall and is commonly known as an unconfined freshwater aquifer. Couran Cove Island Resort obtains its water supply by tapping into this aquifer and extracting it via a bore system. Some of the problems which have threatened the island's freshwater supply include pollution, contamination and over-consumption. In order to minimise some of these problems, all laundry activities are carried out on the mainland. The resort considers washing machines as onerous to the island's freshwater supply, and that the detergents contain a high level of phosphates which are a major source of water pollution. The resort uses LPG-power generation rather than a diesel-powered plant for its energy supply, supplemented by

wind turbine, which has reduced greenhouse emissions by 70% of diesel-equivalent generation methods. Excess heat recovered from the generator is used to heat the swimming pool. Hot water in the eco-cabins and for some of the resort's vehicles are solar-powered. Water efficient fittings are also installed in showers and toilets. However, not all the appliances used by the resort are energy efficient, such as refrigerators. Visitors who stay at the resort are encouraged to monitor their water and energy usage via the in-house television system, and are rewarded with prizes (such as a free return trip to the resort) accordingly if their usage level is low.

## CONCLUDING REMARKS

D. We examined a case study of good management practice and a pro-active sustainable tourism stance of an eco-resort. In three years of operation, Couran Cove Island Resort has won 23 international and national awards, including the 2001 Australian Tourism Award in the 4-Star Accommodation category. The resort has embraced and has effectively implemented contemporary environmental management practices. It has been argued that the successful implementation of the principles of sustainability should promote long-term social, economic and environmental benefits, while ensuring and enhancing the prospects of continued viability for the tourism enterprise. Couran Cove Island

Resort does not conform to the characteristics of the ResortDevelopmentSpectrum, as proposed by Prideaux (2000). According to Prideaux, the resort should be at least at Phase 3 of the model (the National tourism phase), which describes an integrated resort providing 3-4 star hotel-type accommodation. The primary tourist market in Phase 3 of the model consists mainly of interstate visitors. However, the number of interstate and international tourists visiting the resort is small, with the principal visitor markets comprising locals and residents from nearby towns and the Gold Coast region. The carrying capacity of Couran Cove does not seem to be of any concern to the Resort management. Given that it is a private commercial ecotourist enterprise, regulating the number of visitors to the resort to minimize damage done to the natural environment on South Stradbroke Island is not a binding constraint. However, the Resort's growth will eventually be constrained by its carrying capacity, and quantity control should be incorporated in the management strategy of the resort.

### **Questions 1-5**

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

Write your answers in boxes 1-5 on your answer sheet.

#### **1. The Stradbroke became two islands**

- A. by an intended destruction of the ship of the Cambus

Wallace

- B. by an explosion of dynamite on a ship and following nature erosion
- C. by the movement sandhills on Stradbroke Island
- D. by the volcanic eruption on island

**2. Why are laundry activities for the resort carried out on the mainland**

- A. In order to obtain its water supply via a bore system
- B. In order to preserve the water and anti-pollution
- C. In order to save the cost of installing onerous washing machines
- D. In order to reduce the level of phosphates in water around

**3. What is the major water supplier in South Stradbroke Island is by**

- A. desalinizing the sea water
- B. collecting the rainfall
- C. transporting from the mainland
- D. boring ground water

**4. What is applied for heating water on Couran Cove Island**

**Resort**

- A. the LPG-power
- B. a diesel-powered plant
- C. the wind power
- D. the solar-power

**5. What does, as the managers of resorts believe, the prospective future focus on**

- A. more awards of for resort's accommodation
- B. sustainable administration and development in a long run
- C. Economic and environmental benefits for the tourism enterprise
- D. successful implementation the Resort Development Spectrum

**Questions 6-10**

Complete the following summary using **NO MORE THAN TWO WORDS** from the Reading Passage for each answer.

Write your answers in boxes 6-10 on your answer sheet.

Being located away from the mainland, tourists can attain the resort only by 6 ..... in a regular service. Within the resort, transports include trails for walking or tracks for both 7

..... and the beach train. The on-island equipment is old-fashioned which is barely working such as the 8  
 ..... overhead. There is television, radio, an old 9  
 ..... and a small fridge. And you can buy the repellent for 10 ..... if you forget to bring some.

### Questions 11-13

Choose THREE correct letters among, A-E.

Write your answers in boxes 11-13 on your answer sheet.

What is true as to the contemporary situation of Couran Cove Island Resort in the last paragraph

- 
- A. Couran Cove Island Resort goes for more eco-friendly practices.
  - B. The accommodation standard only conforms to the Resort Development Spectrum of Phase 3.
  - C. Couran Cove Island Resort should raise the accommodation standard and build more facilities.
  - D. The principal group visiting the resort is international tourists.
  - E. Its carrying capacity will restrict the future business' expansion.

ANSWERS:

1. B
2. B
3. D
4. D
5. B
6. ferry
7. bicycle
8. fan/ceiling fan
9. air conditioner
10. mosquitos/mosquito
11. 12. & 13. A, C, E [in any order]

## TEST 75:

### Rubik's Cube - How the puzzle achieved success

Erno Rubik first studied sculpture and then later architecture in Budapest, where he went on to become a teacher of interior design. It was while he was working as a teacher that he began the preliminary work on an invention that he called the 'Magic Cube'.

Rubik was inspired by geometric puzzles such as the Chinese tangram, a puzzle consisting of various triangles, a square and a parallelogram which can be combined to create different shapes and figures. However, unlike the tangram, which is two-dimensional, Rubik was more interested in investigating how

three-dimensional forms, such as the cube, could be moved and combined to produce other forms.

His design consisted of a cube made up of layers of individual smaller cubes, and each smaller cube could be turned in any direction except diagonally. To ensure that the cubes could move independently, without falling apart, Rubik first attempted to join them together using elastic bands. However, this proved to be impossible, so Rubik then solved the problem by assembling them using a rounded interior. This permitted them to move smoothly and easily. He experimented with different ways of marking the smaller cubes, but ended up with the simple solution of giving a different colour to each side. The object was to twist the layers of small cubes so that each side of the large cube was an identical colour.

Rubik took out a patent for the Cube in 1977 and started manufacturing it in the same year. The Cube came to the attention of a Hungarian businessman, Tibor Laczi, who then demonstrated it at the Nuremberg Toy Fair. When British toy expert Tom Kremer saw it, he thought it was amazing and he persuaded a manufacturer, Ideal Toys, to produce 1 million of them in 1979. Ideal Toys renamed the Cube after the toy's inventor, and in 1980, Rubik's Cube was shown at toy fairs all over the world. It won that year's prize in Germany for Best Puzzle. Rubik's Cube is believed to be the world's best-selling

puzzle; since its invention, more than 300 million Cubes have been sold worldwide.

### Questions 1-7

*Choose NO MORE THAN TWO WORDS from the passage for each answer.*

#### Rubik's Cube

Originally named the 1  , Rubik's Cube consists of a number of smaller cubes organised in 2  .

The smaller cubes can be twisted in almost any way, though not 3  . The Cube's 4  is shaped in a way that allows the smaller cubes to move smoothly. Each side of the smaller cubes has a different colour, and the aim of the puzzle is to organise the cubes so that the colours on the sides of the large cube are 5  .

The manufacturers of the puzzle changed the name of the Cube to the name of its 6  it has now sold more than any other 7  in the world.

#### Answer

1. Magic Cube	5. identical
---------------	--------------

2. layers	6. inventor
3. diagonally	7. puzzle
4. interior	

## TEST 76:

### The Romantic Poets

A.

One of the most evocative eras in the history of poetry must surely be that of the Romantic Movement. During the late eighteenth and early nineteenth centuries, a group of poets created a new mood in literary objectives, casting off their predecessors' styles in favour of a gripping and forceful art which endures with us to this day.

Five poets emerged as the main constituents of this movement – William Wordsworth, Samuel Taylor Coleridge, George Gordon Byron, Percy Bysshe Shelley and John Keats. The strength of their works lies undoubtedly in the power of their imagination. Indeed, imagination was the most critical attribute of the Romantic poets. Each poet had the ability to portray remarkable images and visions, although differing to a certain degree in their intensity

and presentation. Nature, mythology and emotion were of great importance and were used to explore the feelings of the poet himself.

B.

The lives of the poets often overlapped and tragedy was typical in most of them. Byron was born in London in 1788. The family moved to Aberdeen soon after, where Byron was brought up until he inherited the family seat of Newstead Abbey in Nottinghamshire from his great uncle. He graduated from Cambridge University in 1808 and left England the following year to embark on a tour of the Mediterranean. During this tour, he developed a passion for Greece which would later lead to his death in 1824. He left for Switzerland in 1816 where he was introduced to Shelley.

C.

Shelley was born to a wealthy family in 1792. He was educated at Eton and then went on to Oxford. Shelley was not happy in England, where his colourful lifestyle and unorthodox beliefs made him unpopular with the establishment. In 1818 he left for Italy, where he was reunited with Byron. However, the friendship was tragically brought to an end in July 1822, when Shelley was drowned in a boating accident off the Italian coast. In a somewhat dramatic form, Shelley's body was cremated on the beach, witnessed by a small group of friends, including Byron.

D.

Historically, Shelley and Byron are considered to have been the most outspoken and radical of the Romantic poets. By contrast, Wordsworth appears to have been of a pleasant and acceptable personality, even receiving the status of Poet Laureate in 1843. He was born in 1770 in Cockermouth, Cumbria. By the time he entered his early teens, both his parents had died. As he grew older, Wordsworth developed a passion for writing. In 1798 Wordsworth published a collection of poems with Coleridge, whom he had met, a few years earlier, when he settled in Somerset with his sister Dorothy. He married in 1802 and, as time passed, he deserted his former political views and became increasingly acceptable to popular society. Indeed, at the time of his death in the spring of 1850, he had become one of the most sought-after poets of his time.

E.

Wordsworth shared some of the years at Dove Cottage in Somerset with his friend and poetical contemporary, Coleridge. Coleridge was born in Devon in 1772. He was a bright young scholar but never achieved the same prolific output of his fellow Romantic poets. In 1804 he left for a position in Malta for three years. On his return, he separated from his wife and went to live with the Wordsworths, where he produced a regular periodical. With failing health, he later moved to London. In 1816 he went to stay with a doctor and his family. He remained with

them until his death in 1834. During these latter years, his poetry was abandoned for other forms of writing equally outstanding in their own right.

F.

Perhaps the most tragic of the Romantic poets was Keats. Keats was born in London in 1795. Similar to Wordsworth, both his parents had died by his early teens. He studied as a surgeon, qualifying in 1816. However, poetry was his great passion and he decided to devote himself to writing. For much of his adult life, Keats was in poor health and fell gravely ill in early 1820. He knew he was dying and in the September of that year, he left for Rome hoping that the more agreeable climate might ease his suffering.

G.

Keats died of consumption in February 1821 at the age of twenty-five. It is said that such a tragedy often accompanies those of outstanding artistic genius. We can only wonder at the possible outcome had they all lived to old age. Perhaps even Byron and Shelley would have mellowed with the years, like Wordsworth. However, the contribution to poetry by all five writers is immeasurable. They introduced the concepts of individualism and imagination, allowing us to explore our own visions of beauty without retribution. We are not now required to

restrain our thoughts and poetry to that of the socially acceptable.

*Questions 27-32*

Do the following statements agree with the information given in Reading Passage 3?

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

27. The Romantic Movement lasted for more than a century.

28. The Romantic poets adopted a style dissimilar to that of poets who had come before them.

29. Unfortunately, the works of the Romantics had no lasting impression on art.

30. The Romantics had no respect for any style of poetry apart from their own.

31. The Romantics were gifted with a strong sense of imagination.

32. Much of the Romantics' poetry was inspired by the natural world.

*Questions 33-39*

Complete the table below.

Write NO MORE THAN THREE WORDS for each answer.

		Date of birth	Education	
Byron	1788		Cambridge University	went on a journey around; came to love 34.....
Shelley	1972	Eton and Oxford University		some people disapproved of 35..... and the beliefs he held
Wordsworth	1770			became more accepted when he changed his 36.....
Coleridge	1772	bright scholar		his 37 .....was smaller than the other

Romantic poets'; left the  
Wordsworths due to  
38.....

## *Question 40*

## Complete the sentence.

**Choose NO MORE THAN THREE WORDS from the passage for the answer.**

40. According to the writer, the Romantic poets left us with the ideas of.....

## ANSWERS:

- |                         |                                   |
|-------------------------|-----------------------------------|
| 27. FALSE               | 34. Greece                        |
| 28. TRUE                | 35. his (colourful) lifestyle     |
| 29. FALSE               | 36. political views               |
| 30. NOT GIVEN           | 37. output                        |
| 31. TRUE                | 38. failing health                |
| 32. TRUE                | 39. climate                       |
| 33. (the) Mediterranean | 40. individualism and imagination |

**TEST 77:****Talc Powder**

*Peter Rrigg discovers how talc from Luzenac's Trimouns in France find its way into food and agricultural products—from chewing gum to olive oil.*

High in the French Pyrenees, some 1,700m above sea level, lies Trimouns, a huge deposit of hydrated magnesium silicate - talc to you and me. Talc from Trimouns, and from ten other Luzenac mines across the globe, is used in the manufacture of a vast array of everyday products extending from paper, paint and plaster to cosmetics, plastics and car tyres. And of course there is always talc's best known end use: talcum powder for babies' bottoms. But the true versatility of this remarkable mineral is nowhere better displayed than in its sometimes surprising use in certain niche markets in the food and agriculture industries.

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Take, for example, the chewing gum business. Every year, Talc de Luzenac France—which owns and operates the Trimouns mine and is a member of the international Luzenac Group (part of Rio Tinto minerals)—supplies about 6,000 tones of talc to chewing gum manufacturers in Europe. “We’ve been selling to this sector of the market since the 1960s,” says Laurent Fournier, sales manager in Luzenac’s Specialties business unit in Toulouse. “Admittedly, in terms of our total annual sales of talc, the amount

we supply to chewing gum manufacturers is relatively small, but we see it as a valuable niche market: one where customers place a premium on securing supplies from a reliable, high quality source. Because of this, long term allegiance to a proven supplier is very much a feature of this sector of the talc market."Switching sources—in the way that you might choose to buy, say, paperclips from Supplier A rather than from Supplier B—is not an easy option for chewing gum manufacturers,"Fournier says. "The cost of reformulating is high, so when customers are using a talc grade that works, even if it's expensive, they are understandably reluctant to switch."

But how is talc actually used in the manufacture of chewing gum? Patrick Delord, an engineer with a degree in agronomics, who has been with Luzenac for 22 years and is now senior market development manager, Agriculture and Food, in Europe, explains that chewing gums has four main components. "The most important of them is the gum base,"he says. "It's the gum base that puts the chew into chewing gum. It binds all the ingredients together, creating a soft, smooth texture. To this the manufacturer then adds sweeteners, softeners and flavourings. Our talc is used as a filler in the gum base. The amount varies between, say, ten and 35 per cent, depending on the type of gum. Fruit flavoured chewing gum, for example, is slightly acidic and would react with the calcium carbonate that the manufacturer

might otherwise use as a filler. Talc, on the other hand, makes an ideal filler because it's non-reactive chemically. In the factory, talc is also used to dust the gum base pellets and to stop the chewing gum sticking during the lamination and packing process,"Delord adds.

The chewing gum business is, however, just one example of talc's use in the food sector. For the past 20 years or so, olive oil processors in Spain have been taking advantage of talc's unique characteristics to help them boost the amount of oil they extract from crushed olives. According to Patrick Delord, talc is especially useful for treating what he calls "difficult" olives. After the olives are harvested-preferably early in the morning because their taste is better if they are gathered in the cool of the day - they are taken to the processing plant. There they are crushed and then stirred for 30-45 minutes. In the old days, the resulting paste was passed through an olive press but nowadays it's more common to add water and centrifuge the mixture to separate the water and oil from the solid matter. The oil and water are then allowed to settle so that the olive oil layer can be decanted off and bottled. "Difficult" olives are those that are more reluctant than the norm to yield up their full oil content. This may be attributable to the particular species of olive, or to its water content and the time of year the olives are collected—at the beginning and the end of the season their water content is often

either too high or too low. These olives are easy to recognize because they produce a lot of extra foam during the stirring process, a consequence of an excess of a fine solid that acts as a natural emulsifier. The oil in this emulsion is lost when the water is disposed of. Not only that, if the waste water is disposed of directly into local fields—often the case in many smaller processing operations—the emulsified oil may take some time to biodegrade and so be harmful to the environment.

“If you add between a it absorbs the half and two percent of talc by weight during the stirring process, it absorbs the natural emulsifier in the olives and so boosts the amount of oil you can extract,” says Delord. “In addition, talc’s flat, platey’ structure helps increase the size of the oil droplets liberated during stirring, which again improves the yield. However, because talc is chemically inert, it doesn’t affect the colour, taste, appearance or composition of the resulting olive oil.”

If the use of talc in olive oil processing and in chewing gum is long established, new applications in the food and agriculture industries are also constantly being sought by Luzenac. One such promising new market is fruit crop protection, being pioneered in the US. Just like people, fruit can get sunburned. In fact, in very sunny regions up to 45 percent of atypical crop can be affected by heat stress and sunburn. However, in the case of fruit, it’s not

so much the ultra violet rays which harm the crop as the high surface temperature that the sun's rays create.

To combat this, farmers normally use either chemicals or spray a continuous fine canopy of mist above the fruit trees or bushes.

The trouble is, this uses a lot of water—normally a precious commodity in hot, sunny areas—and it is therefore expensive.

What's more, the ground can quickly become waterlogged." So our idea was to coat the fruit with talc to protect it from the sun," says Greg Hunter, a marketing specialist who has been with Luzenac for ten years. "But to do this, several technical challenges had first to be overcome. Talc is very hydrophobic: it doesn't like water. So in order to have a viable product we needed a wettable powder—something that would go readily into suspension so that it could be sprayed onto the fruit. It also had to break the surface tension of the cutin (the natural waxy, waterproof layer on the fruit) and of course it had to wash off easily when the fruit was harvested. No-one's going to want an apple that's covered in talc."

Initial trials in the state of Washington in 2003 showed that when the product was sprayed onto Granny Smith apples, it reduced their surface temperature and lowered the incidence of sunburn by up to 60 per cent. Today the new product, known as Invelop Maximum SPF, is in its second commercial year on the US market. Apple growers are the primary target although Hunter believes grape growers represent another sector with long term potential.

He is also hopeful of extending sales to overseas markets such as Australia, South America and southern Europe.

### Questions 1-6

*Use the information in the passage to match each use of talc power with correct application from A, B or C.*

*Write the appropriate letters A-C in boxes 1-6 on your answer sheet.*

**NB** you may use any letter more than once

A Chewing gum manufacture

B Olive oil extraction

C Fruit crop protection

- 1  Talc is used to prevent foaming.
- 2  Talc is used to prevent stickiness.
- 3  Talc is used to boost production.
- 4  Talc is used as a filler to provide a base.
- 5  Talc is used to prevent sunburn.
- 6  Talc is used to help increase the size of the product.

### Questions 7-12

*Complete the following summary below using NO MORE THAN TWO WORDS from the Reading Passage for each answer.*

*Write your answers in boxes 7-12 on your answer sheet.*

The use of talc powder in the olive oil industry in Spain has been around for 7  years. It is extremely useful in dealing with “difficult” olives which often produce a lot of 8  due to the high content of solid matter.

The traditional method of oil extraction used in some smaller plants often produces 9 , which contains emulsified oil, and if it is directly disposed of, it may be 10  to the environment, because it cannot 11 . But adding talc powder can absorb the emulsifier and increase the production, because the size of oil 12  grows.

### Questions 13-14

*Answer the questions below using NO MORE THAN THREE WORDS from the passage for each answer.*

*Write your answers in boxes 13-14 on your answer sheet.*

13. What are the last two stages of chewing gum manufacturing process?

14. Which group of farmers does Invelop intend to target next?

### Answer

1. B	8. foam / extra foam
------	----------------------

2. A	9. waste water
3. B	10. harmful
4. A	11. biodegrade
5. C	12. droplets
6. B	13. lamination and packing
7. 20	14. grape growers

### TEST 78:

#### Bricks – The Versatile Building Material

Bricks are one of the oldest known building materials dating back to 7000 BCE. The oldest found were sun-dried mud bricks in southern Turkey and these would have been standard in those days. Although sun-dried mud bricks worked reasonably well, especially in moderate climates, fired bricks were found to be more resistant to harsher weather conditions and so fired bricks are much more reliable for use in permanent buildings. Fired brick are also useful in hotter climates, as they can absorb any heat generated throughout the day and then release it at night. The Romans also distinguished between the bricks they used that were dried by the sun and air and the bricks that were fired in a

kiln. The Romans were real brick connoisseurs. They preferred to make their bricks in the spring and hold on to their bricks for two years, before they were used or sold. They only used clay that was whitish or red for their bricks. The Romans passed on their skills around their sphere of influence and were especially successful at using their mobile kilns to introduce kiln-fired bricks to the whole of the Roman Empire.

During the twelfth century, bricks were introduced to northern Germany from northern Italy. This created the 'brick Gothic period,' which was a reduced style of Gothic architecture previously very common in northern Europe. The buildings around this time were mainly built from fired red clay bricks. The brick Gothic period can be categorised by the lack of figural architectural sculptures that had previously been carved in stone, as the Gothic figures were impossible to create out of bulky bricks at that time.

Bricks suffered a setback during the Renaissance and Baroque periods, with exposed brick walls becoming unpopular and brickwork being generally covered by plaster. Only during the mid-eighteenth century did visible brick walls again regain some popularity.

Bricks today are more commonly used in the construction of buildings than any other material, except wood. Brick architecture is dominant within its field and a great industry has developed and invested in the manufacture of many different types of bricks

of all shapes and colours. With modern machinery, earth moving equipment, powerful electric motors and modern tunnel kilns, making bricks has become much more productive and efficient. Bricks can be made from a variety of materials, the most common being clay, but they can also be made of calcium silicate and concrete.

Good quality bricks have major advantages over stone as they are reliable, weather resistant and can tolerate acids, pollution and fire. They are also much cheaper than cut stonework. Bricks can be made to any specification in colour, size and shape, which makes them easier to build with than stone. On the other hand, there are some bricks that are more porous and therefore more susceptible to damage from dampness when exposed to water. For best results in any construction work, the correct brick must be chosen in accordance with the job specifications.

Today, bricks are mainly manufactured in factories, usually employing one of three principal methods – the soft mud process, the stiff mud process and the dry clay process. In the past, bricks were largely manufactured by hand, and there are still artisanal companies that specialise in this product. The process involves putting the clay, water and additives into a large pit, where it is all mixed together by a tempering wheel, often still moved by horse power. Once the mixture is of the correct consistency, the clay is removed and pressed into moulds by hand. To prevent the brick from sticking to the mould, the brick is

coated in either sand or water, though coating a brick with sand gives an overall better finish to it. Once shaped, the bricks are laid outside to dry by air and sun for three to four days. If these bricks left outside for the drying process are exposed to a shower, the water can leave indentations on the brick, which, although not affecting the strength of the brick, is considered very undesirable. After drying, the bricks are then transferred to the kiln for firing and this creates the finished product. Bricks are now more generally made by manufacturing processes using machinery. This is a large-scale effort and produces bricks that have been fired in patent kilns.

Today's bricks are also specially designed to be efficient at insulation. If their composition is correct and their laying accurate, a good brick wall around a house can save the occupants a significant amount of money. This is primarily achieved today through cavity wall insulation. Insulating bricks are built in two separate leaves, as they are called in the trade. The gap between the inner and outer leaves of brickwork depends on the type of insulation used, but there should be enough space for a gap of twenty millimetres between the insulating material in the cavity and the two leaves on either side. The air in these gaps is an efficient insulator by itself. Cavity walls have also replaced solid walls, because they are more resistant to rain penetration. Because two leaves are necessary, a strong brick manufacturing

industry is essential, so that enough good quality insulating bricks are plentifully available.

### Questions 1-5

Do the following statements agree with the information given in the text?

*In boxes 1-5 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** Fired bricks are not efficient in countries with hot weather, as they absorb too much heat.

**2** Roman brick production was determined by which season it was.

**3** The bricks that led to the brick Gothic period in northern Germany were popular with house builders.

**4** Buildings showing brickwork were generally not liked during the Renaissance.

**5** Some types of bricks can soak up too much water due to their absorbent qualities.

### Questions 6-11

Complete the flow chart below.

Write **NO MORE THAN TWO WORDS** from the text for each answer.

*Write your answers in boxes 6-11 on your answer sheet.*

## Making Hand-made Bricks

Combine the 6....., water and other ingredients with  
a 7..... to the desired consistency.



Using the hand, fill 8..... with the mixture-coat  
with 9..... (provides a better finish) or water to prevent  
stickiness.



Dry in the sun; try to avoid rain, which will cause marks in the  
bricks – this will no affect the bricks' 10.....

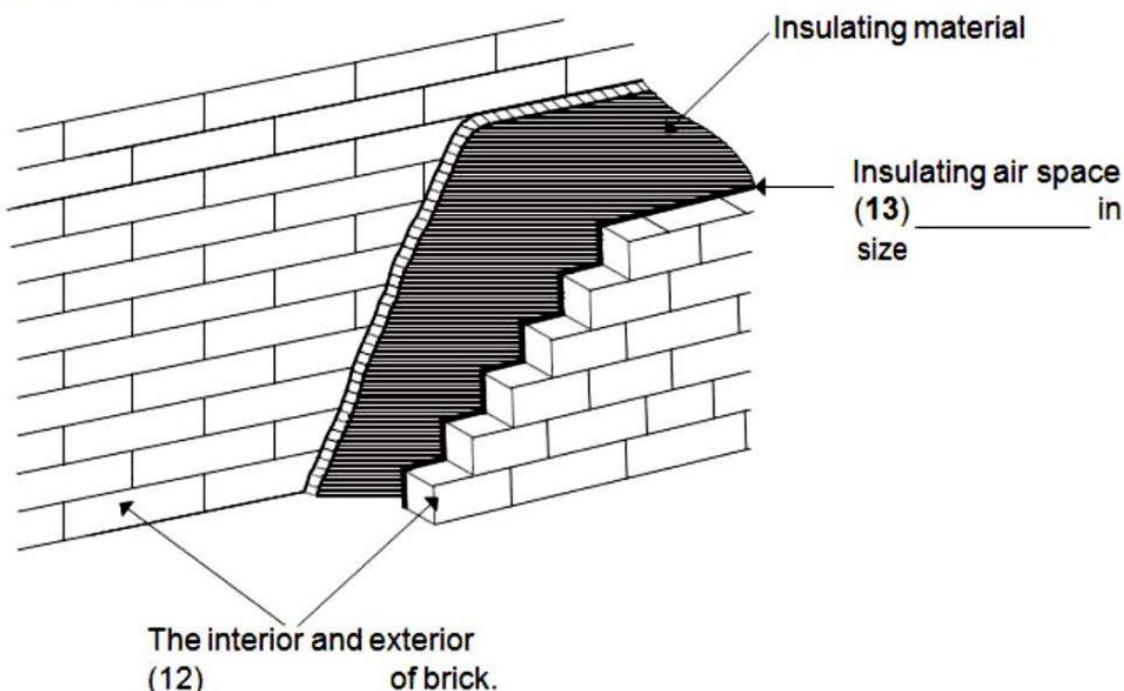
Questions 12 and 13

Label the diagram below.

Write **NO MORE THAN TWO WORDS AND/OR A NUMBER** from  
the text for each answer.

*Write your answers in boxes 12 and 13 on your answer sheet.*

### Cavity Wall Insulation



## Passage 1

1. FALSE
2. TRUE
3. NOT GIVEN
4. TRUE
5. TRUE
6. clay
7. tempering wheel
8. moulds
9. sand
10. strength
11. kiln
12. leaves
13. 20 kilometers

**ANSWERS:****TEST 79:**

### The History of Glass

From our earliest origins, man has been making use of glass.

Historians have discovered that a type of natural glass - obsidian - formed in places such as the mouth of a volcano as a result of the intense heat of an eruption melting sand - was first used as tips for spears. Archaeologists have even found evidence of man-made glass which dates back to 4000 BC; this took the form of

glazes used for coating stone beads. It was not until 1500 BC, however, that the first hollow glass container was made by covering a sand core with a layer of molten glass.

Glass blowing became the most common way to make glass containers from the first century BC. The glass made during this time was highly coloured due to the impurities of the raw material. In the first century AD, methods of creating colourless glass were developed, which was then tinted by the addition of colouring materials. The secret of glass making was taken across Europe by the Romans during this century. However, they guarded the skills and technology required to make glass very closely, and it was not until their empire collapsed in 476 AD that glass-making knowledge became widespread throughout Europe and the Middle East. From the 10th century onwards, the Venetians gained a reputation for technical skill and artistic ability in the making of glass bottles, and many of the city's craftsmen left Italy to set up glassworks throughout Europe.

A major milestone in the history of glass occurred with the invention of lead crystal glass by the English glass manufacturer George Ravenscroft (1632-1683). He attempted to counter the effect of clouding that sometimes occurred in blown glass by introducing lead to the raw materials used in the process. The new glass he created was softer and easier to decorate, and had

a higher refractive index, adding to its brilliance and beauty, and it proved invaluable to the optical industry. It is thanks to Ravenscroft's invention that optical lenses, astronomical telescopes, microscopes and the like became possible.

In Britain, the modern glass industry only really started to develop after the repeal of the Excise Act in 1845. Before that time, heavy taxes had been placed on the amount of glass melted in a glasshouse, and were levied continuously from 1745 to 1845. Joseph Paxton's Crystal Palace at London's Great Exhibition of 1851 marked the beginning of glass as a material used in the building industry. This revolutionary new building encouraged the use of glass in public, domestic and horticultural architecture. Glass manufacturing techniques also improved with the advancement of science and the development of better technology.

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From 1887 onwards, glass making developed from traditional mouth-blowing to a semi-automatic process, after factory-owner HM Ashley introduced a machine capable of producing 200 bottles per hour in Castleford, Yorkshire, England - more than three times quicker than any previous production method. Then in 1907, the first fully automated machine was developed in the USA by Michael Owens - founder of the Owens Bottle Machine

Company (later the major manufacturers Owens- Illinois) - and installed in its factory. Owens' invention could produce an impressive 2,500 bottles per hour Other developments followed rapidly, but it was not until the First World War when Britain became cut off from essential glass suppliers, that glass became part of the scientific sector. Previous to this, glass had been seen as a craft rather than a precise science.

Today, glass making is big business. It has become a modern, hi-tech industry operating in a fiercely competitive global market where quality, design and service levels are critical to maintaining market share. Modern glass plants are capable of making millions of glass containers a day in many different colours, with green, brown and clear remaining the most popular. Few of us can imagine modern life without glass. It features in almost every aspect of our lives - in our homes, our cars and whenever we sit down to eat or drink. Glass packaging is used for many products, many beverages are sold in glass, as are numerous foodstuffs, as well as medicines and cosmetics.

---

Glass is an ideal material for recycling, and with growing consumer concern for green issues, glass bottles and jars are becoming ever more popular. Glass recycling is good news for the environment. It saves used glass containers being sent to landfill. As less energy is needed to melt recycled glass than to

melt down raw materials, this also saves fuel and production costs. Recycling also reduces the need for raw materials to be quarried, thus saving precious resources.

### **Questions 1-8**

*Complete the notes below.*

Choose **ONE WORD ONLY** from the passage for each answer.

*Write your answers in boxes 1-8 on your answer sheet.*

### **The History of Glass**

- Early humans used a material called 1 ..... to make the sharp points of their 2 .....
- 4000 BC: 3 ..... made of stone were covered in a coating of man-made glass.
- First century BC: glass was coloured because of the 4 ..... in the material.
- Until 476 AD: Only the 5 ..... knew how to make glass.
- From 10th century: Venetians became famous for making bottles out of glass.
- 17th century: George Ravenscroft developed a process using 6 ..... to avoid the occurrence of 7 ..... in blown glass.
- Mid-19th century: British glass production developed after changes to laws concerning 8 .....

### **Questions 9-13**

In boxes 9-13 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

9. In 1887, HM Ashley had the fastest bottle-producing machine that existed at the time.
10. Michael Owens was hired by a large US company to design a fully-automated bottle manufacturing machine for them.
11. Nowadays, most glass is produced by large international manufacturers.
12. Concern for the environment is leading to an increased demand for glass containers.
13. It is more expensive to produce recycled glass than to manufacture new glass.

**Answer:**

1. obsidian
2. spears
3. beads
4. impurities
5. Romans
6. lead
7. clouding
8. taxes

9. TRUE

10. FALSE

11. NOT GIVEN

12. TRUE

13. FALSE

**TEST 80:**

**The Canals of De Lesseps**

Two of the most spectacular engineering feats of the last 200 years were of the same type though thousands of miles apart. They were the construction of the Suez and Panama canals. The Panama Canal joins the Pacific and Atlantic oceans while the Suez joins the Red Sea (Indian Ocean) and the Mediterranean (Atlantic Ocean). Both offer ships huge savings in time and mileage. For example, a nine hour trip on the Panama Canal would save a total of 18,000 miles on a trip from New York to San Francisco. Amazingly enough the same French engineer, Ferdinand de Lesseps, played a major part in the construction of both.

The history of the Panama Canal goes back to 16th century with a survey of the isthmus and a working plan for a canal ordered by the Spanish government in 1529. In the 18th century various

companies tried and failed to construct the canal but it wasn't until 1880 that a French company, organized by Ferdinand Marie de Lesseps, proposed a sea level canal through Panama. He believed that if a sea level canal worked when constructing the Suez Canal, it must work for the Panama Canal. Finally the Panama Canal was constructed in two stages. The first between 1881 and 1888, the work being carried out by the French company headed by de Lesseps, and secondly, the work by the Americans which eventually completed the canal's construction between 1904 and 1914. The French company ran out of money and an attempt was unsuccessful to raise funds by applying to the French government to issue lottery bonds which had been successful during the construction of the Suez Canal when that project was at the point of failure through lack of money. The French problems stemmed from their inability to create a viable solution to the differences in tidal changes in the Pacific and Atlantic Oceans. There is a tidal range of 20 feet at the Pacific whereas the Atlantic range is only about 1 foot. The Americans proposed that a tidal lock should be constructed at Panama which solved the problem and reduced excavation by an enormous amount. When construction was finally finished, the canal ran through various locks, four dams and ran the lengths of two naturally occurring lakes, the 32 mile Gatun Lake and the 5 mile Miraflores Lake.

When the US took on finishing the canal they and the new state of Panama signed the Hay-Bunau-Varilla treaty, by which the United States guaranteed the independence of Panama and secured a perpetual lease on a 10 mile strip for the canal.

Panama was to be compensated by an initial payment of \$10 million and an annuity of \$250,000, beginning in 1913. On December 31st 1999 United States transferred the 51 mile Panama Canal, the surrounding Panama Canal Area and the income back to the Panamanian government.

The idea of a canal linking the Mediterranean to the Red Sea also dates back to ancient times. Unlike the modern canal, earlier ones linked the Red Sea to the Nile, therefore forcing the ships to sail along the River on their journey from Europe to India. It consisted of two parts: the first linking the Gulf of Suez to the Great Bitter Lake, and the second connecting the Lake to one of the branches in the Nile Delta that runs into the Mediterranean. The canal remained in good condition during the Ptolemaic era, but fell into disrepair afterwards and was completely abandoned upon the discovery of the trade route around Africa.

It was Napoleon's engineers who, around 1800 AD, revived the idea of a shorter trade route to India via a Suez canal. However,

the calculation carried out by the French engineers showed a difference in level of 10 meters between both seas. If constructed under such circumstances, a large land area would be flooded. Later the digging of the canal was undertaken by the Ferdinand de Lesseps, who showed the previous French sea height estimates to be incorrect and that locks or dams were not needed.

In 1859, Egyptian workers started working on the construction of the canal in conditions described by historians as slave labor, and the project was completed around 1867. The canal is 163 km long, and has a width of a minimum of 60 metres. The canal cuts through three lakes, Lake Manzala in the north, Lake Timsah in the middle and the Great Bitter Lake further south. The largest, the Great Bitter Lake makes up almost 30 km of the total length. The canal is extensively used by modern ships as it is the fastest crossing from the Atlantic Ocean to the Indian Ocean.

In July 1956 the Egyptian president Nasser announced the nationalization of the canal in response to the British, French and American refusal for a loan aimed at building the Aswan High Dam on the Nile. The revenue from the canal, he argued, would help finance the High Dam project. Since then the Egyptians have controlled the canal. Today, approximately 50 ships cross the

canal daily and the cities and beaches along the Great Bitter Lake and the canal serve as a summer resort for tourists.

Questions 1- 8 Use the information in the text to match the statements (1 – 8) with the canal references (A – D).

Write the appropriate letter (A – D) in boxes 1 – 8 on your answer sheet. Write: A if the statement refers to the Panama Canal.

B if the statement refers to the Suez Canal.

C if the statement refers to both the Panama Canal and the Suez Canal.

D If the statement refers to neither the Panama Canal and the Suez Canal.

1 The surface of the whole canal is at sea level.

2 The canal's construction had financial problems.

3 Dams had to be built to construct the canal.

4 The canal generates money for the country it passes through.

5 Previous labour conditions of construction workers at the canal have been criticised.

6 The canal's construction was held up by war.

7 The canal is also a holiday destination.

8 Over half the canal is within a single lake.

Questions 9 - 13 Read the passage The Canals of de Lessep's again and look at the statements below.

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 De Lessep's Suez Canal construction theories were equally successful in the building of the Panama Canal as they were in building the Suez Canal.

10 The decision to use locks in the Panama Canal also saved time doing other activities.

11 The US were not happy about returning the control of the Panama Canal to Panama.

12 The current Suez Canal is the second canal that has joined the Red Sea to the Mediterranean.

13 The British government refused to give assistance in constructing the Suez Canal.

ANSWERS:

1. B

2. C

3. A

4. C

5. B

6. D

7. B

8. A

9. FALSE

10. TRUE

11. NOT GIVEN

12. TRUE

13. NOT GIVEN



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