

## Practice Test 1

### LISTENING

#### PART 1 Questions 1–10

##### Question 1

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

- 1 Why couldn't the friends eat at the restaurant the woman recommended?
- A** It was closed.
  - B** There were no tables available.
  - C** They couldn't find the restaurant.

##### Questions 2–5

Which restaurant does the woman recommend for the following types of food?

- |  |
|--|
| <ul style="list-style-type: none"><li><b>A</b> Mexican</li><li><b>B</b> Indian</li><li><b>C</b> Argentinian</li><li><b>D</b> Italian</li></ul> |
|--|

Write the correct letter, **A**, **B**, **C** or **D** next to Questions 2–5.

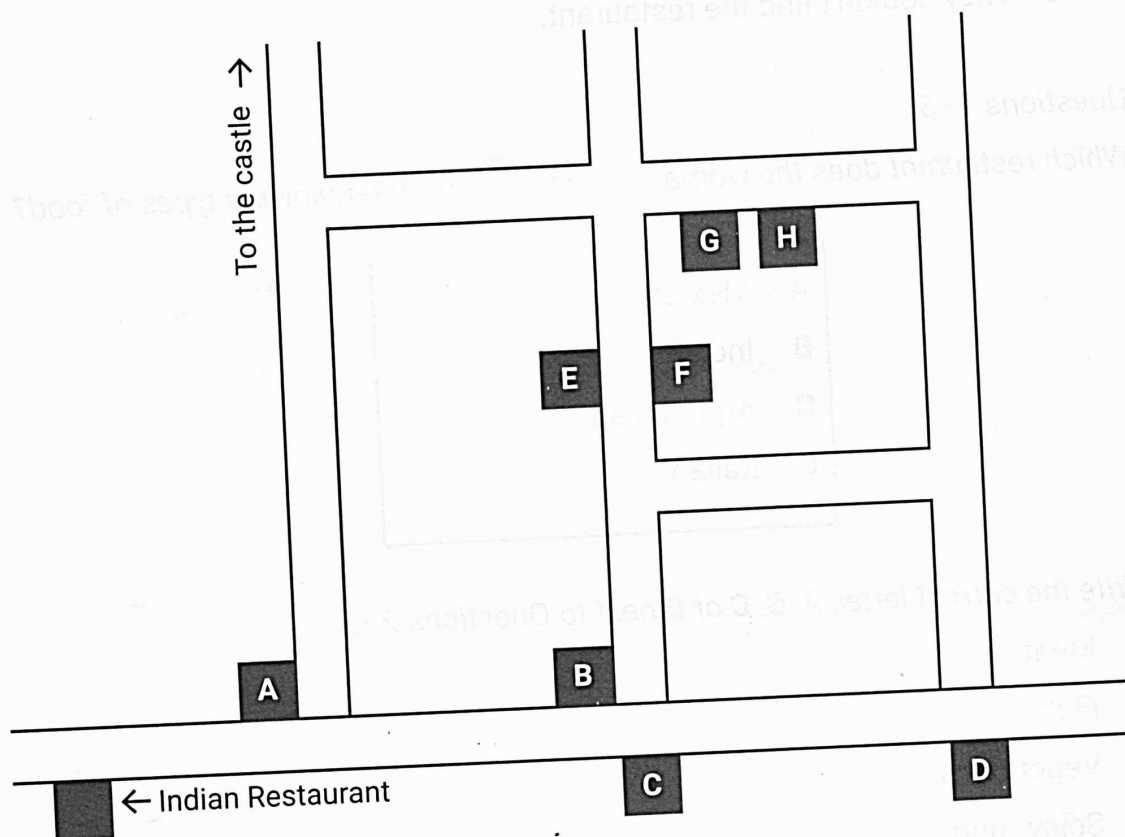
- 2 Meat
- 3 Fish
- 4 Vegetables
- 5 Spicy food

Questions 6–10

Label the map below.

Write the correct letter, **A** to **H**, next to Questions 6–10.

- 6 Mosque
- 7 Flower shop
- 8 Large church
- 9 Antique market
- 10 Mexican restaurant

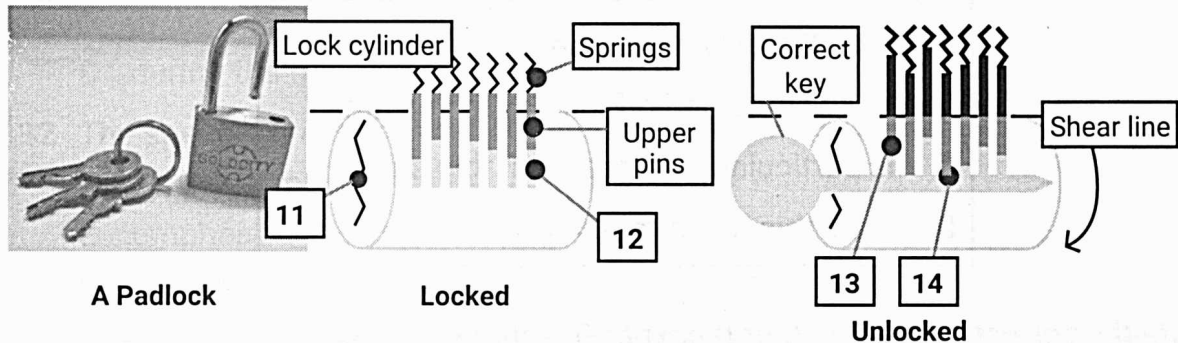


## PART 2 Questions 11–20

### Questions 11–14

Label the diagram below.

Write **NO MORE THAN TWO WORDS** for each answer.



### Questions 15–20

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

- 15 Which of the following is **NOT** a way of opening locks?
  - A Lock shimming
  - B Lock casing
  - C Lock picking
- 16 Which of these methods can be used to open door locks?
  - A Lock shimming
  - B Lock casing
  - C Lock picking
- 17 What sort of lock was introduced in the 1980s?
  - A Computerised locks
  - B Cylinder locks
  - C Electronic locks
- 18 Which is the most common reason people are locked out of their car?
  - A The key fob battery becomes flat.
  - B They misplace their keys.
  - C They leave their keys in their car.
- 19 Which key type is different in appearance?
  - A Traditional keys
  - B Electronic keys
  - C Computerised keys
- 20 What is the speaker's final point about the changes in lock technology?
  - A The increased expense of opening locks.
  - B The increased variety of lock types.
  - C The increased security of locks.

**PART 3**      **Questions 21–30**

**Questions 21–24**

What does Peter say to the student counsellor about the subjects he studied for his degree?

- A** had difficulty remembering information.
- B** has always had difficulties in this area.
- C** is particularly interested in this subject.
- D** feels this has a moral dimension.

Write the correct letter, **A, B, C** or **D** next to Questions **21–24**.

- 21** Ecology
- 22** Plant physiology
- 23** Economic botany
- 24** Biostatistics

**Questions 25–30**

Which of the postgraduate courses has the following features?

Write the correct letter **A, B, C** or **D** next to Questions 25–30.

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

**Postgraduate Courses**

- A** Ecology
- B** Tropical Plant Ecology
- C** Plant Cultivation
- D** Tropical Agriculture

- 25** is **NOT** located in town.
- 26** is **NOT** offered by the student's university.
- 27** is the longest course.
- 28** does **NOT** offer a trip abroad.
- 29–30** Which **TWO** courses have the same fees?



**PART 4      Questions 31–40**

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

- 31** The houses of Parliament were built:
- A** in the Middle Ages.
  - B** in the Eighteenth Century.
  - C** during the reign of Queen Victoria.
- 32** The speaker mentions the UK houses of parliament in order to:
- A** show its importance for tourists visiting London.
  - B** emphasise the importance of Gothic Revival buildings.
  - C** illustrate the beauty of Gothic Revival buildings.
- 33** According to the speaker, Gothic buildings continued to be built in Oxford during the seventeenth century:
- A** as a political gesture.
  - B** because of the city's medieval character.
  - C** to continue the University's traditions.
- 34** The speaker says that Horace Walpole was:
- A** a collector.
  - B** a novelist.
  - C** an architect.
- 35** The most important influence on early Gothic buildings was:
- A** an interest in the architecture of medieval Europe.
  - B** an aesthetic appreciation of Gothic designs.
  - C** a romantic idealisation of the past.
- 36** Pugin considers the Doge's Palace in Venice to be 'the central building of the world' because:
- A** of its location in the centre of Europe.
  - B** of its eclectic range of architectural styles.
  - C** it was the most important Gothic building of the time.
- 37** Gothic Revival design became successful largely because:
- A** it suited new types of buildings.
  - B** Gothic forms could be made from iron.
  - C** it was considered particularly beautiful.



**38** Skyscrapers can be seen as:

- A** the result of technical innovations.
- B** a continuation of Gothic architecture.
- C** an American development of pure Gothic architecture.

**39** Art Nouveau was seen as:

- A** radically different from what came before.
- B** a development of Pugin's ideas.
- C** important for the development of skyscrapers.

**40** What aspect of the Gothic Revival has not survived today?

- A** Its appreciation for space and volume.
- B** Its poetic spirit.
- C** Its ideas of domestic prettiness.



## READING

### READING PASSAGE 1

*You should spend about 20 minutes on Questions 1–13, which are based on Reading Passage 1 below.*

#### **The Endurance and the Mary Rose**

In March 2022, Sir Ernest Shackleton's ship, the *Endurance* was discovered in the Weddell Sea 107 years after it had sunk, destroyed by sea ice while attempting a land crossing of Antarctica. The story of the miraculous escape and survival of the crew meant that news of the well-preserved wreck's discovery was met with much excitement among historians and the sailing community. The Falklands Maritime Heritage Trust (FMHT), who found the vessel, emphasised both the difficulty of the mission and the remarkable condition of the *Endurance* after more than a century underwater. The wreck was quickly declared a designated monument under the International Antarctic Treaty. The non-intrusive expedition will not remove anything from the ship but instead will document and film the finds, which include Shackleton's undamaged cabin.

Many shipwreck enthusiasts and historians assumed the next step after the discovery of such an important ship would be to raise it, preserving the historic vessel for future generations to admire. While the *Endurance* has survived a century underwater, it is inevitable that it will decay unless it is raised. However, it seems increasingly unlikely that this will happen. One reason is that the ship's owner, Sir Ernest's granddaughter, Alexandra Shackleton, is against the move. Another may be the progress made with documenting underwater sites through 3D images and recordings. It could be argued that the knowledge contained in shipwrecks can be accessed without the need for costly recovery operations, like that of the *Mary Rose*, which cost over £8 million from its discovery in 1971 to its raising in 1982. The story of that ship and the long and complex process of recovering it might explain why there was some resistance to raising the *Endurance*.

The *Mary Rose* was discovered in the sea off the south coast of England in 1971. The ship, King Henry VIII's favourite, sank in 1545 during the Battle of the Solent, killing all 500 people on board. What many do not realise is that there were attempts to raise the *Mary Rose* soon after it went down. Cables connected the wreck to two ships, which sailed off in opposite directions in the hope that the resulting tension would bring the *Mary Rose* to the surface. The last of these unsuccessful attempts took place in 1552 and it was to be almost 300 years before several of the ship's bronze and iron guns were rediscovered by divers. During the early 19th century, it was common practice to blow up shipwrecks, believing them to be dangerous to other ships. It was therefore assumed that the *Mary Rose* was lost forever.

By the twentieth century, attitudes towards shipwrecks had changed. Historians realised that a huge amount of information was contained within a ship that had been underwater for centuries. It was to widespread excitement that it was announced in 1971 that the Mary Rose had been discovered in the Solent, off the coast of Portsmouth, England. By the end of the decade, the Mary Rose Trust had been formed to carry out the recovery of the ship and her contents. The Trust appointed a wide range of staff, including administrators, conservators, fundraisers and archeologists. Artefacts, sometimes still contained in the original chests, were brought up, examined, recorded and stored in controlled environments. Over 19,000 objects, from cooking pots and cutlery to medical equipment and religious artefacts were recovered, providing a fascinating insight into everyday life in sixteenth century England.

It was always the intention of the Mary Rose Trust to raise the ship and preserve her for future generations. A committee of experts was set up to decide on the best method of lifting the hull out of the water, and this was finally achieved in 1982. In the end, a purpose-built lifting frame was commissioned and placed over the Mary Rose. The frame contained 11 cross beams, each weighing 2 tons, to be placed over the 11 strongest points of the ship. Under each of the lifting points, tunnels had to be dug beneath the hull to get bolts and wires into position. The legs of the lifting frame were extended gradually over a period of days and once the wreck was hanging, it was moved, while still underwater to a cradle, using a huge crane. This was one of the hardest parts of the procedure as the legs of the lifting frame had to fit the holes on the cradle. Finally, the hull of the famous ship was transferred to a barge and brought into Portsmouth harbour.

Since going on display in Portsmouth, the Mary Rose has been preserved through complex and expensive processes. It is fascinating to visit her in her port of origin; yet, one can understand the concerns of those involved in the discovery of the Endurance. Technology has given us the means to experience the historic ship through film and photography, with much less expense than raising and displaying her in a museum. Perhaps the Shackleton family is right to let the great explorer's ship rest in peace.

### Questions 1–5

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

*In boxes 1–5 on your answer sheet, write*

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

- 1 No-one knows what happened to the Endurance.
- 2 The Endurance was harder to locate than other shipwrecks.
- 3 The FMHT plan to bring objects to the surface as soon as possible.
- 4 The condition of the Endurance will degenerate in the future.
- 5 There is not enough money available to lift the whole ship.

**Questions 6–9**

*Complete each sentence with the correct ending **A–H** from the box below.*

*Write the correct letter **A–H**, in boxes 6–9 on your answer sheet.*

- 6 When the Mary Rose sank,
- 7 When the Mary Rose's guns were found,
- 8 When the Mary Rose was rediscovered,
- 9 After the foundation of the Mary Rose Trust,

- |  |
|--|
| <p><b>A</b> only a few artefacts were recovered.</p> <p><b>B</b> people were reluctant to believe it.</p> <p><b>C</b> shipwrecks were more highly valued.</p> <p><b>D</b> they were immediately brought to the surface.</p> <p><b>E</b> everyone on board perished.</p> <p><b>F</b> people believed the ship had been destroyed.</p> <p><b>G</b> a large number of people started working on the project.</p> <p><b>H</b> there was no interest in raising the ship.</p> |
|--|

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 The Mary Rose was raised with the help of a specially designed  
.....

11 A number of heavy ..... were positioned above specific points  
of the wreck.

12 Bolts and cables could only be put in place due to the construction of a  
number of ..... under the ship.

13 After gradually lifting the hull, a crane was used for the underwater  
transfer to .....

## READING PASSAGE 2

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

Questions 14–19

Reading Passage 2 has six paragraphs **A–F**.

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

Write the correct number **i–ix** in boxes 14–19 on your answer sheet.

14 Paragraph A

15 Paragraph B

16 Paragraph C

17 Paragraph D

18 Paragraph E

19 Paragraph F

- i The role of scent
- ii The importance of diet
- iii Factors affecting how different species hide
- iv New evidence of camouflage
- v No need to hide
- vi Reasons for concealment in nature
- vii How creatures hide themselves
- viii An unusual case of specialisation
- ix Two types of imitation





## Camouflage\* and mimicry\* in nature

- A** Over thousands of millions of years of evolution, species have acquired numerous clever techniques to help them adapt to their surroundings, thrive, and reproduce. Of these, those which most inspire humans include camouflage and mimicry. Species are most commonly motivated to use these techniques simply in order to survive. The need for survival has caused many prey animals to develop ways of avoiding detection by those above them in the food chain. For predators, stealth is the secret of successful hunting, and hiding in plain sight is one strategy they use. For both these groups, camouflage helps them blend in with their surroundings to mask their identity or location. However, not all creatures are able to use the same camouflage tactics. Species with feathers or scales, for example, are able to shed them regularly and relatively quickly, whereas those with fur cannot replace their outer layer so easily.
- B** Habitat and behaviour also influence how species use camouflage. Zebras live in herds so, although their black and white striped coats stand out on the sand-coloured savannah, it is not easy for their predators to identify and track one individual animal. The zebra's main predator is the lion and since lions are colour blind, the zebra's need for disguise is limited. The lion, however, hunts a variety of prey which makes its coat the perfect colour for undercover stalking. Certain species, such as the Arctic Fox change colour according to the seasons: brown in summer; white in winter, keeping them hidden all year round. One of the cleverest types of camouflage is called countershading. Sharks, for example, are darker on top of their bodies and lighter underneath. From above, they blend in with the darker deep water, helping them avoid human predators, and from below their prey cannot easily detect them as their underbelly is a similar colour to the lighter shallower water.
- C** There are two main ways species achieve these remarkable feats of camouflage: pigments and physical structures. Biochromes are natural microscopic pigments, which absorb some wavelengths of light but reflect others, which appears to make them change colour. Some species of octopus can change not only their colour but their pattern and the thickness of their skin. Another way species camouflage themselves is through the use of microscopic physical structures that function as prisms that reflect and scatter light. The resulting colour is different from that of their skin.

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\*Camouflage is a way of hiding in nature

\*Mimicry (in nature) means copying the appearance or behaviour of another species.



Polar bears have black skin and translucent fur but appear white due to the reflections from sunlight and snow. Another mechanism for changing colour is diet. Nudibranchs, a kind of sea slug, feed on species which contain pigments giving them bright purple, orange and red colouration. Their colour changes can be for the purposes of self-concealment or as a warning that they are poisonous.

- D** While most forms of camouflage are visual, some species are able to hide their smell, often by masking themselves with the smell of another creature. This is known as olfactory camouflage. Dog owners might recognise this behaviour in their pets, which have been known to roll in fox urine to disguise their own scent. A more cunning version of this is demonstrated by the Californian ground squirrel, which chews up and spits out rattlesnake skin before applying the paste to its tail. Evidence is emerging for olfactory camouflage in birds with recent studies suggesting the oil produced in the preen gland may change its odour to prevent detection by predators.
- E** Another example of natural selection is mimicry, which takes a variety of forms in the animal kingdom. Batesian mimicry, named after naturalist Henry Walter Bates, is where a harmless species evolves to resemble a more dangerous one. Several insects, such as hoverflies and clearwing moths mimic bees and wasps, since it would be to their advantage to appear more threatening than they actually are. Hoverflies have developed the black and yellow colouration of wasps and bees while clearwing moths mimic them by buzzing in flight. Müllerian mimicry, on the other hand, is when two or more dangerous, unrelated creatures mimic each other's warning signals, thereby keeping predators away from them all.
- F** Many species use mimicry to confuse predators or acquire other benefits. Cuckoos can make themselves resemble a hawk in flight with the result that potential predators flee. They are well-known for laying their eggs in other birds' nests, but what is less well-known is that individual cuckoos choose to mimic only one host species. Those who have chosen the meadow pipit produce spotted eggs, whereas those who mimic the dunnock lay turquoise eggs to avoid their parasitical behaviour being detected. They may also be able to change the shape and size of the eggs in addition to the colour, to further confuse their hosts. There is apparently no limit to the ingenuity to be found in nature.



### Questions 20–23

Complete the summary below using words from the Reading Passage 2.

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

Write your answers in boxes 20–23 on your answer sheet.

Some species use a type of camouflage called **20**..... to avoid detection by prey and predators from different angles. Some species are able to alter their colour due to the possession of specific types of pigments, known as **21**....., which react differently to different types of light. Others possess a kind of prism that spreads out light while remaining invisible because it is **22**..... in size. Changes in **23**..... can also cause an alteration in colour in some species.

### Questions 24–26

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

Write the correct letter in boxes 24–26 on your answer sheet.

**24** New research on bird populations indicates that:

- A** previous findings were inaccurate.
- B** birds may mask their own scent.
- C** predatory birds secrete preen oil.
- D** birds' odour is undetectable.

**25** Batesian mimicry is:

- A** beneficial to multiple species.
- B** defined by colour changes.
- C** the way other insects copy bees and wasps.
- D** a way to appear threatening.

**26** According to the text, cuckoos:

- A** only use the nests of two bird species.
- B** are rarely caught in their mimicry.
- C** can lay eggs of different colours.
- D** have few natural predators.



## READING PASSAGE 3

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

### The Sapir-Whorf hypotheses

According to linguist, Edward Sapir, humans' perception of the world around them is very much dependent on the particular language their society uses. This idea came to be known as linguistic determinism. Writing in the 1920's Sapir expressed the idea that speakers of different languages inhabit distinct worlds, rather than the same world with different names attached to objects and actions. Sapir places a huge importance on language as the shaper rather than the reflector of reality. Sapir's student, Benjamin Lee Whorf, extended his teacher's view further, describing the world as a 'kaleidoscopic flux of impressions' – or complex mixture of elements – that needs to be organised into meaning. This is done through the linguistic systems in our minds. Thus, from the chaos of reality, thousands of separate versions of reality emerge, a unique one for each language. The second hypothesis, linguistic relativism, is the view that speakers of each language view the world differently.

Both Sapir and Whorf drew evidence from their work with native American languages, noticing that in the Hopi language, there is no past, present and future tense but actions are divided into 'manifest' and 'unmanifested'. 'Manifest' refers to actual events, past, present and even future, whereas 'unmanifested' includes dreams, thoughts, the distant past and the future. This and similar differences, they argue, suggest a completely different experience of the world. While their work is interesting, it should be put into context. At the time they were formulating their hypotheses, the US government was encouraging the assimilation of native Americans. Linguists like Sapir and Whorf were documenting their languages, which were considered both endangered and 'exotic'. The 'othering' of these tribal cultures may have caused them to overstate the effect of linguistic differences.

Very few people accept the 'strong' form of the hypotheses, that our language completely determines our world view. However, there is still interest in a weaker form of Sapir and Whorf's ideas. Behavioural economist, Keith Chen, has compared the spending and saving habits of people who speak 'futured' languages with those whose languages do not contain a future tense. After accounting for a wide range of other variables, Chen found that people who use a future tense see the future as something 'other' and far away, which discourages the saving habit. Conversely, those who do not have a distinct tense to talk about the future, view the future with more immediacy as a time not too distant that they need to save for. Despite the research conducted so painstakingly by Chen,

anecdotal evidence that we all possess suggests that spending and saving behaviour depends on a range of factors including, crucially, personality.

For linguist George Lakoff, the pervasive use of metaphor in language supports the view that language shapes the way we see the world. Argument, for instance, is often expressed using the language of war: your position is *indefensible*, she *attacked* my position, he *shot down* all my arguments. Lakoff invites us to consider how we would see the concept of argument if it was expressed using the language of dance instead of war. Would the world be more peaceful if we gracefully approached our dance (argument) partner to work together to create something beautiful? This may be fanciful, but it seems to suggest that language reflects our view of reality and not the other way around. Lakoff uses the phrase 'time is money' to illustrate this. Surely, it is the importance we place on money that has led to so many expressions in our language comparing the two valuable commodities in phrases such as waste time, use your time *profitably* and *budget* your time.

So-called 'gendered' languages provide an interesting context to investigate the Sapir-Whorf hypotheses. In Spanish, for instance, the masculine plural form 'alumnos' would be used to refer to a group of students containing 99 females and one male. This is because Spanish plural forms are masculine by default. English speakers who learn Spanish assume that in such a case, the feminine form 'alumnas' would be more appropriate or preferably, a gender-neutral form, which mirrors their own language. Academic Jennifer Prewitt-Freilino claims that countries with gendered languages have higher than average levels of gender inequality. She nevertheless concedes that when speaking a genderless language, people's minds may focus on the masculine, for example mentally picturing a man when they hear the word 'chairperson'. This suggests that culture carries more weight than language when it comes to the way we interact with our social reality.

There are many who have challenged even the weaker form of the Sapir-Whorf hypotheses. Philosopher Martin Heidegger, a contemporary of Sapir and Whorf rejected the idea that language conditions our view of reality, citing the fact that every human being innovates with language and creates new utterances based on new realities they experience. Some cite the existence of words that cannot be translated into other languages as support for the hypotheses. The word 'hygge' (pronounced *hoo-guh*) in Norwegian and Danish needs a whole sentence to express its definition in English: *a feeling of cosiness and surrounding yourself with the things that make you feel good*. Clearly, this concept exists in every culture, but for those who do not speak Danish or Norwegian, it is difficult to say whether a translation of 'hygge' is an accurate reflection of its precise meaning when used by Danes and Norwegians.



There is no consensus on the precise relationship between language and perception. It is too complex a matter for that, and the controversy will continue. However, both learning languages and learning about languages foster intercultural understanding and most would agree, therefore, that this should be encouraged.

**Questions 27–28**

Choose **TWO** letters **A–F**.

Which two statements reflect the ideas of Edward Sapir and / or Benjamin Lee Whorf as given in the text?

Write the correct letter **A–F** in boxes 27–28 on your answer sheet.

- A** Some languages are more efficient than others at categorising reality.
- B** Differences between languages have been exaggerated.
- C** The language you speak has a profound effect on your life.
- D** People who speak the same language may perceive reality differently.
- E** Without language the world doesn't make sense.
- F** Learning multiple languages is beneficial to individuals.

**Questions 29–30**

Choose **Two** letters **A–F**

Which **TWO** statements reflect Sapir and Whorf's work with American Indian languages?

Write the correct letter **A–F** in boxes 29–30 on your answer sheet.

- A** They found structural differences between those languages and English.
- B** Without English, native Americans are unlikely to integrate properly.
- C** Speakers of those languages find it difficult to relate to future time.
- D** They believe more should be done to protect minority languages.
- E** The way things are categorised in the language influence the speaker's worldview.
- F** They have more logical categories to divide up human experience.



Questions 31–34

Look at the following people and the list of statements below.

Match each person with the correct statement, **A–G**.

Write the correct letter **A–G** in boxes 31–34 on your answer sheet.

31 Keith Chen

32 George Lakoff

33 Jennifer Prewitt-Freilino

34 Martin Heidegger

- A** The way we use language to represent other things affects how we see the world.
- B** Language is one of the main causes of social injustice.
- C** Untranslatable words confirm the Sapir-Whorf hypotheses.
- D** The linguistic creativity of individuals disproves Sapir-Whorf.
- E** Language affects our perceptions at a largely subconscious level.
- F** Social attitudes and prejudice are not necessarily caused by language alone.
- G** Grammatical structures in a language can affect the way people live.

Questions 35–39

Do the following statements agree with the claims of the writer in Reading Passage 3?

In boxes 35–39 on your answer sheet, write

- YES** if the statement agrees with the writer's claims
- NO** if the statement contradicts the writer's claims
- NOT GIVEN** if it is impossible to say what the writer thinks about this

- 35 Historical attitudes to non-European languages should be considered when evaluating Sapir-Whorf.
- 36 Chen failed to take account of individual differences in people's characters.
- 37 Chen's research on savings habits lacks methodological rigour.
- 38 Lakoff provides strong evidence that our language shapes the way we behave.
- 39 Metaphors are a reflection of the way people see the world.

Question 40

40 Which of the options is a summary of the writer's position in the passage?

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

- A** The Sapir-Whorf hypotheses have broadly been rejected.
- B** More focused research is needed to test the hypotheses.
- C** Culture has more influence than language on people's behaviour.
- D** Sapir and Whorf's original ideas have been misunderstood.

## Practice Test 2

### LISTENING

#### PART 1 Questions 1–10

Questions 1–6

Complete the table below.

Use **NO MORE THAN ONE WORD OR A NUMBER** for each answer.

**Children's Schedule for Babysitter**

Approximate time	Tom's schedule	Rose's schedule
4.00 pm	Creche	Nap
5:00 pm	Snack	Dinner
1 .....	Outdoor walk/indoor play	2 .....
	Dinner	Bottle and book
3 .....	4 .....	Sleep
7.15 pm	5 .....	
7.30 pm	Bath/ready for bed	
6 .....	Sleep	

Questions 7–10

Choose your answers from the box and write the correct letter, **A–C** next to Questions 7–10.

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

- A** Mother

**B** Husband

**C** Sally

- 7 Who thinks that nightlights are a bad idea?
- 8 Who thinks processed foods should be avoided?
- 9 Who thinks that children should be kept indoors when it's cold and dark?
- 10 Who thinks familiarity with books will help in the long-term?

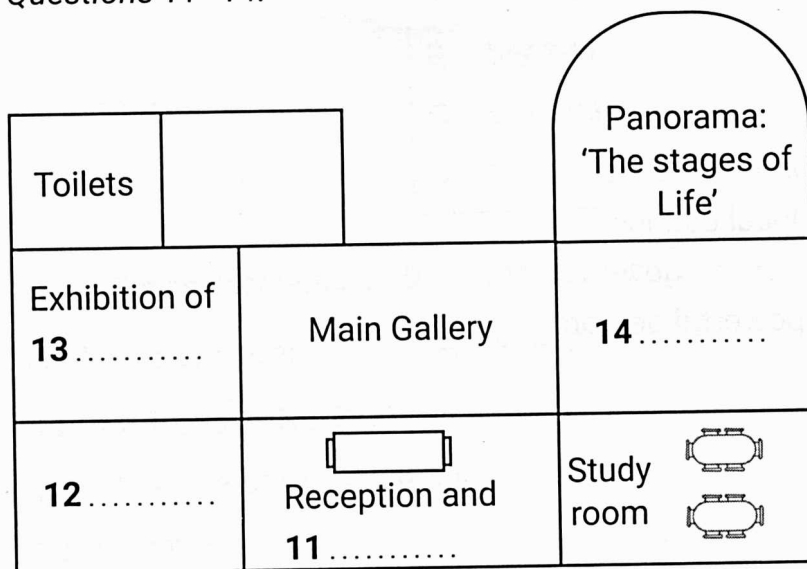


## PART 2 Questions 11–20

### Questions 11–14

Label the diagram below.

Choose **FOUR** answers from the box and write the correct letters, **A–H** next to Questions 11–14.



Entrance

- |   |                |
|---|----------------|
| A | paintings      |
| B | café           |
| C | studio         |
| D | writing desk   |
| E | theatre        |
| F | drawings       |
| G | garden terrace |
| H | shop           |

### Questions 15–20

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

15 What was Antony Morrow's nationality?

- A French
- B English
- C Italian

16 The Panorama painting was prompted by the death of the artist's:

- A wife.
- B daughter.
- C mother.

17 Morrow completed his Panorama in:

- A Italy.
- B Switzerland.
- C France.

- 18 Morrow's Panorama is considered to be an example of:
- A impressionism.
  - B symbolism.
  - C cubism.
- 19 The most cheerful part of the Panorama features the artist's:
- A wife.
  - B daughter.
  - C sister.
- 20 The museum has the painting because:
- A it was bought by the local council.
  - B it was a gift from the French government.
  - C of the influence of a powerful person.

### PART 3 Questions 21–30

Questions 21–25

According to the lecturer, in which country are the following work opportunities available?

- |   |         |
|---|---------|
| A | France  |
| B | Senegal |
| C | Canada  |
| D | Haiti   |

Write the correct letter, **A, B, C** or **D**, next to Questions 21–25.

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

- 21 Work at a university
- 22 Work in a primary school
- 23 Environmental work
- 24 Assisting local charities
- 25 Work in a local business

Questions 26–30

Complete the notes below.

Write **NO MORE THAN ONE WORD** for each answer.

Student	Choices	Reason
Sherine	First: Canada Second: France Third: 27 .....	Interested in 26 .....
Ben	First: Haiti Second: Senegal Third: France	Wants to work for a 28 .....
Reena	First: Senegal Second: 30 ..... Third: France	Wants to work with 29 .....

**PART 4      Questions 31–40**

**Questions 31–34**

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

- 31** In which month did the first manned orbit of the Earth take place?
- A** February
  - B** April
  - C** November
- 32** Why was Laika finally selected to be the first dog in space?
- A** She had been hardened by a tough life of Moscow winter.
  - B** Tests showed her to be medically fit.
  - C** She could cope best in confined spaces.
- 33** Which organisation commemorated Laika's death?
- A** The Sputnik 2 Science Team
  - B** The National Canine Defence League
  - C** NASA
- 34** How many changes of name did the French space cat Félicette have?
- A** One
  - B** Two
  - C** Three

**Questions 35–38**

Complete the sentences below.

Write **NO MORE THAN TWO WORDS** for each answer.

- 35** A creature able to survive outside spacecraft is known as .....
- 36** Animals have been sent to the International Space Station (ISS) to study the effects of .....
- 37** Animals born on the ISS coped much better than those not, as shown by a study of .....
- 38** Mice were taken to the ISS in order to study the development of .....

Questions 39–40

Answer the Questions below.

Write **NO MORE THAN ONE WORD** for each answer.

What are the two guiding principles for sending animals into space?

39 .....

40 .....

## READING

### READING PASSAGE 1

You should spend about 20 minutes on Questions 1–13, which are based on Reading Passage 1 below.

#### How much do you really know?

*Adapted from 'The Dunning-Kruger effect: On being ignorant of one's own ignorance'. Copyright © 2011 Elsevier Inc.<sup>1</sup>*

Allow me to begin with a statement that I hope will not be too controversial. That statement is that people live their lives under the shadow of their own inevitable ignorance. People simply do not know everything about everything. There are holes in their knowledge and gaps in their expertise. I, for example, can name many areas in which my knowledge is incomplete, or non-existent. I know nothing about the latest developments in astrophysics, and little about current European art. If you want to know about good places to eat in Sydney, Australia, I am not the best person to ask.

Of course, many people may argue that ignorance is unavoidable, stating that most, if not all, of the things people are ignorant about are related to obscure topics that do not have much impact on their daily lives. Some economists, for example, have put forward the viewpoint that most ignorance is rational, in that there are areas of knowledge where gaining expertise has no tangible benefit and is therefore not worthwhile.

I believe that these views on ignorance are mistaken. In my view, there are two main ways that ignorance does impact on people's day-to-day lives. First, I wish to argue that the limit of a person's knowledge is often reached far sooner than we might expect. For example, in contemporary society, people must filter a large volume of news about scientific facts on such important issues as the environment, medical treatment and biotechnology. In that regard, the US-based National Science Foundation, in its biannual survey of scientific knowledge, has found large gaps in the American population's grasp of basic scientific facts. In its 2008 survey of roughly 1,500 United States adults, only 51% could successfully identify that it was the Earth that revolved around the Sun (rather than the other way around).

<sup>1</sup>Dunning D 2011 The Dunning-Kruger effect: on being ignorant of one's own ignorance. *Advances in Experimental Psychology* 44: 247-296.

But it is the second assertion that may be more important, that people don't really know where their knowledge ends, and their ignorance begins. It is perhaps, ironic that the one thing people are most likely to be ignorant about is the extent of their own ignorance – where it starts, where it stops, and all the space it fills in between. Arguing that ignorance tends to be invisible can be difficult, because many people may have a hard time relating to it. If they try to introspect about ignorance in their own life, they will come up empty. But there is a manifestation that is quite visible, and that people do relate to. It is not the ignorance they witness in themselves; rather it is the ignorance they witness in others.

For any given skill, some people have more expertise, and some have less – some a lot less. What about those people with low levels of expertise? Do they recognise it? According to the argument presented here, people with substantial gaps in their knowledge or expertise should not be able to recognise those gaps. Despite potentially making error after error, they should tend to think they are doing just fine. In short, those who are incompetent, for lack of a better term, have little insight into their incompetence – an assertion that has come to be known as the Dunning-Kruger effect. This is the form of ignorance that is visible to people in everyday life.

When it comes to the judgment of performance based on knowledge, poor performers may face a double burden. First, gaps in their expertise may lead them to make many mistakes. Second, those exact same expertise gaps may lead them to be unable to recognise when they were making mistakes and when other people were choosing more wisely. To further illustrate this, consider the processes of assessing whether a sentence is grammatically correct. The process of assessment relies on the same set of skills needed to produce a grammatically correct sentence in the first place. We can conclude that if poor performers have knowledge or skill gaps that cause them to produce errors, those same skill gaps will prevent them from accurately spotting those errors in their output.

However, pointing out people's skill and knowledge gaps does not necessarily motivate them to overcome their limitations. In a recent study on emotional intelligence, business school students were given an individual 'emotional intelligence score' and shown how it related to national norms. Researchers then offered the students the opportunity to buy a book about 'emotionally intelligent management' at a 50% discount. Of the students with the highest emotional intelligence scores, 64% wanted to purchase the book. Of the students with the lowest scores, only 19% were interested. It is interesting to consider why lower

scoring students were resistant to acknowledging their own ignorance and taking action to fill their knowledge and skill gaps. It may be that motivational defences – aimed at keeping self-esteem high – are to blame.

Is it possible that ignorance really is bliss? We often view high levels of confidence as a positive attribute, energising people to achieve their goals, even seemingly impossible ones. But could ignorance be an advantage? In moments when people must act decisively, perhaps being wise is not such a good idea.

#### Questions 1–4

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

Write the correct letter in boxes 1–4 on your answer sheet.

- 1 The writer uses the example of restaurants in Sydney in order to:
  - A show the inevitability of ignorance.
  - B illustrate that everyone has areas of ignorance.
  - C emphasise other people's lack of knowledge.
  - D make their statements less controversial.
- 2 The writer mentions that economic analysis was used to illustrate that people:
  - A are unaware of their own ignorance.
  - B are not harmed by their own ignorance.
  - C may not benefit by improving their knowledge.
  - D may suffer economic disadvantages as a result of ignorance.
- 3 The author gave the example of the National Science Foundation survey to illustrate:
  - A people's lack of knowledge.
  - B that lack of knowledge can be measured.
  - C the importance of scientific knowledge.
  - D that ignorance is normal.
- 4 The Dunning-Kruger effect is summarised as:
  - A a measure of people's ignorance.
  - B ignorance not being recognised by the ignorant.
  - C the frequency with which errors are made.
  - D the ability of intelligent people to recognise their limitations.





Questions 5–7

Do the following statements agree with the claims of the writer in Reading Passage 1?

In boxes 5–7 on the 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

- 5 The author suggests that ignorant people face a 'double burden' because recognising errors requires knowledge.  
6 Weaker students often feel discouraged when trying to improve.  
7 The author concludes that ignorance is never beneficial.

Questions 8–13

Complete the summary using the list of words, **A–H**, below.

Write the correct letter, **A–H** in boxes 8–13 on your answer sheet.

**Not recognising, not knowing**

Ignorance is much easier to recognise in others than in ourselves. The 8 ..... of people's ignorance can sometimes be surprising, when what appears to be self- 9 ..... facts are unknown to large proportions of a population. Yet, these people are often 10 ..... of these gaps in their own knowledge. Even when making 11 ..... errors, some will not recognise their ignorance or incompetence, especially those with the least skill or knowledge. This can be because the skills needed to recognise an error depend on the skill being 12 ..... Another reason may be defensive; people ignoring their failings in order to preserve their self- 13 .....

- |                   |                  |                  |                 |                  |
|-------------------|------------------|------------------|-----------------|------------------|
| <b>A</b> repeated | <b>B</b> evident | <b>C</b> respect | <b>D</b> tested | <b>E</b> mistake |
| <b>F</b> unaware  | <b>G</b> knowing | <b>H</b> extent  |                 |                  |

## READING PASSAGE 2

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

Questions 14–20

Reading Passage 2 has eight paragraphs, **A–H**.

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

Write the correct number, **i–x**, in boxes 14–20 on your answer sheet.

### List of Headings

- i** World traditions
- ii** Promoting weight loss
- iii** Digestive tract benefits
- iv** A way forward
- v** An alternative product
- vi** Benefits beyond the gut
- vii** Replacing harmful bacteria
- viii** Getting enough good bacteria
- ix** Commercial innovations
- x** Market trends

Example

Answer

Paragraph A

**viii**

14 Paragraph B

15 Paragraph C

16 Paragraph D

17 Paragraph E

18 Paragraph F

19 Paragraph G

20 Paragraph H



## Healthy bacteria

Adapted from 'Non-dairy probiotic beverages'. Copyright © 2013 International Food Research Journal.<sup>2</sup>

- A** Probiotics are foods that contain live microorganisms, which, when consumed in sufficient numbers, can provide health benefits that go beyond general nutrition by improving the microbial balance in the intestines. For foods to be considered probiotic, the microorganisms must be alive and present in high numbers – generally more than  $10^9$  cells per daily intake. Probiotic products, therefore, should indicate the minimum daily amount a person needs to consume in order to experience specific health benefits. These benefits may include cancer prevention, and improved immune, digestive and respiratory function. It has been suggested that the longevity seen in some European societies may be related to the high intake of fermented milk. It is also thought that the lactic acid produced as a result of sugar fermentation can be of particular benefit.
- B** Health professionals are increasingly promoting the health benefits of food with added live microbes (probiotics) particularly for children and populations with a high risk of disease. Several probiotic strains have been shown to prevent or alleviate infantile diarrhoea, while there is growing evidence that probiotics have a potential therapeutic benefit for patients suffering from bowel disorders. A few studies indicate that consumption of fermented dairy products containing the microbes *Lactobacilli* or *Bifidobacteria*, or the regular intake of lactic acid bacteria, lowers the risk of some gut and urinary tract cancers. Studies carried out on the effects of lactic acid bacteria have shown reduced severity of constipation and improved bowel function in otherwise healthy people.
- C** In addition to benefits to the digestive system, probiotics can improve other aspects of our health. Bacterial cultures, yoghurt starter cultures and probiotic cultures are known to improve lactose digestion for people suffering from intolerance to dairy products. Probiotics have also been used successfully in the management of eczema (a skin disease) in infants. There are also numerous studies that demonstrate that probiotic cultures can improve natural immunity in healthy people.

<sup>2</sup>Vasudha S and Mishra HN 2013 Non-dairy probiotic beverages. International Food Research Journal 20(1): 7-15.



- D** While most probiotic foods available today are milk-based, consumers' preferences are increasingly moving to plant-based dietary supplements, which are either free from or have minimal cholesterol content. This trend can be seen in the U.S. where there is a fast-growing market for plant-based dietary supplements. In addition, some Asian diets include relatively few dairy-based foods, with plant-based foods making up the majority of the daily intake. This means that lactose intolerance is more common among Asian people which may further discourage the consumption of dairy products. Besides its influence on wider dietary habits, lactose intolerance discourages many Asian people from consuming milk. Based on this evidence, it may be concluded that plant-based probiotics have the potential to become popular in countries around the world.
- E** Globally, there is a wide variety of non-dairy fermented drinks to choose from. Many of these are non-alcoholic and use cereal grains as the main ingredient. Not only are cereal grains an important source of protein, carbohydrates, vitamins, minerals and fibre, but they also act as prebiotics, that is, they stimulate the growth of the *Lactobacilli* and *Bifidobacteria* already present in the gut. Some *Lactobacilli* require a fermented carbohydrate in order to grow and the fermentation of cereal grains may be a cheap way to obtain prebiotics that promote gut health.
- F** Boza, a beverage consumed in Bulgaria, Albania, Turkey and Romania is made from wheat, rye, millet, maize and other cereals mixed with sugar. An analysis of Bulgarian boza shows that it mainly consists of yeasts and lactic acid bacteria. Bushera is a traditional beverage prepared in the western highlands of Uganda, consumed by both young children and adults. Pozol, a refreshing beverage consumed in south-eastern Mexico, is made by cooking maize to make a dough which is wrapped in banana leaves and left to ferment. The fermented dough is suspended in water and drunk.
- G** Fruit-juice-based functional beverages (drinks that provide a specific health benefit), fortified with probiotic ingredients, are being developed by a number of commercial food manufacturers. Fruit juices are popular with all age groups and are generally seen as healthy and refreshing so are the perfect vehicle for added, probiotic ingredients. Advances in biotechnology have made it possible to change some of the characteristics of fruit and vegetables through a process of bioengineering. This too could provide an ideal medium for probiotic cultures.

- H** The increasing number of people adopting a vegetarian or vegan diet and the increasing demand for cholesterol-free probiotics have encouraged scientists to explore new ways to deliver probiotic products to consumers. Much of this research focuses on fruit and vegetable juices. As the interest in non-dairy functional beverages increases globally, we can expect a wider range of probiotic drinks in the future. There is genuine interest in the development of non-dairy-based functional beverages with probiotics because they serve as a healthy alternative to dairy probiotics, are cholesterol free and can also be enjoyed by lactose-intolerant consumers.

**Questions 21–26**

*Look at the list of products and their features below.*

*Match the products to the features.*

*Write the correct letter, **A**, **B** or **C** in boxes 21–26 on your answer sheet.*

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

**List of Products**

- A** Dairy-based probiotics
- B** Non-dairy probiotics
- C** Both dairy and non-dairy probiotics

- 21** have long-established use
- 22** lessen lactose intolerance
- 23** promote longer life expectancy
- 24** provide the benefits of lactic acid
- 25** are compatible with existing diets
- 26** are produced in appealing flavours

## READING PASSAGE 3

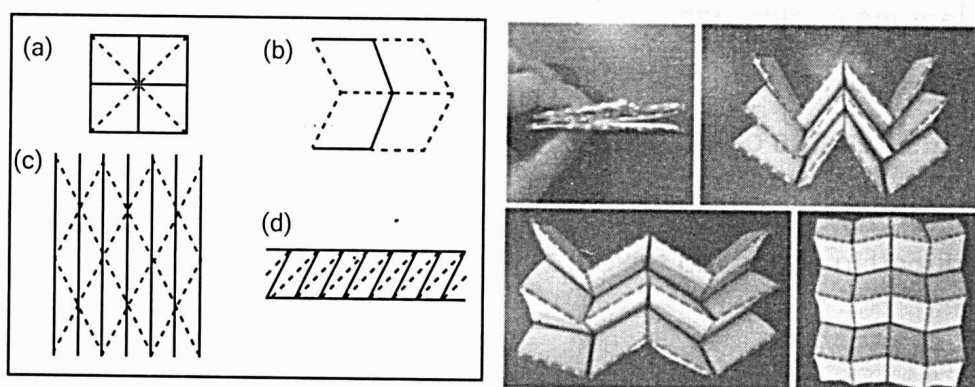
You should spend about 20 minutes on Questions 27–40, which are based on Reading Passage 3 below.

### Origami and Engineering

Adapted from 'A review of origami applications in mechanical engineering'. Copyright © 2015 Institution of Mechanical Engineers.<sup>3</sup>

The word origami, the ancient art of paper folding, combines the Japanese roots *ori*, meaning 'folded', and *kami*, meaning 'paper'. Despite origami's long aesthetic history as an art form, the vast majority of practical applications have emerged in the last 50 years. Advances in computer science, number theory, and computational geometry have paved the way for powerful new analysis and design techniques, which now extend far beyond the art itself. Mechanical engineering has always been concerned with devices that allow relative motion between components. This relative motion has many similarities to folding. However, the field of *mechanical engineering origami* is a recent development, and it is leading to new and useful results.

First, it is important to understand some common terms associated with origami. A *crease* is a fold, either convex (mountain) or concave (valley). Collectively, all the creases make up the *crease pattern*. The *waterbomb base*, the *Miura-ori pattern*, the *Yoshimura pattern*, and the diagonal pattern are all rigid-foldable crease patterns. The first two can be expanded in all directions, the Yoshimura pattern is capable of translational motion (up and down and side to side) and the diagonal pattern allows for rotary motion.



Left: Common origami crease patterns include (a) waterbomb base, (b) Miura-ori pattern, (c) Yoshimura pattern, and (d) diagonal pattern. Dashed lines show mountain folds while solid lines show valley folds. Right: a model of an expanding Miura-ori pattern.

<sup>3</sup>Turner N, Goodwine B and Sen M 2016 A review of origami applications in mechanical engineering. Journal of Mechanical Engineering Science **230**(14): 2345-2362.



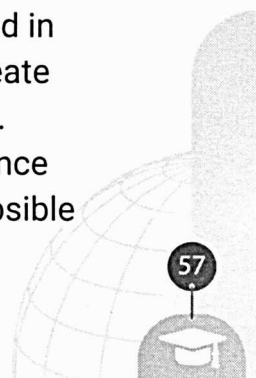
The material used to create origami is critical. Artistic origami uses paper which is an elastic material that prefers to be flat, but other materials are more useful for engineering. One challenge in moving from theoretical origami to engineering origami is that materials have a finite thickness, unlike in mathematical models that assume zero thickness. To address this, the volume of edges on valley sides can be trimmed to avoid self-intersection. If the material is properly assembled and creased so that it can locally bend and deform to the desired shape, 3D structures can be made or self-folded with ease.

Engineering origami can be used in a number of ways by the packaging industry. Most engineering applications of origami use materials that are more rigid than paper. More rigid materials often form the packaging of consumer goods and engineering origami can be used to develop automated folding processes and to ensure that the packaging is efficient. One recent example of origami in packaging is the flat-folding rigid shopping bag. The solution allows the base of the bag to remain rigid, while the upper portion (separated by a crease) is more flexible.

A larger-scale variation on the theme of packaging is the development of shipping containers. The transportation of empty containers is inevitable in the shipping industry and several attempts have been made to manufacture foldable shipping containers to save space. Simplicity and durability in unfolding and folding of the containers is a must and lightweight materials should be used to keep the weight down. So far, two major foldable containers have been introduced into the market, but neither were commercially successful as they were heavy and were significantly more expensive than standard containers.

Origami techniques using rigid materials have long been used by the space industry in the construction of solar panels and inflatable booms for deployable space structures. The Miura-ori pattern was first introduced for the deployment of solid solar panels in space and continues to be used. This pattern is ideal for folding solar panels because it meets the requirements of being both rigid and flat-foldable. It has also been used to create lithium-ion batteries that bend, twist, and fold, commonly referred to as deformable energy storage devices.

There are a number of other applications for origami. Car airbag design involves folding an airbag into a compact state that allows it to be unfolded in milliseconds. In addition, classic origami geometries are being used to create antennas and other electronic devices designed to collapse to small sizes. Antennas that will fit into a pocket, for example can be used for long distance communication when paired with other devices. Several designs for collapsible cylinders based on the *Yoshimura pattern* have already been developed.



Origami is an art form that is currently finding many engineering applications. In order to successfully implement these new techniques, progress is required in four key areas. Firstly, we need a better understanding of folding algorithms in order to fold intricate 3D structures efficiently. Secondly, we need to find ways to increase the mechanical efficiency of folding to cut costs. Thirdly, there is a need for research into entirely new crease patterns that allow folding in more innovative and effective ways. Finally, design approaches and methodologies in origami engineering need to be standardised.

### 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.

- 27 Wider use of engineering origami was made possible
- 28 The Yoshimura pattern differs from the Miura-ori pattern
- 29 Theoretical models differ from practical applications
- 30 Folding along valley sides differs from folding along mountain edges

- A** as it allows greater extension in the third dimension.
- B** by the use of plastic materials.
- C** by origami's long and rich history.
- D** by developments in several fields of science.
- E** as it has a greater number of fold types.
- F** as adjustment for the thickness of the material is required.
- G** as they involve materials not found in nature.

### Questions 31–35

Do the following statements agree with the information given in Reading Passage 3?

In boxes **31–35** 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           |





- 31 Common engineering materials have similar properties to paper.
- 32 The development of folded shopping bags was the result of consumer demand.
- 33 Collapsible shipping containers have been successfully produced.
- 34 Foldable lithium-ion batteries have been used in space.
- 35 The *Yoshimura* pattern allows the construction of circular designs.

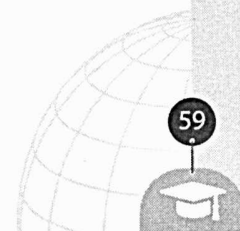
### Questions 36–40

Complete the sentences below.

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

Write your answers in boxes 36–40 on your answer sheet.

- 36 The art of origami has long been admired for its ..... qualities.
- 37 Folding results in relative ..... between components in a structure.
- 38 Circular motion is allowed by the ..... pattern.
- 39 Production costs could be reduced by increasing the ..... of folds.
- 40 New crease patterns may become even more .....



## Practice Test 3

### LISTENING

#### PART 1 Questions 1–10

##### Questions 1–5

Which cruise holiday matches the description?

Write the correct letter, **A–E** next to Questions 1–5.

- A** O&P Caribbean cruise
- B** O&P Mediterranean cruise
- C** Classic Mediterranean cruise
- D** Nordic Norwegian fjord cruise
- E** Eurocruise Rhine cruise

- 1 The agent talks about coastal features.
- 2 The agent has been on this cruise.
- 3 The agent speaks about the food.
- 4 The agent mentions shopping.
- 5 This cruise combines some of the interests of the customer's wife.

Questions 6–10

Complete the table below.

Write **A NUMBER** for each answer.

Accommodation type	O&P Caribbean cruise <sup>1</sup>	O&P Mediterranean cruise	Classic Mediterranean cruise <sup>2</sup>	Nordic Norwegian fjord cruise	Eurocruise Rhine cruise
Cruise duration	14 nights	6 ..... nights	7 nights	7 nights	7 nights
Inside cabin	£2,179	£1,099	8 £ .....	£8493	---
Sea view cabin	£2,549	£1,199	£1,329	£1,049	£1,595
Balcony cabin	£2,759	£1,799	£1,539	£1,249	£1,745
Stateroom/suite	£5,559	£2,399	9 £ .....	---	10 £ .....
	<sup>1</sup> On-board spend per cabin up to 7 £ .....		<sup>2</sup> Drinks, WiFi & crew gratuities £40pp per day	<sup>3</sup> Cabins for solo travellers @ £1,699pp	

## PART 2 Questions 11–20

### Questions 11–14

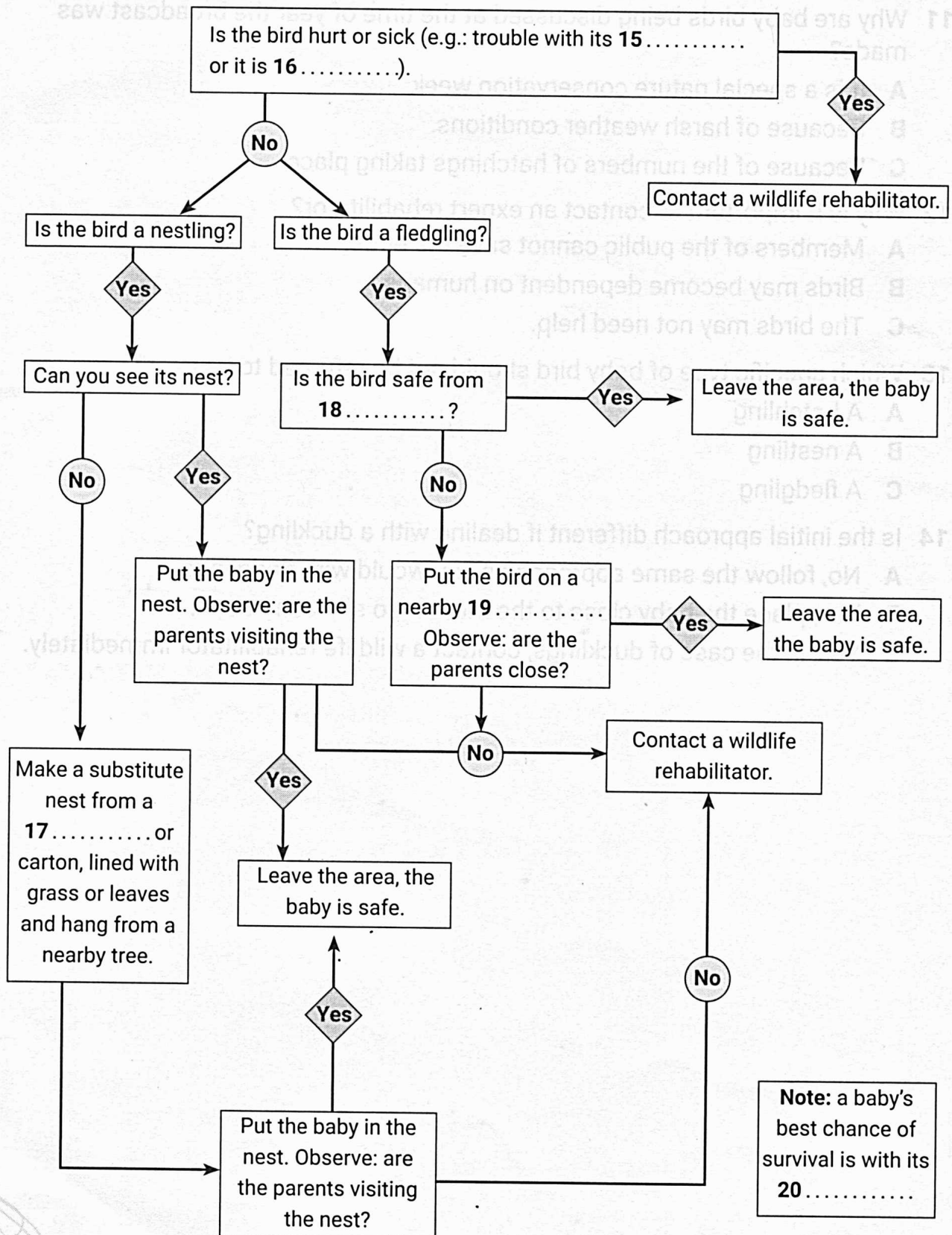
Choose the correct letter, **A**, **B** or **C**.

- 11** Why are baby birds being discussed at the time of year the broadcast was made?
- A** It is a special nature conservation week.
  - B** Because of harsh weather conditions.
  - C** Because of the numbers of hatchings taking place.
- 12** Why is it important to contact an expert rehabilitator?
- A** Members of the public cannot save the birds.
  - B** Birds may become dependent on humans.
  - C** The birds may not need help.
- 13** Which specific type of baby bird should not be returned to its nest?
- A** A hatchling
  - B** A nestling
  - C** A fledgling
- 14** Is the initial approach different if dealing with a duckling?
- A** No, follow the same approach as you would with fledglings.
  - B** Yes, place the baby close to the mother so she can hear it.
  - C** Yes, in the case of ducklings, contact a wildlife rehabilitator immediately.

Questions 15–20

Complete the flow-chart below.

Write **NO MORE THAN ONE WORD** for each answer.



**PART 3      Questions 21–30**

**Questions 21–27**

*Which student do the statements below refer to?*

- |          |         |
|----------|---------|
| <b>A</b> | Manish  |
| <b>B</b> | Suzanne |
| <b>C</b> | William |

*Write the correct letter, **A**, **B** or **C**, next to Questions 21–27.*

- 21** This student decided to study culinary, rather than office equipment.
- 22** Manish particularly admired this student's report.
- 23** This student learned some technical vocabulary.
- 24** This student pointed out a problem with the equipment they had chosen.
- 25** This student failed to meet the project deadline.
- 26** This student's report was singled out for the breadth of information it covered.
- 27** This student's report will need some rewriting.

**Questions 28–30**

*Complete the sentences below.*

*Write **NO MORE THAN TWO WORDS** for each answer.*

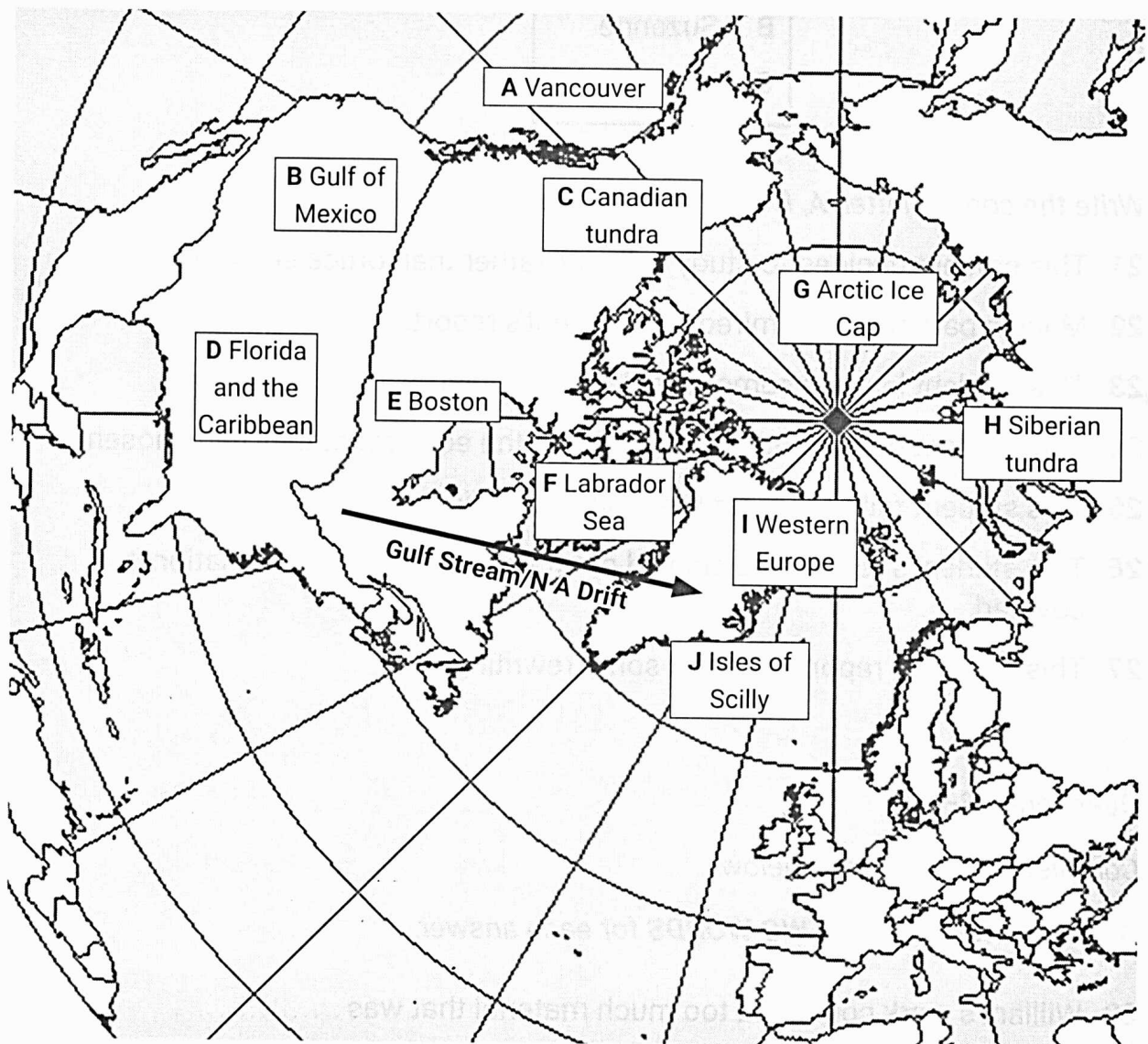
- 28** William's work contained too much material that was .....
- 29** Suzanne's essay included too much information from ....., non-academic sources.
- 30** Manish's writing was too .....

**PART 4**      **Questions 31–40**

**Questions 31–35**

*Which place matches each description?*

*Choose your answers from the map, and write the correct letter, A–J, next to Questions 31–35.*



- 31 The source area for the majority of the Gulf Stream waters.
- 32 A location that currently enjoys mild, frost-free winters.
- 33 A location that currently suffers severe winters.
- 34 A place with a climate similar to Western Europe.
- 35 The most significant source of permafrost melt-water.



Questions 36–40

Complete the sentences using **NO MORE THAN TWO WORDS** for each answer.

**Processes which may lead to climate warming in the North Atlantic area.**

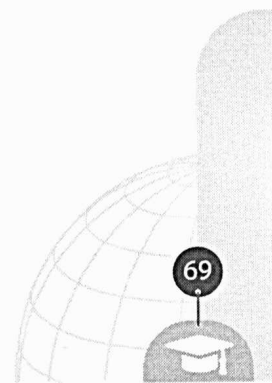
- 36 Melting ice sheets means less of the ..... is reflected back into space.
- 37 The thawing of permafrost will result in the release of ....., a powerful greenhouse gas.

**Processes which may lead to climate cooling in the North Atlantic area.**

- 38 Massive ..... from ice melt, river flow and increased rainfall could significantly lower the salt content of Arctic waters.
- 39 Continued freshening of Arctic waters could, at its most extreme result in the ..... of the Gulf Stream.

**Processes that don't lead to either a warming or a cooling of climate.**

- 40 Evidence suggests that the Gulf Stream and North Atlantic Drift are powered mainly by the ....., so the speaker suggests they will not be stopped by global climate change.



## READING

### READING PASSAGE 1

You should spend about 20 minutes on Questions 1–13, which are based on Reading Passage 1.

Questions 1–4

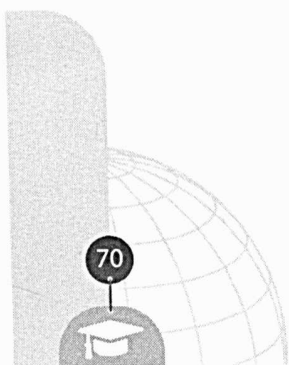
Reading Passage 1 has four sections **A–D**.

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

Write the correct number, **i–viii**, in boxes 1–4 on your answer sheet.

- i A new way of discovering your stress levels
- ii Stress interferes with one of the brain's natural processes
- iii Stress levels among young people in education
- iv The positive and negative effects of stress
- v The reasons stress damages appetite
- vi The difficulties of diagnosing stress
- vii The importance of reducing stress in society
- viii How computer use affects stress levels

- 1 Section A
- 2 Section B
- 3 Section C
- 4 Section D



## New findings on stress

- A** In today's highly pressured world, most people are familiar with the physical symptoms of stress. Stress is a natural physical and mental reaction to life experiences, which very few people can avoid completely. Anything from everyday responsibilities like work and family to serious life events such as illness, divorce, or the death of a loved one can trigger stress. For immediate, short-term situations, stress can be beneficial to your health. Your body responds to stress by releasing hormones that increase your heart and breathing rates and ready your muscles to respond. However, if your stress levels stay elevated for longer period, it can be extremely bad for your health. Chronic stress can cause a variety of symptoms including anxiety, depression, headaches, and an inability to sleep.
- B** In addition to these symptoms, stress can cause a craving for 'comfort food', which is usually high in calories. Researchers at Garvan Institute of Medical Research in Sydney have found that stress can cancel out the brain's natural response to feeling full, leading to non-stop reward signals that lead us to eat more tasty but unhealthy food. This occurs in a part of the brain called the lateral habenula, which when activated usually lessens these reward signals.

What normally happens is that when we have eaten enough, the pleasure gained from eating diminishes. When stress cancels out the brain signals telling us we are full, the brain is continuously rewarded for eating. The Garvan team have demonstrated that chronic stress can lead to increased food intake as well as a preference for sweet, high calorie food, causing weight gain and even obesity. This research highlights how crucial a healthy diet is during times of stress.

In stressful situations it is usual to be hyperactive and the feeling of reward has a calming effect. On such occasions, a boost of energy through food is useful. However, when stress is experienced over a long period of time, it tends to lead to excess calorie intake, which is bad for the body. These findings clearly identify stress as a cause of eating habits that can override the brain's natural ability to balance energy. The researchers emphasise the importance of avoiding a stressful lifestyle, and if you are dealing with long-term stress the absolute necessity of eating a healthy diet.

- C** It may seem strange, but some people who are suffering from stress are not aware that this is what is happening to them. The physical and mental damage stress causes will be affecting them without their knowledge, which means they do not take steps to manage their stress. Most stress is work-related. In the UK, for example, 79% of working people say they frequently feel stressed. Researchers at ETH Zurich are taking a novel approach to diagnosing stress in the workplace. They have used machine learning to develop a model that can tell how stressed an employee is from the way they type and use their mouse.

They have found that the way someone types on their keyboard and moves their mouse seems to be a better way of assessing stress levels than heart rate. These findings could potentially be used to predict and prevent stress in the workplace early on. The study shows that people who are stressed move the cursor more often and less precisely and cover longer distances on the screen. Relaxed people, on the other hand, take shorter, more direct routes to reach their destination and take more time doing so. Moreover, people who feel stressed in the office make more mistakes when typing. They write quickly but with many brief pauses. Relaxed people take fewer but longer pauses when typing on a keyboard.

The researchers are aware of potential problems with the app they are developing to monitor stress levels. Although their aim is to help employees check their stress levels and take appropriate action, the technology could potentially be used by companies to spy on their staff. Users would need to be completely confident that their data were protected. If this private data were to get into the wrong hands, it could actually contribute further to stress levels, which the developers agree would be unacceptable.

- D** Many experts believe that chronic stress is not given the attention it deserves. There are calls for it to be prioritised in education and workplaces. Both students and employees should be taught to monitor and deal with stress, and society as a whole should continually look for ways to make life less stressful. For example, teachers' unions and headteachers should consider whether the large number of examinations students take are all necessary. Employers should be aware that increasing stress on their staff is likely to result in higher staff turnover and more days lost due to sickness. Stress is the curse of the modern world but at least some of it is avoidable. Creating a less stressful life is not only possible but essential for a healthy, happy population.

Questions 5–9

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

In boxes 5–9 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

- 5 It is only long-term stress that causes health problems.
- 6 The lateral habenula is less effective when a person is stressed.
- 7 After a period of comfort eating, the body craves healthy food.
- 8 Unconscious stress does less harm than stress we acknowledge.
- 9 The app developed in Zurich is for workers who use computers.

Questions 10–13

Complete the notes below.

Choose **NO MORE THAN TWO WORDS** for each answer.

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

Garvan Institute of medical research	ETH Zurich
Stress causes the brain to receive continuous <b>10</b> ....., causing people to overeat.	The technology employed in this research is called <b>12</b> .....
The findings of this study recommend a <b>11</b> ..... for people with chronic stress.	The established way of measuring stress levels through <b>13</b> ..... is less effective than monitoring stress by looking at the way workers use computers.

## READING PASSAGE 2

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

### Droughts in Europe

- A** In the summer of 2022, Europe suffered its worst drought in 500 years. All across the continent, rivers and reservoirs ran dry. The winter had seen inadequate rainfall, and then there were a series of heatwaves through the summer months. Simon Parry of the UK Centre of Ecology and Hydrology called it a 'perfect storm of conditions'. The dry weather caused millions of trees to go into survival mode, shedding leaves to conserve water and energy. In many parts of Europe, summer looked more like autumn. Crops withered with farmers reporting a fall of around 16% in the yield of maize, soya beans and sunflower seeds.
- B** Energy supplies across the continent were also affected. In France, nuclear power plants had to reduce their output because there wasn't enough water to cool their reactors. Water levels on the river Rhine in Germany and the Netherlands made it challenging to transport coal and petrol by boat. Many barges, which carry both fuel and vital raw materials for industrial giants such as steelmaker Thyssen and chemical company BASF, are already operating at about 25% capacity, raising shipping costs up to fivefold. Norway had to stop exporting power due to its reduced ability to generate hydropower. The river Danube passes through at least ten countries and provides them with both power and drinking water, and the drought has caused hardship in many of these places.
- C** Many of the areas the iconic rivers of Europe pass through, depend heavily on tourism, particularly in the summer months. The Loire river, for example, passes through several important cities in France like Nantes, Orléans, and Tours. The river serves a well-known wine-producing region and offers river boat cruises for tourists who come from all over the globe to enjoy the beautiful scenery. The river Rhine is also a popular destination for river cruises, but at one key location, Kaub in Germany, water levels dropped to just 36 centimetres, making it impossible for ships to pass. This resulted in passengers being transported by bus to their next location. Clare Weedon of Brighton University points out that just as European river cruises are increasing in popularity, they are being threatened by drought. She predicts this may have a detrimental effect on this form of tourism.



- D** The drought is also catastrophic for fish and other species which live in Europe's rivers. Jean-Philippe Couasn , of the local Federation for Fishing and Protection of the Aquatic Environment in France's Burgundy region, reports that many species of fish have died in the river Tille. Normally, an average of about 8,000 litres of water per second, flow in this river, but currently it is almost zero. He added that, without significant rain, the river would continue to empty, and all the fish would die. Couasn  explained that the fish are trapped upstream and downstream. As there is no water coming in, the oxygen level will keep decreasing as the water volume goes down, leaving fish unable to survive.
- E** Restrictions on water use are regularly put in place across Europe. The French minister for ecological transition, Christophe B chu, warned that France would have to cope with up to 40% less water in coming years, adding that the country was already on a 'state of alert' and restrictions in some areas were fully justified. In the summer of 2023, people in four southern regions have been barred from filling swimming pools or washing their cars, while farmers must cut their water consumption by up to half.
- F** Spain's environment minister, Teresa Ribera, warned of the inescapable reality of the climate emergency, saying the country had to be prepared for longer periods of drought, which are typically followed by flooding. She pointed out that the average amount of available water had fallen by 12% since 1980 with a further drop of between 14% and 40% predicted by 2050. On a more positive note, Simon Parry notes that many countries, including the UK are much more resilient to drought than in 1976, when the worst drought of the 20th century occurred. This means that although water restrictions are unlikely to be as harsh as they were then, they can still cause considerably inconvenience to consumers.
- G** Niko Wanders of the University of Utrecht, too, suggests that Europeans will have to become more aware of drought and ways to cope with it. His work in other parts of the world reveals a different mindset in countries which have always experienced drought. In agriculture as well as domestic settings, people in such regions collect rainwater as a routine activity, rather than allowing it to be wasted as usually happens in Europe. He also suggests that changes to the infrastructure might be needed, such as building massive reservoirs like those found in traditionally drought-prone areas. Clearly, education in water conservation is urgently needed as droughts and long periods of recovery from them are likely to be the new normal.



Questions 14–19

Reading Passage 2 has 7 paragraphs **A–G**.

Which paragraph contains the following information?

Write the correct letter **A–G**, in boxes 14–19 on your answer sheet.

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

- 14 How limitations on water use have changed
- 15 How the drought is affecting manufacturing
- 16 A prediction of an ecological disaster
- 17 The need to change attitudes and behaviour
- 18 Present and future impact on the leisure industry
- 19 What often happens after a drought

Questions 20–23

Complete the summary of paragraphs **B** and **C** using the list of words below.

Write the correct letter **A–H**, in boxes 20–23 on your answer sheet.

The droughts have affected the transportation of fuel **20** ....., which is a common means of moving it across the continent. Low water levels mean that vessels cannot be loaded to their normal capacity, which has caused a dramatic increase in the **21** ..... of moving goods. Countries that rely on **22** ..... are badly affected, including one country that has had to cease exports. Cruise ships have also had difficulty navigating the most picturesque waterways of Europe, which has had a negative impact on **23** ..... One expert points out that the drought has come at the worst possible time for the owners of cruise ships.

- |                         |                        |                   |
|-------------------------|------------------------|-------------------|
| <b>A</b> coal           | <b>D</b> impossibility | <b>G</b> by river |
| <b>B</b> tourism        | <b>E</b> hydropower    | <b>H</b> cost     |
| <b>C</b> transportation | <b>F</b> waterways     |                   |

## Questions 24–27

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

Write the correct letter in boxes 24–27, on your answer sheet.

**24** 'A perfect storm of conditions' refers to:

- A** trees losing their leaves at the wrong time of year.
- B** the windy and wet weather of the previous winter.
- C** insufficient rain in winter and high summer temperatures.
- D** the fact that both rivers and reservoirs had no water.

**25** Jean-Philippe Couasné suggests that:

- A** there is hope for some species of fish.
- B** the lack of oxygen is killing the fish.
- C** even heavy rainfall will not save the fish.
- D** the river Tille is a slow-flowing river.

**26** Christophe Béchu:

- A** disagrees that farmers should use less water.
- B** wants to extend the restrictions on water use.
- C** plans to ban the use of swimming pools.
- D** outlines actions taken by the government.

**27** Niko Wanders describes:

- A** Europeans' habit of water conservation.
- B** differences in water use in homes and on farms.
- C** the need for a change in attitude.
- D** how Europe can help drought-prone regions.

### READING PASSAGE 3

You should spend about 20 minutes on Questions 28–40, which are based on Reading Passage 3 below.

## Gem mining in Sri Lanka

Sri Lanka rivals Brazil and Russia for the honour of being the most prolific provider of coloured gemstones in the world. Sapphires, rubies, and garnets are among the precious and semi-precious stones found on this island in the Indian Ocean. When you compare this tiny nation with the huge area covered by the other two countries, it seems amazing that it produces so many high-quality gemstones. Sri Lanka used to be known as '*Rathna Dweepa*', which means 'Island of Gems'. Situated off the southern coast of India, this unique island was mentioned in legends and stories across the ancient world including those of Marco Polo, who tells of a ruby as big as the palm of your hand owned by the king.

There has been gem mining in Sri Lanka for at least 2000 years, so there is a wealth of local information and tradition available to local miners. Locating the best place to mine for gems is largely done based on prior experience, folklore and tradition. The rivers and streams are a good place to start, as gemstones that have broken free from rocks are washed there by the rain. Many mines are established informally after farmers discover a gem accidentally when turning over the lush fertile soil. The land will then temporarily become a series of mines. As Sri Lankan gem mining does not use toxic chemicals or heavy machinery, the land will soon be returned to arable use.

Casual gem mining is almost routine in the Ratnapura district, where most of Sri Lanka's gems are found. The mining methods used in Sri Lanka are specifically developed and suited to the terrain. Compared to other gem producing countries, some of the techniques are simple and no longer used elsewhere. However, they are also safe, effective and relatively inexpensive, which permits the greater involvement of less well-off rural communities. The Sri Lankan government has in fact banned the use of heavy, mechanised mining methods in gem mining. This not only prevents the rapid loss of an irreplaceable resource, but also maintains an alternative source of revenue for much of the rural population who otherwise would be dependent almost entirely on agriculture.

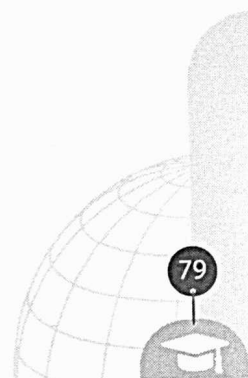
One of the simplest ways of extracting gems is river dredging. This involves raking up the river gravel or '*illam*' into a shallow pile using a long-handled iron rake-like tool known as a '*mammoty*'. Fine particles are washed away by the river, leaving the coarser gravel to be picked through manually by workers. There is also widespread illegal dredging of rivers, where locals use a gravel bar, an artificial construction, which can damage riverbanks and affect water supply.

Where it is suspected that gems are under the land rather than in water, shallow gem pits are constructed by simply digging down until the '*illam*' is reached. The '*illam*' is then extracted and washed before being handed to an experienced sorter who picks out the gem minerals. All the labour is carried out by hand, using hand tools and woven baskets, and the '*illam*' is washed as soon as it is extracted. Washing is usually carried out using water extracted from the pit or, more rarely, from nearby streams and rivers. When it is a legal, licensed operation then the pit is usually filled back up once mining has finished, particularly when pitting is taking place on agricultural land. This rarely happens if the mining is unlicensed and illegal.

If the '*illam*' is found at a depth greater than about 3 metres then the use of open pits is impractical, and deep, vertical shafts are constructed. Wood, bamboo, and leaves support the walls and numerous cross beams are placed to brace the wall supports and to provide access for the workers. Due to the greater depth, manual extraction of water is not practical and usually an old diesel engine from a truck or bus is used to power a pump. Furthermore, a ventilation pipe, which doubles as a means of communication with those working underground, is used to ensure an adequate air flow to the miners. Lighting is provided by oil lamps or wax candles although this does lead to additional ventilation problems. Usually, a manual winch is used to haul the gem bearing '*illam*' to the surface.

Almost all the processing of the '*illam*' (washing and cleaning), gem picking and sorting is carried out by hand. Large wicker baskets with a particular lipped design are used. A portion of the gem gravel is placed in the basket which is then dipped in and out of the water with a gentle swirling action which washes the fine clay, silt, and sand away from the heavier gem minerals which tend to sink towards the base of the sediment. Eventually a skilled washer will reduce the initial '*illam*' down to a heavy mineral concentrate which should contain any gems that are present.

Gemstones are worth millions of rupees to the Sri Lankan economy every year. Perhaps the most famous stone to have come out of this island nation is the iconic sapphire in UK Princess Diana's engagement ring, currently owned by Catherine of Wales, King Charles III's daughter-in-law. The marvel of the Sri Lanka gem industry is that it yields so many colourful stones with minimal damage to the environment and that ordinary people also benefit from opportunities for casual mining.



**Questions 28–31**

Look at the mining-related activities and the list of statements below.

Match each activity with the correct statement.

Write the correct letter **A–H** in boxes 28–31 on your answer sheet.

**28** River dredging

**29** Extraction (shallow pits)

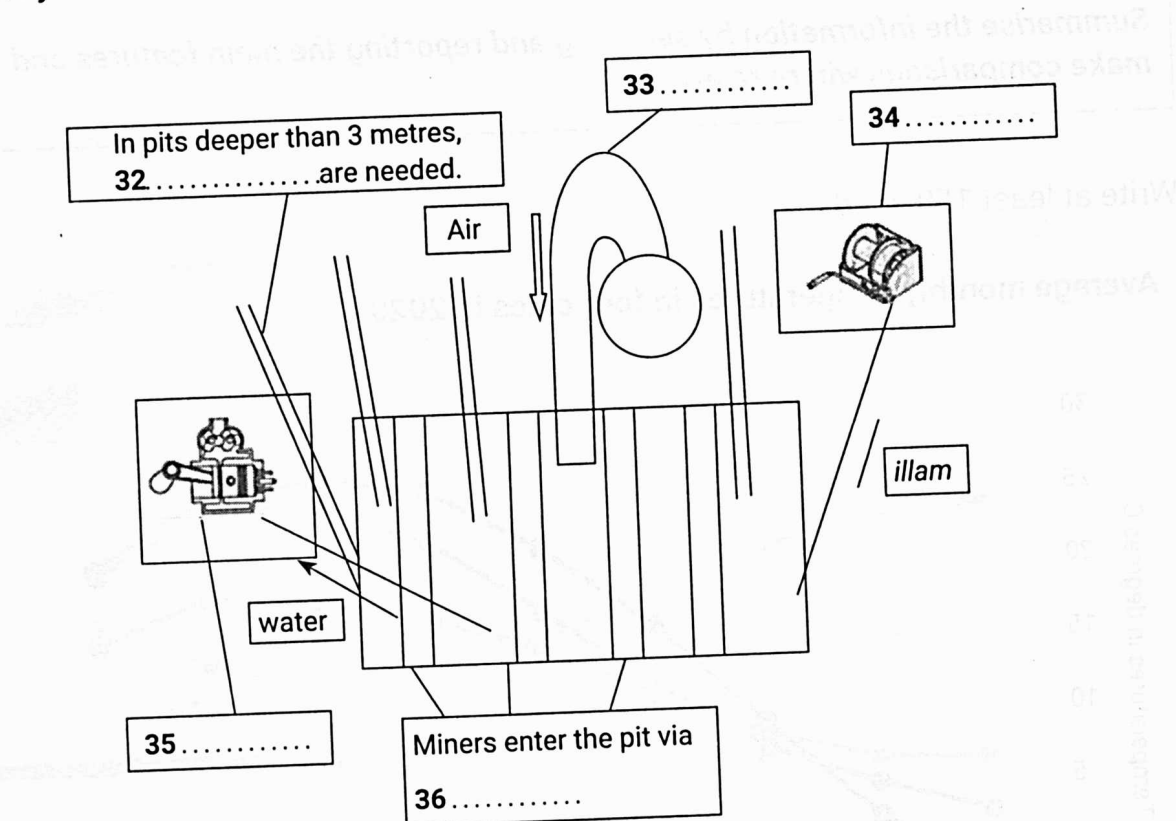
**30** Extraction (deep pits)

**31** Processing

- A** Special equipment is needed to bring the 'illam' up
- B** Vehicles are required to carry out this activity
- C** Washing and separating can be done by any worker
- D** Causes problems for locals when not done lawfully
- E** Only water from rivers is used for washing
- F** Washing the 'illam' takes place without delay
- G** This uses a special container and hand movement
- H** The water extracted is returned to the source

Choose **NO MORE THAN TWO WORDS** for each answer.

Write your answers in boxes 32–36 on your answer sheet.



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

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

- 37** What was the former name of Sri Lanka?

What was the temperature of the water?

.....

- 38** Which group of people sometimes find gems by chance?

Which group of people?

- 39 What is the local name for the piece of equipment used in legal river dredging?

\_\_\_\_\_

- 40 Who does the best-known blue sapphire from Sri Lanka belong to now?

.....



## Practice Test 4

### LISTENING

#### PART 1 Questions 1–10

Questions 1–7

Complete the form below.

Write **NO MORE THAN TWO WORDS AND/OR A NUMBER** for each answer.

Dolphin Babies Swimming Club Registration Form	
Referred by	Friend
1 Child's name:	
2 Age: ..... months	
Address:	25, Bishop's Road
3 Phone number:	
4 Day of class:	
5 Time of class:	
No of classes booked:	8
6 Start date:	
7 Total cost (£)	

Questions 8–10

Complete the notes below.

Write **NO MORE THAN TWO WORDS AND/OR A NUMBER** for each answer.

Maximum number of children per class: **8** .....

Relationship to child of adult who will be in the pool with them: **9** .....

Photos for sale to parents: at the end of each **10** .....



**PART 2      Questions 11–20**

**Questions 11–14**

Complete the sentences below.

Write **NO MORE THAN TWO WORDS** for each answer.

- 11 The speaker explains that they are having this meeting because there are more ..... than usual.
- 12 This food bank is different from most because clients do not require a ..... from a professional person.
- 13 By signing a receipt, clients verify that they have a ..... for the food parcel.
- 14 Food bank staff at the ..... check how many people the client lives with.

**Questions 15–17**

Choose **THREE** letters, **A–G**.

Write the correct letter, **A–G**, next to Questions 15–17.

Which **THREE** things does the speaker say about the food bank?

- A Children cannot be brought to the food bank.
- B Only people with children can receive free food.
- C People with children under 17 go to a different area.
- D Only children are given fresh fruit and dairy products.
- E New workers are supported by someone experienced.
- F Connie and Paul work in a different room.
- G The food bank needs people with computer skills.

15 .....

16 .....

17 .....

### Questions 18–20

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

**18** When can clients choose the items they receive?

- A** If they arrive early enough.
- B** If they have a special diet.
- C** If they dislike an item.

**19** According to the speaker, food bank clients:

- A** often want to swap items.
- B** prefer vegetarian food.
- C** accept only what they will use.

**20** According to the speaker, food bank clients:

- A** appreciate the help.
- B** are all unemployed.
- C** often behave badly.



### PART 3 Questions 21–30

#### Questions 21–24

What does the tutor say about the product or service students need to market?

- A It must have this feature.
- B It mustn't have this feature.
- C It may or may not have this feature.

Write the correct letter A, B or C, next to Questions 21 to 24.

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

- 21 Not currently available in Britain.
- 22 Designed or made in the student's country.
- 23 Similar to other products already on sale in the UK.
- 24 Healthier than other similar products.

#### Questions 25–28

Complete the summary below.

Write **NO MORE THAN THREE WORDS** for each answer.

An example of a service a student marketed is Feng Shui. After visiting clients' homes or workplaces, she told them where to move the **25**..... to, in order to allow the life force to flow freely. Like other Eastern concepts, Feng Shui is now fairly **26**..... in the UK.

David points out that British people don't eat a wide variety of **27**..... He doesn't think the Chinese specialty **28**..... would be popular in the UK.

#### Questions 29–30

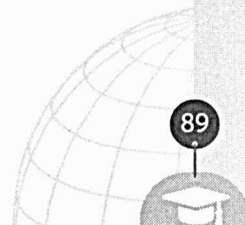
Choose **TWO** letters **A–F**. Write the correct letter, **A–F** next to Questions 29–30.

What **TWO** points does the tutor make about Maryam's beauty product idea?

- A There is nothing similar on the UK market.
- B She should focus on just one product.
- C Creams and lotions don't usually sell well.
- D The products seem to be attractive.
- E She needs to advertise effectively.
- F Hair care products would sell better.

29 .....

30 .....



**PART 4      Questions 31–40**

**Questions 31–34**

Which species matches each description?

Choose your answers from the box and write the correct letter, **A–C**, next to Questions 31–34.

- |                  |
|------------------|
| <b>A</b> Turtles |
| <b>B</b> Lizards |
| <b>C</b> Snakes  |

- 31** Many people do not know how endangered they are.
- 32** They no longer need a waterside habitat.
- 33** They may be viewed more favourably than other reptiles.
- 34** They have the highest proportion of endangered species.

**Questions 35–37**

Answer the Questions below.

Write no more than **ONE WORD** for each answer.

- 35** What is the greatest risk faced by reptiles?

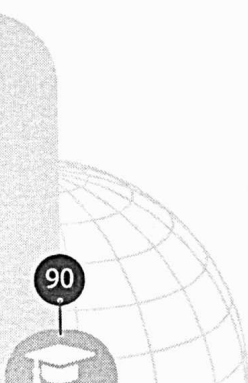
.....

- 36** What do reptiles move from place to place?

.....

- 37** What does the speaker believe to be the most important way to protect reptiles?

.....



Questions 38–40

Complete the table below.

Write no more than **TWO WORDS OR A NUMBER** for each answer.

Examples of endangered reptile species			
	Orinoco crocodile	Madagascar big-headed turtle	Ornate ground snake
Reason for being threatened	Hunted for their skin	Hunted for their 39 .....	Invasive species, e.g. mongoose
Estimated number left in wild	250–500	10,000	A maximum of 40 .....
Conservation efforts	Has had 38 ..... since the 1970s. Captive breeding.	Education, captive breeding, reintroduction.	Captive breeding.

## READING

### READING PASSAGE 1

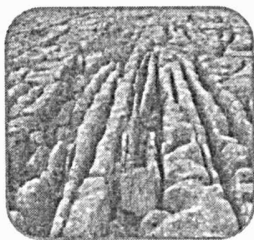
You should spend about 20 minutes on Questions 1–13, which are based on Reading Passage 1 below.

#### How to Draw a Geological Map

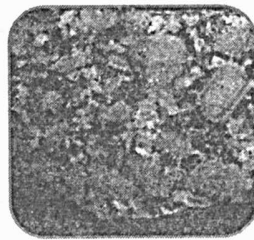
For keen amateur geologists, there's no better, practical way of increasing your knowledge, understanding and enjoyment of the subject, than to draw a geological map of an area that interests you. You will need a base map, a compass / clinometer<sup>1</sup>, a magnifying lens, a bottle of diluted acid, a geological hammer for splitting rocks, and bags to collect samples. Before starting your mapping, it is worth researching the local geology, so you know what to expect.



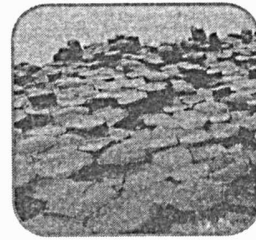
inclined bedding



limestone



granite



basalt columns

The first thing to record is the rock type, or lithology. There are three main types of rock occurring on the Earth's surface: first, igneous rocks which formed from molten rock, either deep underground ('magma') or on the surface as 'lava' from volcanoes (on land or under the sea); second, sedimentary rocks, which are formed by the action of water or wind, such as rivers, glacier ice, desert wind, or the sea; and lastly metamorphic rocks, which can be either igneous or sedimentary rocks which have been altered by heat and pressure deep within the Earth's crust.

Sedimentary rocks are often found in bands, or 'bedding' and can be classified by the size of their particles. The finest particles form clay or shale (clay hardened by pressure). Silty clays or siltstones have a certain amount of fine, harder particles which can be felt between the fingers, while rocks with visible sand particles are examples of sandstone. When the particles are between 2mm across to pebble-sized or larger, the rocks are known as conglomerates or breccias. Conglomerates are rounded and formed in rivers or the sea, while breccias have sharp sides and are often of volcanic origin.

Another common type of sedimentary rock does not appear to be made of particles but appears crystalline. This is limestone and is formed of the mineral calcite (calcium carbonate) produced by the shells of sea creatures. It is soluble

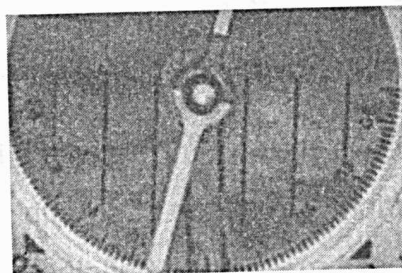
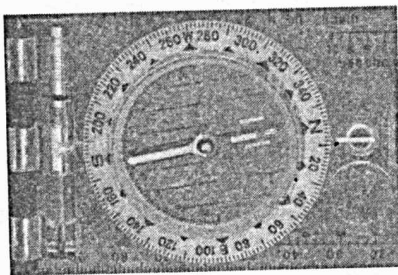
<sup>1</sup>A clinometer measures the angle of a rock surface in degrees from the horizontal.

in acid, so observing bubbles of carbon dioxide while applying a little dilute acid on a freshly broken surface will help with identification. You can also observe the very distinctive deep holes or fissures found on many limestone surfaces which are known as 'limestone pavement'. These fissures are the result of the slightly acidic nature of rainwater

Most crystalline rocks, however, are igneous. When clear, or nearly clear crystals of quartz are present, the rock is referred to as 'acidic'. The best-known example of this is granite, a coarsely crystalline rock which forms from molten material deep in the Earth's crust, while quartz-free varieties are known as gabbro. When molten rock reaches the surface, especially in or near oceans, the rocks it forms are generally much darker, quartz-free rocks such as basalt.

Metamorphic rocks are also often crystalline, such as the pure white marble used for sculptures, and show the effect of temperature and pressure. One example of this is slate, which can be split into thin, even sheets and had been used for centuries on the roofs of buildings.

The structure of the rocks also needs to be recorded to complete your map. Sedimentary rocks are usually formed horizontally, so if their beds are sloped or inclined, it can give us a good indication of the underlying structure and how geological forces have affected the area in the past. Recording this allows you to predict both the pattern of rocks deeper underground and when the same rock may be seen again on the surface. Two measurements need to be recorded and the data put on your base map. The first is the 'strike' of the bed, how it is orientated in space; this is the line of no inclination and can be found using a clinometer, with the orientation measured with a compass. The second, incline of the bed (or 'dip') is measured at  $90^\circ$  to the strike line. Both measurements can be placed on your map in this way:  $\text{---}_{12^\circ}$  (the longer line indicating the 'strike' and the shorter the 'dip' with its value added).



*In this diagram the compass has recorded a strike direction of  $008^\circ$  (just east of magnetic north), with the clinometer measuring a dip of  $12^\circ$ .*

Once you have recorded the boundaries of the different lithologies you have observed onto your base map, you can use your strike and dip data to work out the distribution of each rock type in areas where it is not exposed at the surface. If you find any fossils in your sedimentary rocks, these can give an indication of the age of the rocks using one of a wide range of available reference works.



### Questions 1–7

Complete the table below.

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

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

**Rock types and the environments in which they are formed**

Sedimentary rocks				Igneous rocks		
made of particles				made of crystals		
particle size fine → coarse				crystal size fine → coarse		
clay or shale	1 .....	sandstone	2 ..... or breccia	3 .....	basalt	granite or 4 .....
formed mainly in rivers or the sea				formed mainly in 5 .....	formed mainly in 6 .....	formed mainly in 7 .....

### Questions 8–13

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

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 Igneous rocks are only formed deep in the earth's crust.
- 9 The presence or absence of certain minerals helps identify some rock types.
- 10 Igneous rocks make good building materials.
- 11 The oldest sedimentary rocks are found below more recent beds.
- 12 Rock strike is always perfectly horizontal.
- 13 Not all rocks contain fossils.

## READING PASSAGE 2

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

Questions 14–20

Reading Passage 2 has eight paragraphs, **A–H**

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

Write the correct number, **i–xi**, in boxes 14–20 on your answer sheet.

### List of Headings

- i Types of food acquisition
- ii Stable farming communities
- iii Food is money
- iv The origin of private ownership
- v Food and income distribution
- vi Conflicting interests
- vii Natural hazards
- viii Food and economic indicators
- ix Staple foods
- x Types of food production
- xi Questions about ownership

Example

A

Answer

iii

14 Paragraph B

15 Paragraph C

16 Paragraph D

17 Paragraph E

18 Paragraph F

19 Paragraph G

20 Paragraph H

## Food and Economics<sup>1</sup>

- A** Where there is money, there are counterfeiters. Pre-contact Aztecs<sup>2</sup> had to keep an eye out for fake cacao beans as they accepted their wages and made their market purchases. A porter whose daily wage of one hundred beans turned out to include fakes made from wax, dough or avocado pits, might have trouble buying those two small rabbits, costing thirty beans each.
- B** Among the Aztecs and other ancient American people, food was quite literally currency. The same is true for historic Koreans, who paid their taxes in rice, while medieval Europeans gave pepper in payment. But food is part of economics in many different ways. If you want to know whether prehistoric people had a concept of private property, look for where they hid their food supplies. If you are curious about the origins of urban commercialism, think about when people began to trade extensively in staple foods – the most basic of market commodities – as opposed to prestigious delicacies. Reconstructing past foodways<sup>3</sup> allows us to explore topics including labour costs and supplies, the extent of professional specialisation, resource distribution, and more.
- C** Food production and procurement are huge topics. ‘Production’ refers to the raising of domesticated plants and animals. By ‘procurement’ people generally mean either the collection of wild resources or the acquisition of foods from other groups of people, via trade or exchange. Important questions include how food was produced or procured, the foods people produced / procured, and the quantity of the foods generated.
- D** Different food production regimes require different amounts and types of labour, have different ecological impacts, and tend to lead to – and be caused by – different social outcomes. Consider, for example, the contrasting implications and opportunities afforded by small-scale household mixed farming (individual families tending their own fields and livestock) as opposed to large-scale, specialised crop farming and pastoralism (where planters and herders are spatially and socially distinct). People may produce the exact same foods using either strategy. They may not, however, lead broadly similar lives.

<sup>1</sup>Modified from: Twiss KC 2019 *The Archaeology of Food: Identity, Politics and Ideology in the Prehistoric and Historic Past*. Cambridge: Cambridge University Press.

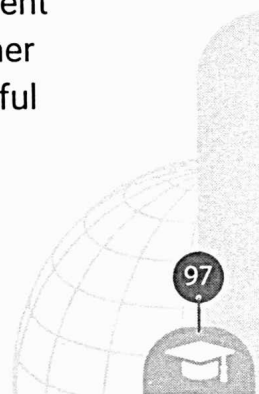
<sup>2</sup>The term ‘pre-contact Aztecs’ refers to a group of people living in Central America before contact with Europeans in the early sixteenth century.

<sup>3</sup>Foodways – the eating habits and culinary practices of a people, region, or historical period.

- E** In small-scale household farming, livestock often graze on cropland that is not currently in use. The animals stay relatively close to home, walking 'banks' of meat, milk, blood, fat, manure, and other products. They convert unneeded or spoiled crops into edible food, and their dung fertilises the fields. Households are largely self-sufficient, although they rely closely on each other for social reasons, for periodic help with large projects, and as backups in case of emergency. Villages thus consist of multiple groups of people with roughly similar economic interests and identities.
- F** In contrast, specialised pastoralists move large herds long distances to pasture, potentially spending weeks or even months away from farmsteads and fields before returning to exchange their animal products for farmers' grain. Cultivation and herding are thus separate pursuits, potentially conducted by different households or kin groups. Specialised herder/cultivator economies are associated with distinct social identities and potential social conflict, despite mutual dependence on exchange. Such herder-farmer conflicts may have large-scale political and social implications. It has been suggested, for example, that these conflicts underpin the origins of empire in Asia. Conflicts between nomadic herders and farmers with permanent settlements led both groups to grow larger. The nomads needed greater numbers to continue raiding the farmers' crops, while the farmers needed more people to defend themselves and their food. Over time, both groups expanded their territories, eventually resulting in nomadic steppe<sup>4</sup> confederations confronting settled agrarian<sup>5</sup> empires.
- G** How intensively people cultivate their land also has profound social implications. When a significant amount of labour was used to improve farmland, farmers were essentially investing in the land by adding value to it, which further enhanced their claims to ownership. This may help answer serious questions about when people first began to believe that land was something that could be owned, or to which access could be limited or denied.
- H** One reason why it was seen as important for people to own the land where they produced or acquired their food is because some patches of land are more fertile than others. As a result, different plots provided different amounts of food, allowing some families to become considerably richer than others. Moreover, food surpluses produced by relatively successful

<sup>4</sup>Steppe – A huge grassy plain with very few trees

<sup>5</sup>Agrarian – Relating to farming or agriculture



households could be shared out to less productive ones, incurring debts or obligations that the less productive families carried into the future. A system of food production can, in this way, set the stage for lasting social inequalities.

### Questions 21–26

Do the following statements agree with the claims of the writer in Reading Passage 2?

In boxes 21–26 on your answer sheet, write

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

- 21 Different ways of producing food led to different political and social structures.
- 22 Farmers increasingly resented the demands of the pastoralists.
- 23 Both farmers and pastoralists are mainly involved in food 'production'.
- 24 Increased population sizes led to conflict.
- 25 Food stuffs are still used instead of money today.
- 26 Different qualities of land led to income inequalities.





## READING PASSAGE 3

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

### Colour Blindness

Colour blindness is a condition where sufferers cannot recognise different colours or distinguish different colour shades or brightness. Not sensing the difference between red and green is the most common, though some cannot distinguish blue and yellow, while in complete colour blindness, which is rare, colours can't be distinguished at all. It is estimated that there are over 300 million colour blind people in the world, though it is more common in areas with a higher proportion of white, European populations, while it is relatively rare in sub-Saharan Africa. On average, one in twelve men have the condition, while it affects just one in two hundred women.

Red-green colour blindness is a genetic disorder and is generally passed from mothers to sons. The gene responsible is carried on one of the X sex chromosomes. Since men have only one X chromosome, if a man's X chromosome carries the condition, he will be colour blind. A woman can have one of two types of X chromosomes: either two normal X chromosomes or one normal and one carrier X chromosome. If a woman has two normal X chromosomes, she will not be colour blind or a carrier. On the other hand, if she has one normal and one carrier X chromosome, she can pass on the condition to her children. There is a 50% chance that her sons will be colour blind, and a 50% chance that her daughters will be carriers. Rarely, a woman may inherit carrier genes from both her mother and her father, which means she will be colour blind herself and will pass it on to her sons, while her daughters will also be carriers. Blue/yellow and complete colour blindness are carried on non-sex chromosomes and affect both men and women equally. Some may become colour blind later in life as a result of diseases, such as diabetes, or as a side effect of medication.

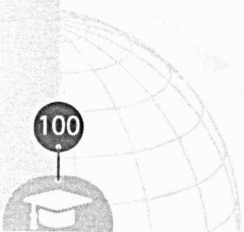
The back of the eye, or 'retina', has two sorts of light-sensitive nerve cells: rods and cones. Rods work in low-light conditions and help with night vision, while cones work in daylight and are responsible for colour discrimination. There are three types of cone cells, one of which sees red light, another green, while the third detects blue light. When combined, the brain can perceive the colour of an object: this is referred to as '*Trichromacy*'. Colour blindness occurs when one or more of the signals from the cones is 'faulty' (known as '*Anomalous Trichromacy*'), while in severe cases, one or more cones do not work at all. Reduced sensitivity to red light is known as '*Protanopia*', to green light is

'Deuteranopia' and to blue light, which is extremely rare, 'Tritanopia'. When no colour can be perceived, it is known as 'Monochromacy' or 'Achromatopsia'.

Colour blindness can have an impact on many aspects of daily life, including education and business where colour is used extensively in documents and visual materials. In addition, colour blindness can restrict career choice. For example, in some roles in the transport sector or armed forces, colour blindness could create safety risks. Colour blindness can also impact day-to-day activities such as choosing clothes and applying make-up. It may also make it difficult to determine whether fruit is ripe enough to eat or if meat is properly cooked. Many people with impaired colour vision develop alternative coping strategies such as touching or smelling items or using a cooking thermometer to see if meat is cooked through.

Several potential treatments for colour blindness have been suggested such as EnChroma glasses, which have been widely advertised as a way to 'ease red-green colour blindness.' However, the company admits that the glasses are not a complete cure and may not be effective in severe cases. Studies have shown that while the glasses may improve the ability to distinguish some colours, they can also make it more challenging to identify other colours, causing 'new difficulties in colour perception.' In recent years, researchers have begun looking at the potential of gene therapy to provide a cure, although this has not yet gone beyond experiments with animals. In the meantime, there are a number of strategies that can be helpful for those with colour blindness. Among the most useful are a set of smartphone apps which can help users to identify colours, and the World Wide Web Consortium has published a set of guides on colour use to make web pages clearer to those suffering from colour blindness.

It may be years before an effective treatment for colour blindness is developed. Yet, a lot can be done to lessen its impact. For example, schools can ensure that classrooms contain lots of natural light as this affects the way colours are perceived, and employers can review processes and systems to ensure that they are 'colour blind-friendly'. There are many colour-blind artists and illustrators, some of whom have computer programmes that help them to identify different hues. The 'Colour Vision Defective Pilots' Association' believes that colour blindness does not affect a person's ability to pilot a plane and has been successful in legally challenging a number of employers in the air industry. Colour blindness may be common, but it is not necessarily a handicap.



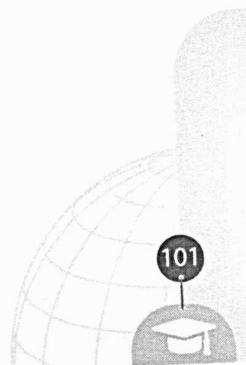


Questions 27–30

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

Write the correct letter in boxes 27–30 on your answer sheet.

- 27** Colour blindness is likely to be least common in:
- A** men of European ethnicity.
  - B** black men.
  - C** women of European ethnicity.
  - D** black women.
- 28** A colour-blind mother will have:
- A** colour-blind sons.
  - B** colour-blind daughters.
  - C** both colour-blind sons and colour-blind daughters.
  - D** neither colour-blind sons nor colour-blind daughters.
- 29** Full colour perception is known as:
- A** achromatopsia
  - B** deuteranopia
  - C** trichromacy
  - D** tritanopia
- 30** Problems associated with colour blindness can best be alleviated using:
- A** EnChroma glasses.
  - B** gene therapy.
  - C** phone apps.
  - D** websites.



Questions 31–40

Complete the summary using the list of words, **A–P** below.

Write the correct letter, **A–P**, in boxes 31–40 on your answer sheet.

**Colour blindness: a condition the world is blind to**

**31** ..... colour blindness is a genetic condition carried by a  
**32** ..... X chromosome, and consequently is most **33** .....  
developed in males. However, **34** ..... blindness, which is less  
common, can be developed in both males and females. Such  
**35** ..... trichromacy results from parts of the eye's **36** .....  
– referred to as 'cones' – do not work correctly. The condition can impact  
daily life, such as when choosing clothes or make-up, or judging whether  
food is ready to eat. However, colour-blind people have developed a  
number of **37** ..... strategies, such as using phone apps to detect  
colour. More seriously, colour blindness is a condition that can prevent  
progress in employment, either when sufferers feel there are restrictions in  
career choice, or when employers impose them. However, pressure groups  
believe simple **38** ..... to current practice is all that is needed to  
cater for colour-blind workers. Meanwhile, research on finding a cure for  
colour blindness continues, including **39** ..... therapy, though this is  
still in its **40** ..... stages.

- |                      |                    |                       |                      |
|----------------------|--------------------|-----------------------|----------------------|
| <b>A</b> rare        | <b>B</b> red-green | <b>C</b> experimental | <b>D</b> diabetes    |
| <b>E</b> anomalous   | <b>F</b> cornea    | <b>G</b> commonly     | <b>H</b> retina      |
| <b>I</b> blue-yellow | <b>J</b> mutant    | <b>K</b> adaptations  | <b>L</b> safety      |
| <b>M</b> trichromacy | <b>N</b> gene      | <b>O</b> coping       | <b>P</b> blue-yellow |

