[PDF + Audio] Cambridge IELTS 16 Academic Ebook with Answers

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Cambridge IELTS 16 Academic Reading Test 1

PASSAGE 1

Why we need to protect polar bears

Polar bears are being increasingly threatened by the effects of climate change, but their disappearance could have far-reaching consequences. They are uniquely adapted to the extreme conditions of the Arctic Circle, where temperatures can reach —40°C. One reason for this is that they have up to 11 centimetres of fat underneath their skin. Humans with comparative levels of adipose tissue would be considered obese and would be likely to suffer from diabetes and heart disease. Yet the polar bear experiences no such consequences.

A 2014 study by Shi Ping Liu and colleagues sheds light on this mystery. They compared the genetic structure of polar bears with that of their closest relatives from a warmer climate, the brown bears. This allowed them to determine the genes that have allowed polar bears to survive in one of the toughest environments on Earth. Liu and his colleagues found the polar bears had a gene known as APoB, which reduces levels of low-density lipoproteins (LDLs) - a form of 'bad' cholesterol. In humans, mutations of this gene are associated with increased risk of heart disease. Polar bears may therefore be an important study model to understand heart disease in humans.

The genome of the polar bear may also provide the solution for another condition, one that particularly affects our older generation: osteoporosis. This is a disease where bones show reduced density, usually caused by insufficient exercise, reduced calcium intake or food starvation. Bone tissue is constantly being remodelled, meaning that bone is added or removed, depending on nutrient availability and the stress that the bone is under. Female polar bears, however, undergo extreme conditions during every pregnancy. Once autumn comes around, these females will dig maternity dens in the snow and will remain there throughout the winter, both before and after the birth of their cubs. This process results in about six months of fasting, where the female bears have to keep themselves and their cubs alive, depleting their own calcium and calorie reserves. Despite this, their bones remain strong and dense.

Physiologists Alanda Lennox and Allen Goodship found an explanation for this paradox in 2008. They discovered that pregnant bears were able to increase the density of their bones before they started to build their dens. In addition, six months later, when they finally emerged from the den with their cubs, there was no evidence of significant loss of bone density. Hibernating brown bears do not have this capacity and must therefore resort to major bone reformation in the following spring. If the mechanism of bone remodelling in polar bears can be understood, many bedridden humans, and even astronauts, could potentially benefit.

The medical benefits of the polar bear for humanity certainly have their importance in our conservation efforts, but these should not be the only factors taken into consideration. We tend to want to protect animals we think are intelligent and possess emotions, such as elephants and primates. Bears, on the other hand, seem to be perceived as stupid and in many cases violent.

And yet anecdotal evidence from the field challenges those assumptions, suggesting for example that polar bears have good problem-solving abilities. A male bear called GoGo in Tennoji Zoo, Osaka, has even been observed making use of a tool to manipulate his environment. The bear used a tree branch on multiple occasions to dislodge a piece of meat hung out of his reach. Problem-solving ability has also been witnessed in wild polar bears, although not as obviously as with GoGo. A calculated move by a male bear involved running and jumping onto barrels in an attempt to get to a photographer standing on a platform four metres high.

In other studies, such as one by Alison Annes in 2008, polar bears showed deliberate and focussed manipulation. For example, Annes observed bears putting objects in piles and then knocking them over in what appeared to be a game. The study demonstrates that bears are capable of agile and thought-out behaviours. These examples suggest bears have greater creativity and problem-solving abilities than previously thought.

As for emotions while the evidence is once again anecdotal, many bears have been seen to hit out at ice and snow — seemingly out of frustration — when they have just missed out on a kill. Moreover, polar bears can form unusual relationships with other species, including playing with the dogs used to pull sleds in the Arctic. Remarkably, one hand-raised polar bear called Agee has formed a close relationship with her owner Mark Dumas to the point where they even swim together. This is even more astonishing since polar bears are known to actively hunt humans in the wild.

If climate change were to lead to their extinction, this would mean not only the loss of potential breakthroughs in human medicine, but more importantly, the disappearance of an intelligent, majestic animal.

Questions 1-7

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

In boxes on your answer sheet, write

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

1 Polar bears suffer from various health problems due to the build-up of fat under their skin.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

2 The study done by Liu and his colleagues compared different groups of polar bears.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

3 Liu and colleagues were the first researchers to compare polar bears and brown bears genetically.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

4 Polar bears are able to control their levels of bad cholesterol by genetic means.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

5 Female polar bears are able to survive for about six months without food.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

6 It was found that the bones of female polar bears were very weak when they came out of their dens in spring.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

7 The polar bear's mechanism for increasing bone density could also be used by people one day.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

Questions 8-13

Complete the table below.

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

*Write your answers in boxes **8-13** on your answer sheet.*

Reasons why polar bears should be protected

People think of bears as unintelligent and **8** _____.

However, this may not be correct. For example:

- In Tennoji Zoo, a bear has been seen using a branch as a **9** _____. This allowed him to knock down some **10** _____.

- A wild polar bear worked out a method of reaching a platform where a **11** _____ was located.
- Polar bears have displayed behaviour such as conscious manipulation of objects and activity similar to a **12** _____.

Bears may also display emotions. For example:

- They may make movements suggesting **13** _____ if disappointed when hunting.
- They may form relationships with other species.

PASSAGE 2

The Step Pyramid of Djoser

14

A.

The pyramids are the most famous monuments of ancient Egypt and still hold enormous interest for people in the present day. These grand, impressive tributes to the memory of the Egyptian kings have become linked with the country even though other cultures, such as the Chinese and Mayan, also built pyramids. The evolution of the pyramid form has been written and argued about for centuries. However, there is no question that, as far as Egypt is concerned, it began with one monument to one king designed by one brilliant architect: **the Step Pyramid of Djoser at Saqqara**.

15

B.

Djoser was the first king of the Third Dynasty of Egypt and the first to build in stone. Prior to Djoser's reign, tombs were rectangular monuments made of dried clay brick, which covered underground passages where the deceased person was buried. For reasons which remain unclear, Djoser's main official, whose name was Imhotep, conceived of building a taller, more impressive tomb for his king by stacking stone slabs on top of one another, progressively making them smaller, to form the shape now known as the Step Pyramid. Djoser is thought to have reigned for 19 years, but some historians and scholars attribute a much longer time for his rule, owing to the number and size of the monuments he built.

16

C.

The Step Pyramid has been thoroughly examined and investigated over the last century, and it is now known that the building process went through many different stages. Historian Marc Van de Mieroop comments on this, writing 'Much experimentation was involved, which is especially clear in the construction of the pyramid in the center of the complex. It had several plans … before it became the first Step Pyramid in history, piling six levels on top of one another … The weight of the enormous mass was a challenge for the builders, who placed the stones at an inward incline in order to prevent the monument breaking up.'

17

D.

When finally completed, the Step Pyramid rose 62 meters high and was the tallest structure of its time. The complex in which it was built was the size of a city in ancient Egypt and included a temple, courtyards, shrines, and living quarters for the priests. It covered a region of 16 hectares and was surrounded by a wall 10.5 meters high. The wall had 13 false doors cut into it with only one true entrance cut into the south-east corner; the entire wall was then ringed by a trench 750 meters long and 40 meters wide. The false doors and the trench were incorporated into the complex to discourage unwanted visitors. If someone wished to enter, he or she would have needed to know in advance how to find the location of the true opening in the wall. Djoser was so proud of his accomplishment that he broke the tradition of having only his own name on the monument and had Imhotep's name carved on it as well.

18

E.

The burial chamber of the tomb, where the king's body was laid to rest, was dug beneath the base of the pyramid, surrounded by a vast maze of long tunnels that had rooms off them to discourage robbers. One of the most mysterious discoveries found inside the pyramid was a large number of stone vessels. Over 40,000 of these vessels, of various forms and shapes, were discovered in storerooms of the pyramid's underground passages. They are inscribed with the names of rulers from the First and Second Dynasties of Egypt and made from different kinds of stone. There is no agreement among scholars and archaeologists on why the vessels were placed in the tomb of Djoser or what they were supposed to represent. The archaeologist Jean-Philippe Lauer, who excavated most of the pyramid and complex, believes they were originally stored and then given a 'proper burial' by Djoser in his pyramid to honor his predecessors. There are other historians, however, who claim the vessels were dumped into the shafts as yet another attempt to prevent grave robbers from getting to the king's burial chamber.

19

F.

Unfortunately, all of the precautions and intricate design of the underground network did not prevent ancient robbers from finding a way in. Djoser's grave goods, and even his body, were stolen at some point in the past and all archaeologists found were a small number of his valuables overlooked by the thieves. There was enough left throughout the pyramid and its complex, however, to astonish and amaze the archaeologists who excavated it.

20

G.

Egyptologist Miroslav Verner writes, 'Few monuments hold a place in human history as significant as that of the Step Pyramid in Saqqara … It can be said without exaggeration that

this pyramid complex constitutes a milestone in the evolution of monumental stone architecture in Egypt and in the world as a whole.' The Step Pyramid was a revolutionary advance in architecture and became the archetype which all the other great pyramid builders of Egypt would follow.

PART 2 — QUESTIONS

Questions 14-20

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

Choose the correct heading for paragraphs from the list of headings below.

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

List of Headings

i. **The areas and artefacts within the pyramid itself**

ii. **A difficult task for those involved**

iii. **A king who saved his people**

iv. **A single certainty among other less definite facts**

v. **An overview of the external buildings and areas**

vi. **A pyramid design that others copied**

vii. **An idea for changing the design of burial structures**

viii. **An incredible experience despite the few remains**

ix. **The answers to some unexpected questions**

Questions 21-24

Complete the notes below.

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

Write your answers in boxes on your answer sheet.

The Step Pyramid of Djoser

The complex that includes the Step Pyramid and its surroundings is considered to be as big as an Egyptian **21** _____ of the past. The area outside the pyramid included accommodation that was occupied by **22** _____, along with many other buildings and features.

A wall ran around the outside of the complex and a number of false entrances were built into this. In addition, a long **23** _____ encircled the wall. As a result, any visitors who

had not been invited were cleverly prevented from entering the pyramid grounds unless they knew the **24** _____ of the real entrance.

Questions 25-26

Choose **TWO** letters, **A-E**.

Write the correct letters in boxes on your answer sheet.

25 **26** Which **TWO** of the following points does the writer make about King Djoser?

- **A** ☐ Initially he had to be persuaded to build in stone rather than clay.
- **B** ☐ There is disagreement concerning the length of his reign.
- **C** ☐ He failed to appreciate Imhotep's part in the design of the Step Pyramid.
- **D** ☐ A few of his possessions were still in his tomb when archaeologists found it.
- **E** ☐ He criticised the design and construction of other pyramids in Egypt.

PASSAGE 3

The future of work

According to a leading business consultancy, 3—14% of the global workforce will need to switch to a different occupation within the next 10—15 years, and all workers will need to adapt as their occupations evolve alongside increasingly capable machines. Automation — or 'embodied artificial intelligence (AI) — is one aspect of the disruptive effects of technology on the labour market. 'Disembodied AI', like the algorithms running in our smartphones, is another.

Dr Stella Pachidi from Cambridge Judge Business School believes that some of the most fundamental changes are happening as a result of the '**algorithmication**' of jobs that are dependent on data rather than on production — the so-called knowledge economy. Algorithms are capable of learning from data to undertake tasks that previously needed human judgement, such as reading legal contracts, analysing medical scans and gathering market intelligence.

'In many cases, they can outperform humans,' says Pachidi. 'Organisations are attracted to using algorithms because they want to make choices based on what they consider is "perfect information", as well as to reduce costs and enhance productivity.'

'But these enhancements are not without consequences,' says Pachidi. 'If routine cognitive tasks are taken over by AI, how do professions develop their future experts?' she asks. 'One way of learning about a job is "legitimate peripheral participation"— a novice stands next to experts and learns by observation. If this isn't happening, then you need to find new ways to learn.'

Another issue is the extent to which the technology influences or even controls the workforce. For over two years, Pachidi monitored a telecommunications company. 'The way telecoms salespeople work is through personal and frequent contact with clients, using the benefit of experience to assess a situation and reach a decision. However, the company had started using a[n] ... algorithm that defined when account managers should contact certain customers about which kinds of campaigns and what to offer them.'

The algorithm — usually built by external designers — often becomes the keeper of knowledge, she explains. In cases like this, Pachidi believes, a short-sighted view begins to creep into working practices whereby workers learn through the 'algorithm's eyes' and become dependent on its instructions. Alternative explorations — where experimentation and human instinct lead to progress and new ideas — are effectively discouraged.

Pachidi and colleagues even observed people developing strategies to make the algorithm work to their own advantage. 'We are seeing cases where workers feed the algorithm with false data to reach their targets,' she reports.

It's scenarios like these that many researchers are working to avoid. Their objective is to make AI technologies more trustworthy and transparent, so that organisations and individuals understand how AI decisions are made. In the meantime, says Pachidi, 'We need to make sure

we fully understand the dilemmas that this new world raises regarding expertise, occupational boundaries and control.'

Economist Professor Hamish Low believes that the future of work will involve major transitions across the whole life course for everyone: 'The traditional trajectory of full-time education followed by full-time work followed by a pensioned retirement is a thing of the past,' says Low. Instead, he envisages a multistage employment life: one where retraining happens across the life course, and where multiple jobs and no job happen by choice at different stages.

On the subject of job losses, Low believes the predictions are founded on a fallacy: 'It assumes that the number of jobs is fixed. If in 30 years, half of 100 jobs are being carried out by robots, that doesn't mean we are left with just 50 jobs for humans. The number of jobs will increase: we would expect there to be 150 jobs.'

Dr Ewan McGaughey, at Cambridge's Centre for Business Research and King's College London, agrees that 'apocalyptic' views about the future of work are misguided. 'It's the laws that restrict the supply of capital to the job market, not the advent of new technologies that causes unemployment.'

His recently published research answers the question of whether automation, AI and robotics will mean a 'jobless future' by looking at the causes of unemployment. 'History is clear that change can mean redundancies. But social policies can tackle this through retraining and redeployment.'

He adds: 'If there is going to be change to jobs as a result of AI and robotics then I'd like to see governments seizing the opportunity to improve policy to enforce good job security. We can "reprogramme" the law to prepare for a fairer future of work and leisure.' McGaughey's findings are a call to arms to leaders of organisations, governments and banks to pre-empt the coming changes with bold new policies that guarantee full employment, fair incomes and a thriving economic democracy.

'The promises of these new technologies are astounding. They deliver humankind the capacity to live in a way that nobody could have once imagined,' he adds. 'Just as the industrial revolution brought people past subsistence agriculture, and the corporate revolution enabled mass production, a third revolution has been pronounced. But it will not only be one of technology. The next revolution will be social.'

PART 3 — QUESTIONS

Questions 27-30

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

Write the correct letter in boxes on your answer sheet.

27 The first paragraph tells us about

- **A** ○ the kinds of jobs that will be most affected by the growth of AI.
- **B** ○ the extent to which AI will after the nature of the work that people do.
- **C** ○ the proportion of the world's labour force who will have jobs in AI in the future.
- **D** ○ the difference between ways that embodied and disembodied AI with impact on workers.

28 According to the second paragraph, what is Stella Pachidi's view of the 'knowledge economy'?

- **A** ○ It is having an influence on the number of jobs available.
- **B** ○ It is changing people's attitudes towards their occupations.
- **C** ○ It is the main reason why the production sector is declining.
- **D** ○ It is a key factor driving current developments in the workplace.

29 What did Pachidi observe at the telecommunications company?

- **A** ○ staff disagreeing with the recommendations of AI
- **B** ○ staff feeling resentful about the intrusion of AI in their work
- **C** ○ staff making sure that AI produces the results that they want
- **D** ○ staff allowing AI to carry out tasks they ought to do themselves

30 In his recently published research, Ewan McGaughey

- **A** ○ challenges the idea that redundancy is a negative thing.
- **B** ○ shows the profound effect of mass unemployment on society.

C ○ highlights some differences between past and future job losses.

D ○ illustrates how changes in the job market can be successfully handled.

Questions 31-34

Complete the summary using the list of words, **A-G**, below.

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

The 'algorithmication' of jobs

Stella Pachidi of Cambridge Judge Business School has been focusing on the 'algorithmication' of jobs which rely not on production but on **31** _____ .

While monitoring a telecommunications company, Pachidi observed a growing **32** _____ on the recommendations made by AI, as workers begin to learn through the 'algorithm's eyes'. Meanwhile, staff are deterred from experimenting and using their own **33** _____ , and are therefore prevented from achieving innovation.

To avoid the kind of situations which Pachidi observed, researchers are trying to make AI's decision-making process easier to comprehend, and to increase users' **34** _____ with regard to the technology.

A. **pressure** B. **satisfaction** C. **intuition** D. **promotion** E. **reliance**

F. **confidence** G. **information**

Questions 35-40

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

Match each statement with the correct person, **A**, **B** or **C**.

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

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

List of people

A Stella Pachidi

B Hamish Low

C Ewan McGaughey

	A	B	C
35 Greater levels of automation will not result in lower employment.	○	○	○
36 There are several reasons why AI is appealing to businesses.	○	○	○
37 AI's potential to transform people's lives has parallels with major cultural shifts which occurred in previous eras.	○	○	○
38 It is important to be aware of the range of problems that AI causes.	○	○	○
39 People are going to follow a less conventional career path than in the past.	○	○	○
40 Authorities should take measures to ensure that there will be adequately paid work for everyone	○	○	○

Answer Key

#	Answer	Explanation
1	**FALSE**	Humans with comparative levels of adipose tissue would be considered obese and would be likely to suffer from diabetes and heart disease. Yet the polar bear experiences no such consequences.
2	**FALSE**	A 2014 study by Shi Ping Liu and colleagues sheds light on this mystery. They compared the genetic structure of polar bears with that of their closest relatives from a warmer climate, the brown bears.
3	**NOT GIVEN**	A 2014 study by Shi Ping Liu and colleagues sheds light on this mystery. They compared the genetic structure of polar bears with that of their closest relatives from a warmer climate, the brown bears.
4	**TRUE**	Liu and his colleagues found the polar bears had a gene known as APoB, which reduces levels of low-density lipoproteins (LDLs) – a form of 'bad' cholesterol.
5	**TRUE**	This process results in about six months of fasting, where the female bears have to keep themselves and their cubs alive, depleting their own calcium and calorie reserves.
6	**FALSE**	when they finally emerged from the den with their cubs, there was no evidence of significant loss of bone density.
7	**TRUE**	If the mechanism of bone remodelling in polar bears can be understood, many bedridden humans, and even astronauts, could potentially benefit.
8	**violent**	Bears, on the other hand, seem to be perceived as stupid and in many cases violent.
9	**tool**	A male bear called GoGo in Tennoji Zoo, Osaka, has even been observed making use of a tool to manipulate his environment.
10	**meat**	The bear used a tree branch on multiple occasions to dislodge a piece of meat hung out of his reach.
11	**photographer**	A calculated move by a male bear involved running and jumping onto barrels in an attempt to get to a photographer standing on a platform four metres high.
12	**game**	For example, Annes observed bears putting objects in piles and then knocking them over in what appeared to be a game.

#	Answer	Explanation
13	**frustration**	many bears have been seen to hit out at ice and snow — seemingly out of frustration — when they have just missed out on a kill.
14	**iv**	The evolution of the pyramid form has been written and argued about for centuries. However, there is no question that, as far as Egypt is concerned, it began with one monument to one king designed by one brilliant architect: the Step Pyramid of Djoser at Saqqara.
15	**vii**	For reasons which remain unclear, Djoser's main official, whose name was Imhotep, conceived of building a taller, more impressive tomb for his king by stacking stone slabs on top of one another, progressively making them smaller, to form the shape now known as the Step Pyramid.
16	**ii**	The weight of the enormous mass was a challenge for the builders, who placed the stones at an inward incline in order to prevent the monument breaking up.
17	**v**	It covered a region of 16 hectares and was surrounded by a wall 10.5 meters high. The wall had 13 false doors cut into it with only one true entrance cut into the south-east corner
18	**i**	One of the most mysterious discoveries found inside the pyramid was a large number of stone vessels.
19	**viii**	There was enough left throughout the pyramid and its complex, however, to astonish and amaze the archaeologists who excavated it.
20	**vi**	The Step Pyramid was a revolutionary advance in architecture and became the archetype which all the other great pyramid builders of Egypt would follow.
21	**city**	The complex in which it was built was the size of a city in ancient Egypt
22	**priests**	included a temple, courtyards, shrines, and living quarters for the priests
23	**trench**	the entire wall was then ringed by a trench 750 meters long and 40 meters wid
24	**location**	If someone wished to enter, he or she would have needed to know in advance how to find the location of the true opening in the wall.
25	**B / D**	Djoser is thought to have reigned for 19 years, but some historians and scholars attribute a much longer time for his rule, owing to the number and size of the monuments he built. Djoser's grave goods, and even his body, were stolen at some point in the

#	Answer	Explanation
		past and all archaeologists found were a small number of his valuables overlooked by the thieves.
26	**B / D**	Djoser is thought to have reigned for 19 years, but some historians and scholars attribute a much longer time for his rule, owing to the number and size of the monuments he built. Djoser's grave goods, and even his body, were stolen at some point in the past and all archaeologists found were a small number of his valuables overlooked by the thieves.
27	**B**	Automation — or 'embodied artificial intelligence (AI) — is one aspect of the disruptive effects of technology on the labour market.
28	**D**	Algorithms are capable of learning from data to undertake tasks that previously needed human judgement, such as reading legal contracts, analysing medical scans and gathering market intelligence.
29	**C**	the company had started using a[n] … algorithm that defined when account managers should contact certain customers about which kinds of campaigns and what to offer them
30	**D**	If there is going to be change to jobs as a result of AI and robotics then I'd like to see governments seizing the opportunity to improve policy to enforce good job security. We can "reprogramme" the law to prepare for a fairer future of work and leisure.
31	**G**	Dr Stella Pachidi from Cambridge Judge Business School believes that some of the most fundamental changes are happening as a result of the 'algorithmication' of jobs that are dependent on data rather than on production — the so-called knowledge economy.
32	**E**	In cases like this, Pachidi believes, a short-sighted view begins to creep into working practices whereby workers learn through the 'algorithm's eyes' and become dependent on its instructions.
33	**C**	Alternative explorations — where experimentation and human instinct lead to progress and new ideas — are effectively discouraged.
34	**F**	Their objective is to make AI technologies more trustworthy and transparent, so that organisations and individuals understand how AI decisions are made.
35	**B**	On the subject of job losses, Low believes the predictions are founded on a fallacy: 'It assumes that the number of jobs is fixed. If in 30 years, half of 100 jobs are being carried out by robots, that doesn't mean we are left with just 50 jobs for humans. The

#	Answer	Explanation
		number of jobs will increase: we would expect there to be 150 jobs.'
36	**A**	'In many cases, they can outperform humans,' says Pachidi. 'Organisations are attracted to using algorithms because they want to make choices based on what they consider is "perfect information", as well as to reduce costs and enhance productivity.'
37	**C**	'The promises of these new technologies are astounding. They deliver humankind the capacity to live in a way that nobody could have once imagined,' he adds. 'Just as the industrial revolution brought people past subsistence agriculture, and the corporate revolution enabled mass production, a third revolution has been pronounced. But it will not only be one of technology. The next revolution will be social.'
38	**A**	'But these enhancements are not without consequences,' says Pachidi. 'If routine cognitive tasks are taken over by AI, how do professions develop their future experts?' she asks.
39	**B**	Economist Professor Hamish Low believes that the future of work will involve major transitions across the whole life course for everyone: 'The traditional trajectory of full-time education followed by full-time work followed by a pensioned retirement is a thing of the past,' says Low.
40	**C**	McGaughey's findings are a call to arms to leaders of organisations, governments and banks to pre-empt the coming changes with bold new policies that guarantee full employment, fair incomes and a thriving economic democracy.

PASSAGE 1

The White Horse of Uffington

The cutting of huge figures or ***geoglyphs*** into the earth of English hillsides has taken place for more than 3,000 years. There are 56 hill figures scattered around England, with the vast majority on the chalk downlands of the country's southern counties. The figures include giants, horses, crosses and regimental badges. Although the majority of these geoglyphs date within the last 300 years or so, there are one or two that are much older.

The most famous of these figures is perhaps also the most mysterious — **the Uffington White Horse** in Oxfordshire. The White Horse has recently been re-dated and shown to be even older than its previously assigned ancient *pre-Roman Iron Age* date. More controversial is the date of the enigmatic Long Man of Wilmington in Sussex. While many historians are convinced the figure is prehistoric, others believe that it was the work of an artistic monk from a nearby priory and was created between the 11th and 15th centuries.

The method of cutting these huge figures was simply to remove the overlying grass to reveal the gleaming white chalk below. However, the grass would soon grow over the geoglyph again unless it was regularly cleaned or scoured by a fairly large team of people. One reason that the vast majority of hill figures have disappeared is that when the traditions associated with the figures faded, people no longer bothered or remembered to clear away the grass to expose the chalk outline. Furthermore, over hundreds of years the outlines would sometimes change due to people not always cutting in exactly the same place, thus creating a different shape to the original geoglyph. The fact that any ancient hill figures survive at all in England today is testament to the strength and continuity of local customs and beliefs which, in one case at least, must stretch back over millennia.

The Uffington White Horse is a unique, stylised representation of a horse consisting of a long, sleek back, thin disjointed legs, a streaming tail, and a bird-like beaked head. The elegant creature almost melts into the landscape. The horse is situated 2.5 km from Uffington village on a steep slope close to the Late Bronze Age (c. 7th century BCE) hillfort of Uffington Castle and below the Ridgeway, a long-distance Neolithic track.

The Uffington Horse is also surrounded by Bronze Age burial mounds. It is not far from the Bronze Age cemetery of Lambourn Seven Barrows, which consists of more than 30 well-preserved burial mounds. The carving has been placed in such a way as to make it extremely difficult to see from close quarters, and like many geoglyphs is best appreciated from the air. Nevertheless, there are certain areas of the Vale of the White Horse, the valley containing and named after the enigmatic creature, from which an adequate impression may be gained. Indeed on a clear day the carving can be seen from up to 30 km away.

The earliest evidence of a horse at Uffington is from the 1070s CE when ‘White Horse Hill’ is mentioned in documents from the nearby Abbey of Abingdon, and the first reference to the horse itself is soon after, in 1190 CE. However, the carving is believed to date back much further than that. Due to the similarity of the Uffington White Horse to the stylised depictions of horses on 1st century BCE coins, it had been thought that the creature must also date to that period.

However, in 1995 Optically Stimulated Luminescence (OSL) testing was carried out by the Oxford Archaeological Unit on soil from two of the lower layers of the horse’s body, and from another cut near the base. The result was a date for the horse’s construction somewhere between 1400 and 600 BCE — in other words, it had a Late Bronze Age or Early Iron Age origin.

The latter end of this date range would tie the carving of the horse in with occupation of the nearby Uffington hillfort, indicating that it may represent a tribal emblem marking the land of the inhabitants of the hillfort. Alternatively, the carving may have been carried out during a Bronze or Iron Age ritual. Some researchers see the horse as representing the Celtic horse goddess Epona, who was worshipped as a protector of horses, and for her associations with fertility. However, the cult of Epona was not imported from Gaul (France) until around the first century CE. This date is at least six centuries after the Uffington Horse was probably carved. Nevertheless, the horse had great ritual and economic significance during the Bronze and Iron Ages, as attested by its depictions on jewellery and other metal objects. It is possible that the carving represents a goddess in native mythology, such as Rhiannon, described in later Welsh mythology as a beautiful woman dressed in gold and riding a white horse.

The fact that geoglyphs can disappear easily, along with their associated rituals and meaning, indicates that they were never intended to be anything more than temporary gestures. But this does not lessen their importance. These giant carvings are a fascinating glimpse into the minds of their creators and how they viewed the landscape in which they lived.

Questions 1-8

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

In boxes on your answer sheet, write

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

1 Most geoglyphs in England are located in a particular area of the country.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

2 There are more geoglyphs in the shape of a horse than any other creature.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

3 A recent dating of the Uffington White Horse indicates that people were mistaken about its age.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

4 Historians have come to an agreement about the origins of the Long Man of Wilmington.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

5 Geoglyphs were created by people placing white chalk on the hillside.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

6 Many geoglyphs in England are no longer visible.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

7 The shape of some geoglyphs has been altered over time.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

8 The fame of the Uffington White Horse is due to its size.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

Questions 9-13

Complete the summary below.

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

Write your answers in boxes on your answer sheet.

The Uffington White Horse

The location of the Uffington White Horse:

- a distance of 2.5 km from Uffington village

- near an ancient road known as the **9** _____
- close to an ancient cemetery that has a number of burial mounds

Dating the Uffington White Horse:

- first reference to White Horse Hill appears in **10** _____ from the 1070s
- horses shown on coins from the period 100 BCE – 1 BCE are similar in appearance
- according to analysis of the surrounding **11** _____, the Horse is Late Bronze Age / Early Iron Age

Possible reasons for creation of the Uffington White Horse:

- an emblem to indicate land ownership
- formed part of an ancient ritual
- was a representation of goddess Epona – associated with protection of horses and **12** _____
- was a representation of a Welsh goddess called **13** _____

PASSAGE 2

I contain multitudes

Wendy Moore reviews Ed Yong's book about microbes

Microbes, most of them bacteria, have populated this planet since long before animal life developed and they will outlive us. Invisible to the naked eye, they are ubiquitous. They inhabit the soil, air, rocks and water and are present within every form of life, from seaweed and coral to dogs and humans. And, as Yong explains in his utterly absorbing and hugely important book, we mess with them at our peril.

Every species has its own colony of microbes, called a *'microbiome'*, and these microbes vary not only between species but also between individuals and within different parts of each individual. What is amazing is that while the number of human cells in the average person is about 30 trillion, the number of microbial ones is higher — about 39 trillion. At best, Yong informs us, we are only 50 per cent human. Indeed, some scientists even suggest we should think of each species and its microbes as a single unit, dubbed a *'holobiont'*.

In each human there are microbes that live only in the stomach, the mouth or the armpit and by and large they do so peacefully. So 'bad' microbes are just microbes out of context. Microbes that sit contentedly in the human gut (where there are more microbes than there are stars in the galaxy) can become deadly if they find their way into the bloodstream. These communities are constantly changing too. The right hand shares just one sixth of its microbes with the left hand. And, of course, we are surrounded by microbes. Every time we eat, we swallow a million microbes in each gram of food; we are continually swapping microbes with other humans, pets and the world at large.

It's a fascinating topic and Yong, a young British science journalist, is an extraordinarily adept guide. Writing with lightness and panache, he has a knack of explaining complex science in terms that are both easy to understand and totally enthralling. Yong is on a mission. Leading us gently by the hand, he takes us into the world of microbes — a bizarre, alien planet — in a bid to persuade us to love them as much as he does. By the end, we do.

For most of human history we had no idea that microbes existed. The first man to see these extraordinarily potent creatures was a Dutch lens-maker called Antony van Leeuwenhoek in the 1670s. Using microscopes of his own design that could magnify up to 270 times, he examined a drop of water from a nearby lake and found it teeming with tiny creatures he called *'animalcules'*. It wasn't until nearly two hundred years later that the research of French biologist Louis Pasteur indicated that some microbes caused disease. It was Pasteur's 'germ theory' that gave bacteria the poor image that endures today.

Yong's book is in many ways a plea for microbial tolerance, pointing out that while fewer than one hundred species of bacteria bring disease, many thousands more play a vital role in maintaining our health. The book also acknowledges that our attitude towards bacteria is not a simple one. We tend to see the dangers posed by bacteria, yet at the same time we are sold

yoghurts and drinks that supposedly nurture ‘friendly’ bacteria. In reality, says Yong, bacteria should not be viewed as either friends or foes, villains or heroes. Instead we should realise we have a symbiotic relationship, that can be mutually beneficial or mutually destructive.

What then do these millions of organisms do? The answer is pretty much everything. New research is now unravelling the ways in which bacteria aid digestion, regulate our immune systems, eliminate toxins, produce vitamins, affect our behaviour and even combat obesity. ‘They actually help us become who we are,’ says Yong. But we are facing a growing problem. Our obsession with hygiene, our overuse of antibiotics and our unhealthy, low-fibre diets are disrupting the bacterial balance and may be responsible for soaring rates of allergies and immune problems, such as inflammatory bowel disease (IBD).

The most recent research actually turns accepted norms upside down. For example, there are studies indicating that the excessive use of household detergents and antibacterial products actually destroys the microbes that normally keep the more dangerous germs at bay. Other studies show that keeping a dog as a pet gives children early exposure to a diverse range of bacteria, which may help protect them against allergies later.

The readers of Yong’s book must be prepared for a decidedly unglamorous world. Among the less appealing case studies is one about a fungus that is wiping out entire populations of frogs and that can be halted by a rare microbial bacterium. Another is about squid that carry luminescent bacteria that protect them against predators. However, if you can overcome your distaste for some of the investigations, the reasons for Yong’s enthusiasm become clear. The microbial world is a place of wonder. Already, in an attempt to stop mosquitoes spreading dengue fever — a disease that infects 400 million people a year — mosquitoes are being loaded with a bacterium to block the disease. In the future, our ability to manipulate microbes means we could construct buildings with useful microbes built into their walls to fight off infections. Just imagine a neonatal hospital ward coated in a specially mixed cocktail of microbes so that babies get the best start in life.

PART 2 — QUESTIONS

Questions 14-16

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

Write the correct letter in boxes on your answer sheet.

14 What point does the writer make about microbes in the first paragraph?

- **A** ○ They adapt quickly to their environment.
- **B** ○ The risk they pose has been exaggerated.
- **C** ○ They are more plentiful in animal life than plant life.
- **D** ○ They will continue to exist for longer than the human race.

15 In the second paragraph, the writer is impressed by the fact that

- **A** ○ each species tends to have vastly different microbes.
- **B** ○ some parts of the body contain relatively few microbes.
- **C** ○ the average individual has more microbial cells than human ones.
- **D** ○ scientists have limited understanding of how microbial cells behave.

16 What is the writer doing in the fifth paragraph?

- **A** ○ explaining how a discovery was made
- **B** ○ comparing scientists' theories about microbes
- **C** ○ describing confusion among scientists
- **D** ○ giving details of how microbes cause disease

Questions 17-20

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

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

We should be more tolerant of microbes

Yong's book argues that we should be more tolerant of microbes. Many have a beneficial effect, and only a relatively small number lead to **17** _____. And although it is misleading to think of microbes as 'friendly', we should also stop thinking of them as the enemy. In fact, we should accept that our relationship with microbes is one based on **18** _____.

New research shows that microbes have numerous benefits for humans. Amongst other things, they aid digestion, remove poisons, produce vitamins and may even help reduce obesity. However, there is a growing problem. Our poor **19** _____, our overuse of antibiotics, and our excessive focus on **20** _____ are upsetting the bacterial balance and may be contributing to the huge increase in allergies and immune system problems.

A. **solution** B. **partnership** C. **destruction** D. **exaggeration**

E. **cleanliness** F. **regulations** G. **illness** H. **nutrition**

Questions 21-26

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

In boxes on your answer sheet, write

YES if the statement agrees with the claims of the writer

NO if the statement contradicts the claims of the writer

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

21 It is possible that using antibacterial products in the home fails to have the desired effect.

A ○ YES

B ○ NO

C ○ NOT GIVEN

22 It is a good idea to ensure that children come into contact with as few bacteria as possible.

A ○ YES

B ○ NO

C ○ NOT GIVEN

23 Yong's book contains more cause studies than are necessary.

A ○ YES

B ○ NO

C ○ NOT GIVEN

24 The case study about bacteria that prevent squid from being attacked may have limited appeal.

A ○ YES

B ○ NO

C ○ NOT GIVEN

25 Efforts to control dengue fever have been surprisingly successful

A ○ YES

B ○ NO

C ○ NOT GIVEN

26 Microbes that reduce the risk of infection have already been put inside the walls of some hospital wards.

A ○ YES

B ○ NO

C ○ NOT GIVEN

PASSAGE 3

How to make wise decisions

Across cultures, wisdom has been considered one of the most revered human qualities. Although the truly wise may seem few and far between, empirical research examining wisdom suggests that it isn't an exceptional trait possessed by a small handful of bearded philosophers after all — in fact, the latest studies suggest that most of us have the ability to make wise decisions, given the right context.

'It appears that experiential, situational, and cultural factors are even more powerful in shaping wisdom than previously imagined,' says Associate Professor Igor Grossmann of the University of Waterloo in Ontario, Canada. 'Recent empirical findings from cognitive, developmental, social, and personality psychology cumulatively suggest that people's ability to reason wisely varies dramatically across experiential and situational contexts. Understanding the role of such contextual factors offers unique insights into understanding wisdom in daily life, as well as how it can be enhanced and taught.'

It seems that it's not so much that some people simply possess wisdom and others lack it, but that our ability to reason wisely depends on a variety of external factors. 'It is impossible to characterize thought processes attributed to wisdom without considering the role of contextual factors,' explains Grossmann. 'In other words, wisdom is not solely an "inner quality" but rather unfolds as a function of situations people happen to be in. Some situations are more likely to promote wisdom than others.'

Coming up with a definition of wisdom is challenging, but Grossmann and his colleagues have identified *four key characteristics* as part of a framework of wise reasoning. One is intellectual humility or recognition of the limits of our own knowledge, and another is appreciation of perspectives wider than the issue at hand. Sensitivity to the possibility of change in social relations is also key, along with compromise or integration of different attitudes and beliefs.

Grossmann and his colleagues have also found that one of the most reliable ways to support wisdom in our own day-to-day decisions is to look at scenarios from a third-party perspective, as though giving advice to a friend. Research suggests that when adopting a first-person viewpoint we focus on 'the focal features of the environment' and when we adopt a third-person, 'observer' viewpoint we reason more broadly and focus more on interpersonal and moral ideals such as justice and impartiality. Looking at problems from this more expansive viewpoint appears to foster cognitive processes related to wise decisions.

What are we to do, then, when confronted with situations like a disagreement with a spouse or negotiating a contract at work, that require us to take a personal stake? Grossmann argues that even when we aren't able to change the situation, we can still evaluate these experiences from different perspectives.

For example, in one experiment that took place during the peak of a recent economic recession, graduating college seniors were asked to reflect on their job prospects. The students were

instructed to imagine their career either ‘as if you were a distant observer’ or ‘before your own eyes as if you were right there’. Participants in the group assigned to the ‘distant observer’ role displayed more wisdom-related reasoning (intellectual humility and recognition of change) than did participants in the control group.

In another study, couples in long-term romantic relationships were instructed to visualize an unresolved relationship conflict either through the eyes of an outsider or from their own perspective. Participants then discussed the incident with their partner for 10 minutes, after which they wrote down their thoughts about it. Couples in the ‘other’s eyes’ condition were significantly more likely to rely on wise reasoning — recognizing others’ perspectives and searching for a compromise — compared to the couples in the egocentric condition.

‘Ego-decentering promotes greater focus on others and enables a bigger picture, conceptual view of the experience, affording recognition of intellectual humility and change,’ says Grossmann.

We might associate wisdom with intelligence or particular personality traits, but research shows only a small positive relationship between wise thinking and crystallized intelligence and the personality traits of openness and agreeableness. ‘It is remarkable how much people can vary in their wisdom from one situation to the next, and how much stronger such contextual effects are for understanding the relationship between wise judgment and its social and affective outcomes as compared to the generalized “traits”,’ Grossmann explains. ‘That is, knowing how wisely a person behaves in a given situation is more informative for understanding their emotions or likelihood to forgive [or] retaliate as compared to knowing whether the person may be wise “in general”.

Questions 27-30

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

Write the correct letter in boxes on your answer sheet.

27 What point does the writer make in the first paragraph?

- **A** ○ Wisdom appears to be unique to the human race.
- **B** ○ A basic assumption about wisdom may be wrong.
- **C** ○ Concepts of wisdom may depend on the society we belong to.
- **D** ○ There is still much to be discovered about the nature of wisdom.

28 What does Igor Grossmann suggest about the ability to make wise decisions?

- **A** ○ It can vary greatly from one person to another.
- **B** ○ Earlier research into it was based on unreliable data.
- **C** ○ The importance of certain influences on it was underestimated.
- **D** ○ Various branches of psychology define it according to their own criteria.

29 According to the third paragraph, Grossmann claims that the level of wisdom an individual shows

- **A** ○ can be greater than they think it is.
- **B** ○ will be different in different circumstances.
- **C** ○ may be determined by particular aspects of their personality.
- **D** ○ should develop over time as a result of their life experiences.

30 What is described in the fifth paragraph?

- **A** ○ a difficulty encountered when attempting to reason wisely
- **B** ○ an example of the type of person who is likely to reason wisely

C ○ a controversial view about the benefits of reasoning wisely

D ○ a recommended strategy that can help people to reason wisely

Questions 31-35

Complete the summary using the list of words, **A-J**, below.

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

The characteristics of wise reasoning

Igor Grossmann and colleagues have established four characteristics which enable us to make wise decisions. It is important to have a certain degree of **31** _____ regarding the extent of our knowledge, and to take into account **32** _____ which may not be the same as our own. We should also be able to take a broad **33** _____ of any situation. Another key characteristic is being aware of the likelihood of alterations in the way that people relate to each other.

Grossmann also believes that it is better to regard scenarios with **34** _____. By avoiding the first-person perspective, we focus more on **35** _____ and on other moral ideals, which in turn leads to wiser decision-making.

A. **opinions** B. **confidence** C. **view** D. **modesty** E. **problems**

F. **objectivity** G. **fairness** H. **experiences** I. **range** J. **reasons**

Questions 36-40

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

In boxes on your answer sheet, write

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

36 Students participating in the job prospects experiment could choose one of two perspectives to take.

A ○ TRUE

B ○ FALSE

C ○ NOT GIVEN

37 Participants in the couples experiment were aware that they were taking part in a study about wise reasoning.

A ○ TRUE

B ○ FALSE

C ○ NOT GIVEN

38 In the couples experiments, the length of the couples' relationships had an impact on the results.

A ○ TRUE

B ○ FALSE

C ○ NOT GIVEN

39 In both experiments, the participants who looked at the situation from a more detached viewpoint tended to make wiser decisions.

A ○ TRUE

B ○ FALSE

C ○ NOT GIVEN

40 Grossmann believes that a person's wisdom is determined by their intelligence to only a very limited extent.

A ○ TRUE

B ○ FALSE

C ○ NOT GIVEN

Answer Key

#	Answer	Explanation
1	**TRUE**	There are 56 hill figures scattered around England, with the vast majority on the chalk downlands of the country's southern counties.
2	**NOT GIVEN**	Although the majority of these geoglyphs date within the last 300 years or so, there are one or two that are much older.
3	**TRUE**	The White Horse has recently been re-dated and shown to be even older than its previously assigned ancient pre-Roman Iron Age date.
4	**FALSE**	More controversial is the date of the enigmatic Long Man of Wilmington in Sussex. While many historians are convinced the figure is prehistoric, others believe that it was the work of an artistic monk from a nearby priory and was created between the 11th and 15th centuries.
5	**FALSE**	The method of cutting these huge figures was simply to remove the overlying grass to reveal the gleaming white chalk below.
6	**TRUE**	One reason that the vast majority of hill figures have disappeared is that when the traditions associated with the figures faded, people no longer bothered or remembered to clear away the grass to expose the chalk outline.
7	**TRUE**	over hundreds of years the outlines would sometimes change due to people not always cutting in exactly the same place, thus creating a different shape to the original geoglyph.
8	**NOT GIVEN**	The Uffington White Horse is a unique, stylised representation of a horse consisting of a long, sleek back, thin disjointed legs, a streaming tail, and a bird-like beaked head.
9	**Ridgeway**	The horse is situated 2.5 km from Uffington village on a steep slope close to the Late Bronze Age (c. 7th century BCE) hillfort of Uffington Castle and below the Ridgeway, a long-distance Neolithic track.
10	**documents**	The earliest evidence of a horse at Uffington is from the 1070s CE when 'White Horse Hill' is mentioned in documents from the nearby Abbey of Abingdon, and the first reference to the horse itself is soon after, in 1190 CE.
11	**soil**	in 1995 Optically Stimulated Luminescence (OSL) testing was carried out by the Oxford Archaeological Unit on soil from two of

#	Answer	Explanation
		the lower layers of the horse's body, and from another cut near the base.
12	**fertility**	Some researchers see the horse as representing the Celtic horse goddess Epona, who was worshipped as a protector of horses, and for her associations with fertility.
13	**Rhiannon**	It is possible that the carving represents a goddess in native mythology, such as Rhiannon, described in later Welsh mythology as a beautiful woman dressed in gold and riding a white horse.
14	**D**	they will outlive us.
15	**C**	What is amazing is that while the number of human cells in the average person is about 30 trillion, the number of microbial ones is higher — about 39 trillion
16	**A**	Using microscopes of his own design that could magnify up to 270 times, he examined a drop of water from a nearby lake and found it teeming with tiny creatures he called 'animalcules'.
17	**G**	Yong's book is in many ways a plea for microbial tolerance, pointing out that while fewer than one hundred species of bacteria bring disease, many thousands more play a vital role in maintaining our health.
18	**B**	Instead we should realise we have a symbiotic relationship, that can be mutually beneficial or mutually destructive.
19	**H**	our unhealthy, low-fibre diets are disrupting the bacterial balance and may be responsible for soaring rates of allergies and immune problems, such as inflammatory bowel disease (IBD).
20	**E**	Our obsession with hygiene
21	**YES**	the excessive use of household detergents and antibacterial products actually destroys the microbes that normally keep the more dangerous germs at bay.
22	**NO**	keeping a dog as a pet gives children early exposure to a diverse range of bacteria, which may help protect them against allergies later.
23	**NOT GIVEN**	The readers of Yong's book must be prepared for a decidedly unglamorous world.
24	**YES**	Among the less appealing case studies is one about a fungus that is wiping out entire populations of frogs and that can be halted by a rare microbial bacterium. Another is about squid that carry luminescent bacteria that protect them against predators.

#	Answer	Explanation
25	**NOT GIVEN**	Already, in an attempt to stop mosquitoes spreading dengue fever — a disease that infects 400 million people a year — mosquitoes are being loaded with a bacterium to block the disease.
26	**NO**	In the future, our ability to manipulate microbes means we could construct buildings with useful microbes built into their walls to fight off infections.
27	**B**	empirical research examining wisdom suggests that it isn't an exceptional trait possessed by a small handful of bearded philosophers after all — in fact, the latest studies suggest that most of us have the ability to make wise decisions, given the right context.
28	**C**	It appears that experiential, situational, and cultural factors are even more powerful in shaping wisdom than previously imagined
29	**B**	people's ability to reason wisely varies dramatically across experiential and situational contexts.
30	**D**	one of the most reliable ways to support wisdom in our own day-to-day decisions is to look at scenarios from a third-party perspective, as though giving advice to a friend.
31	**D**	One is intellectual humility or recognition of the limits of our own knowledge
32	**A**	Sensitivity to the possibility of change in social relations is also key, along with compromise or integration of different attitudes and beliefs.
33	**C**	another is appreciation of perspectives wider than the issue at hand.
34	**F**	one of the most reliable ways to support wisdom in our own day-to-day decisions is to look at scenarios from a third-party perspective
35	**G**	when we adopt a third-person, 'observer' viewpoint we reason more broadly and focus more on interpersonal and moral ideals such as justice and impartiality.
36	**FALSE**	Participants in the group assigned to the 'distant observer' role displayed more wisdom-related reasoning (intellectual humility and recognition of change) than did participants in the control group.
37	**NOT GIVEN**	In another study, couples in long-term romantic relationships were instructed to visualize an unresolved relationship conflict either through the eyes of an outsider or from their own perspective.

#	Answer	Explanation
38	**NOT GIVEN**	Couples in the ‘other’s eyes’ condition were significantly more likely to rely on wise reasoning — recognizing others’ perspectives and searching for a compromise — compared to the couples in the egocentric condition.
39	**TRUE**	Ego-decentering promotes greater focus on others and enables a bigger picture, conceptual view of the experience, affording recognition of intellectual humility and change
40	**TRUE**	research shows only a small positive relationship between wise thinking and crystallized intelligence and the personality traits of openness and agreeableness. ‘It is remarkable how much people can vary in their wisdom from one situation to the next, and how much stronger such contextual effects are for understanding the relationship between wise judgment and its social and affective outcomes as compared to the generalized “traits”,’ Grossmann explains.

Cambridge IELTS 16 Academic Reading Test 3

PASSAGE 1

Roman shipbuilding and navigation

Shipbuilding today is based on science and ships are built using computers and sophisticated tools. Shipbuilding in ancient Rome, however, was more of an art relying on estimation, inherited techniques and personal experience. The Romans were not traditionally sailors but mostly land-based people, who learned to build ships from the people that they conquered, namely the Greeks and the Egyptians.

There are a few surviving written documents that give descriptions and representations of ancient Roman ships, including the sails and rigging. Excavated vessels also provide some clues about ancient shipbuilding techniques. Studies of these have taught us that ancient Roman shipbuilders built the outer hull first, then proceeded with the frame and the rest of the ship. Planks used to build the outer hull were initially sewn together. Starting from the 6th century BCE, they were fixed using a method called mortise and tenon, whereby one plank locked into another without the need for stitching. Then in the first centuries of the current era, Mediterranean shipbuilders shifted to another shipbuilding method, still in use today, which consisted of building the frame first and then proceeding with the hull and the other components of the ship. This method was more systematic and dramatically shortened ship construction times. The ancient Romans built large merchant ships and warships whose size and technology were unequalled until the 16th century CE.

Warships were built to be lightweight and very speedy. They had to be able to sail near the coast, which is why they had no ballast or excess load and were built with a long, narrow hull. They did not sink when damaged and often would lie crippled on the sea's surface following naval battles. They had a bronze battering ram, which was used to pierce the timber hulls or break the oars of enemy vessels. Warships used both wind (sails) and human power (oarsmen) and were therefore very fast. Eventually, Rome's navy became the largest and most powerful in the Mediterranean, and the Romans had control over what they therefore called ***Mare Nostrum*** meaning 'our sea'.

There were many kinds of warship. The 'trireme' was the dominant warship from the 7th to 4th century BCE. It had rowers in the top, middle and lower levels, and approximately 50 rowers in each bank. The rowers at the bottom had the most uncomfortable position as they were under the other rowers and were exposed to the water entering through the oar-holes. It is worth noting that contrary to popular perception, rowers were not slaves but mostly Roman citizens enrolled in the military. The trireme was superseded by larger ships with even more rowers.

Merchant ships were built to transport lots of cargo over long distances and at a reasonable cost. They had a wider hull, double planting and a solid interior for added stability. Unlike warships, their V-shaped hull was deep underwater, meaning that they could not sail too close to the coast. They usually had two huge side rudders located off the stern and controlled by a

small tiller bar connected to a system of cables. They had from one to three masts with large square sails and a small triangular sail at the bow. Just like warships, merchant ships used oarsmen, but coordinating the hundreds of rowers in both types of ship was not an easy task. In order to assist them, music would be played on an instrument, and oars would then keep time with this.

The cargo on merchant ships included raw materials (e.g. iron bars, copper, marble and granite), and agricultural products (e.g. grain from Egypt's Nile valley). During the Empire, Rome was a huge city by ancient standards of about one million inhabitants. Goods from all over the world would come to the city through the port of Pozzuoli situated west of the bay of Naples in Italy and through the gigantic port of Ostia situated at the mouth of the Tiber River. Large merchant ships would approach the destination port and, just like today, be intercepted by a number of towboats that would drag them to the quay.

The time of travel along the many sailing routes could vary widely. Navigation in ancient Rome did not rely on sophisticated instruments such as compasses but on experience, local knowledge and observation of natural phenomena. In conditions of good visibility, seamen in the Mediterranean often had the mainland or islands in sight, which greatly facilitated navigation. They sailed by noting their position relative to a succession of recognisable landmarks. When weather conditions were not good or where land was no longer visible, Roman mariners estimated directions from the pole star or, with less accuracy, from the Sun at noon. They also estimated directions relative to the wind and swell. Overall, shipping in ancient Roman times resembled shipping today with large vessels regularly crossing the seas and bringing supplies from their Empire.

Questions 1-5

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

In boxes on your answer sheet, write

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

1 The Romans' shipbuilding skills were passed on to the Greeks and the Egyptians.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

2 Skilled craftsmen were needed for the mortise and tenon method of fixing planks.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

3 The later practice used by Mediterranean shipbuilders involved building the hull before the frame.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

4 The Romans called the Mediterranean Sea *Mare Nostrum* because they dominated its use.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

5 Most rowers on ships were people from the Roman army.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

Questions 6-13

Complete the summary below.

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

Write your answers in boxes on your answer sheet.

Warships and merchant ships

Warships were designed so that they were **6** _____ and moved quickly. They often remained afloat after battles and were able to sail close to land as they lacked any additional weight. A battering ram made of **7** _____ was included in the design for attacking and damaging the timber and oars of enemy ships. Warships, such as the 'trireme', had rowers on three different **8** _____ .

Unlike warships, merchant ships had a broad **9** _____ that lay far below the surface of the sea. Merchant ships were steered through the water with the help of large rudders and a tiller bar. They had both square and **10** _____ sails. On merchant ships and warships, **11** _____ was used to ensure rowers moved their oars in and out of the water at the same time.

Quantities of agricultural goods such as **12** _____ were transported by merchant ships to two main ports in Italy. The ships were pulled to the shore by **13** _____. When the weather was clear and they could see islands or land, sailors used landmarks that they knew to help them navigate their route.

PASSAGE 2

Climate change reveals ancient artefacts in Norway's glaciers

A.

Well above the treeline in Norway's highest mountains, ancient fields of ice are shrinking as Earth's climate warms. As the ice has vanished, it has been giving up the treasures it has preserved in cold storage for the last 6,000 years — items such as ancient arrows and skis from Viking Age* traders. And those artefacts have provided archaeologists with some surprising insights into how ancient Norwegians made their livings.

B.

Organic materials like textiles and hides are relatively rare finds at archaeological sites. This is because unless they're protected from the microorganisms that cause decay, they tend not to last long. Extreme cold is one reliable way to keep artefacts relatively fresh for a few thousand years, but once thawed out, these materials experience degradation relatively swiftly.

With climate change shrinking ice cover around the world, glacial archaeologists need to race the clock to find newly revealed artefacts, preserve them, and study them. If something fragile dries and is windblown it might very soon be lost to science, or an arrow might be exposed and then covered again by the next snow and remain well-preserved. The unpredictability means that glacial archaeologists have to be systematic in their approach to fieldwork.

C.

Over a nine-year period, a team of archaeologists, which included Lars Pilo of Oppland County Council, Norway, and James Barrett of the McDonald Institute for Archaeological Research, surveyed patches of ice in Oppland, an area of south-central Norway that is home to some of the country's highest mountains. Reindeer once congregated on these icy patches in the later summer months to escape biting insects, and from the late Stone Age**, hunters followed. In addition, trade routes threaded through the mountain passes of Oppland, linking settlements in Norway to the rest of Europe.

The slow but steady movement of glaciers tends to destroy anything at their bases, so the team focused on stationary patches of ice, mostly above 1,400 metres. That ice is found amid fields of frost-weathered boulders, fallen rocks, and exposed bedrock that for nine months of the year is buried beneath snow.

'Fieldwork is hard work — hiking with all our equipment, often camping on permafrost — but very rewarding. You're rescuing the archaeology, bringing the melting ice to wider attention, discovering a unique environmental history and really connecting with the natural environment,' says Barrett.

D.

At the edges of the contracting ice patches, archaeologists found more than 2,000 artefacts, which formed a material record that ran from 4,000 BCE to the beginnings of the Renaissance in the 14th century. Many of the artefacts are associated with hunting. Hunters would have easily misplaced arrows and they often discarded broken bows rather than take them all the way home. Other items could have been used by hunters traversing the high mountain passes of Oppland: all-purpose items like tools, skis, and horse tack.

E.

Barrett's team radiocarbon-dated 153 of the artefacts and compared those dates to the timing of major environmental changes in the region — such as periods of cooling or warming — and major social and economic shifts — such as the growth of farming settlements and the spread of international trade networks leading up to the Viking Age. They found that some periods had produced lots of artefacts, which indicates that people had been pretty active in the mountains during those times. But there were few or no signs of activity during other periods.

F.

What was surprising, according to Barrett, was the timing of these periods. Oppland's mountains present daunting terrain and in periods of extreme cold, glaciers could block the higher mountain passes and make travel in the upper reaches of the mountains extremely difficult. Archaeologists assumed people would stick to lower elevations during a time like the Late Antique Little Ice Age, a short period of deeper-than-usual cold from about 536-600 CE. But it turned out that hunters kept regularly venturing into the mountains even when the climate turned cold, based on the amount of stuff they had apparently dropped there.

'Remarkably, though, the finds from the ice may have continued through this period, perhaps suggesting that the importance of mountain hunting increased to supplement failing agricultural harvests in times of low temperatures,' says Barrett. A colder turn in the Scandinavian climate would likely have meant widespread crop failures, so more people would have depended on hunting to make up for those losses.

G.

Many of the artefacts Barrett's team recovered date from the beginning of the Viking Age, the 700s through to the 900s CE. Trade networks connecting Scandinavia with Europe and the Middle East were expanding around this time. Although we usually think of ships when we think of Scandinavian expansion, these recent discoveries show that plenty of goods travelled on overland routes, like the mountain passes of Oppland. And growing Norwegian towns, along with export markets, would have created a booming demand for hides to fight off the cold, as well as antlers to make useful things like combs. Business must have been good for hunters.

H.

Norway's mountains are probably still hiding a lot of history — and prehistory — in remote ice patches. When Barrett's team looked at the dates for their sample of 153 artefacts, they noticed a gap with almost no artefacts from about 3,800 to 2,200 BCE. In fact, archaeological finds from that period are rare all over Norway. The researchers say that could be because many of

those artefacts have already disintegrated or are still frozen in the ice. That means archaeologists could be extracting some of those artefacts from retreating ice in years to come.

PART 2 — QUESTIONS

Questions 14-19

The Reading Passage has eight sections, **A-H.**

Which section contains the following information?

*Write the correct number, **A-H**, in boxes on your answer sheet.*

	A	B	C	D	E	F	G	H
14 an explanation for weapons being left behind in the mountains	○	○	○	○	○	○	○	○
15 a reference to the physical difficulties involved in an archaeological expedition	○	○	○	○	○	○	○	○
16 an explanation of why less food may have been available	○	○	○	○	○	○	○	○
17 a reference to the possibility of future archaeological discoveries	○	○	○	○	○	○	○	○
18 examples of items that would have been traded	○	○	○	○	○	○	○	○
19 a reference to the pressure archaeologists are under to work quickly	○	○	○	○	○	○	○	○

Questions 20-22

Complete the summary below.

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

Write your answers in boxes on your answer sheet.

Interesting finds at an archaeological site

Organic materials such as animal skins and textiles are not discovered very often at archaeological sites. They have little protection against **20** _____, which means

that they decay relatively quickly. But this is not always the case. If temperatures are low enough, fragile artefacts can be preserved for thousands of years.

A team of archaeologists have been working in the mountains in Oppland in Norway to recover artefacts revealed by shrinking ice cover. In the past, there were trade routes through these mountains and **21** _____ gathered there in the summer months to avoid being attacked by **22** _____ on lower ground. The people who used these mountains left things behind and it is those objects that are of interest to archaeologists.

Questions 23-24

Choose **TWO** letters, **A-E**.

Write the correct letters in boxes on your answer sheet.

23 **24** Which **TWO** of the following statements does the writer make about the discoveries of Barrett's team?

- **A** ☐ Artefacts found in the higher mountain passes were limited to skiing equipment.
- **B** ☐ Hunters went into the mountains even during periods of extreme cold.
- **C** ☐ The number of artefacts from certain time periods was relatively low.
- **D** ☐ Radiocarbon dating of artefacts produced some unreliable results.
- **E** ☐ More artefacts were found in Oppland than at any other mountain site.

Questions 25-26

Choose **TWO** letters, **A-E**.

Write the correct letters in boxes on your answer sheet.

25 **26** Which **TWO** of the following statements does the writer make about the Viking Age?

- **A** ☐ Hunters at this time benefited from an increased demand for goods.
- **B** ☐ The beginning of the period saw the greatest growth in the wealth of Vikings.
- **C** ☐ Vikings did not rely on ships alone to transport goods.
- **D** ☐ Norwegian towns at this time attracted traders from around the world.

E ☐ Vikings were primarily interested in their trading links with the Middle East.

PASSAGE 3

Plant ‘thermometer’ triggers springtime growth by measuring night-time heat

***A photoreceptor molecule in plant cells has been found to have a second job as a thermometer after dark – allowing plants* to *read seasonal temperature changes. Scientists say the discovery could help breed crops that are more resilient to the temperatures expected* to *result from climate change*.**

A.

An international team of scientists led by the University of Cambridge has discovered that the ‘thermometer’ molecule in plants enables them to develop according to seasonal temperature changes. Researchers have revealed that molecules called **phytochromes** — used by plants to detect light during the day actually change their function in darkness to become cellular temperature gauges that measure the heat of the night.

The new findings, published in the journal *Science,* show that phytochromes control genetic switches in response to temperature as well as light to dictate plant development.

B.

At night, these molecules change states, and the pace at which they change is ‘directly proportional to temperature’, say scientists, who compare phytochromes to mercury in a thermometer. The warmer it is, the faster the molecular change — stimulating plant growth.

C.

Farmers and gardeners have known for hundreds of years how responsive plants are to temperature: warm winters cause many trees and flowers to bud early, something humans have long used to predict weather and harvest times for the coming year. The latest research pinpoints for the first time a molecular mechanism in plants that reacts to temperature — often triggering the buds of spring we long to see at the end of winter.

D.

With weather and temperatures set to become ever more unpredictable due to climate change, researchers say the discovery that this light-sensing molecule also functions as the internal thermometer in plant cells could help us breed tougher crops. ‘It is estimated that agricultural yields will need to double by 2050, but climate change is a major threat to achieving this. Key crops such as wheat and rice are sensitive to high temperatures. Thermal stress reduces crop yields by around 10% for every one degree increase in temperature,’ says lead researcher Dr Philip Wigge from Cambridge’s Sainsbury Laboratory. ‘Discovering the molecules that allow plants to sense temperature has the potential to accelerate the breeding of crops resilient to thermal stress and climate change.’

E.

In their active state, phytochrome molecules bind themselves to DNA to restrict plant growth. During the day, sunlight activates the molecules, slowing down growth. If a plant finds itself in shade, phytochromes are quickly inactivated — enabling it to grow faster to find sunlight again. This is how plants compete to escape each other's shade. 'Light-driven changes to phytochrome activity occur very fast, in less than a second,' says Wigge.

At night, however, it's a different story. Instead of a rapid deactivation following sundown, the molecules gradually change from their active to inactive state. This is called 'dark reversion'. 'Just as mercury rises in a thermometer, the rate at which phytochromes revert to their inactive state during the night is a direct measure of temperature,' says Wigge.

F.

'The lower the temperature, the slower the rate at which phytochromes revert to inactivity, so the molecules spend more time in their active, growth-suppressing state. This is why plants are slower to grow in winter. Warm temperatures accelerate dark reversion, so that phytochromes rapidly reach an inactive state and detach themselves from the plant's DNA — allowing genes to be expressed and plant growth to resume.' Wigge believes phytochrome thermo-sensing evolved at a later stage, and co-opted the biological network already used for light-based growth during the downtime of night.

G.

Some plants mainly use day length as an indicator of the season. Other species, such as daffodils, have considerable temperature sensitivity, and can flower months in advance during a warm winter. In fact, the discovery of the dual role of phytochromes provides the science behind a well-known rhyme long used to predict the coming season: oak before ash we'll have a splash, ash before oak we're in for a soak.

Wigge explains: 'Oak trees rely much more on temperature, likely using phytochromes as thermometers to dictate development, whereas ash trees rely on measuring day length to determine their seasonal timing. A warmer spring, and consequently a higher likeliness of a hot summer, will result in oak leafing before ash. A cold spring will see the opposite. As the British know only too well, a colder summer is likely to be a rain-soaked one.'

H.

The new findings are the culmination of twelve years of research involving scientists from Germany, Argentina and the US, as well as the Cambridge team. The work was done in a model system, using a mustard plant called *Arabidopsis,* but Wigge says the phytochrome genes necessary for temperature sensing are found in crop plants as well. 'Recent advances in plant genetics now mean that scientists are able to rapidly identify the genes controlling these processes in crop plants, and even alter their activity using precise molecular "scalpels",' adds Wigge. 'Cambridge is uniquely well-positioned to do this kind of research as we have outstanding collaborators nearby who work on more applied aspects of plant biology, and can help us transfer this new knowledge into the field.'

Questions 27-32

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

In boxes on your answer sheet, write

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

27 The Cambridge scientists' discovery of the 'thermometer molecule' caused surprise among other scientists.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

28 The target for agricultural production by 2050 could be missed.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

29 Wheat and rice suffer from a rise in temperatures.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

30 It may be possible to develop crops that require less water.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

31 Plants grow faster in sunlight than in shade.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

32 Phytochromes change their state at the same speed day and night.

- **A** ○ TRUE
- **B** ○ FALSE
- **C** ○ NOT GIVEN

Questions 33-37

The Reading Passage has eight sections, **A-H**.

Which section contains the following information?

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

33 mention of specialists who can make use of the research findings _____

34 a reference to a potential benefit of the research findings _____

35 scientific support for a traditional saying _____

36 a reference to people traditionally making plans based on plant behaviour _____

37 a reference to where the research has been reported _____

Questions 38-40

Complete the sentences below.

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

Write your answers in boxes on your answer sheet.

- Daffodils are likely to flower early in response to **38** _____ weather.

- If ash trees come into leaf before oak trees, the weather in **39** _____ will probably be wet.
- The research was carried out using a particular species of **40** _____.

Answer Key

#	Answer	Explanation
1	**FALSE**	The Romans were not traditionally sailors but mostly land- based people, who learned to build ships from the people that they conquered, namely the Greeks and the Egyptians.
2	**NOT GIVEN**	Starting from the 6th century BCE, they were fixed using a method called mortise and tenon, whereby one plank locked into another without the need for stitching.
3	**FALSE**	Then in the first centuries of the current era, Mediterranean shipbuilders shifted to another shipbuilding method, still in use today, which consisted of building the frame first and then proceeding with the hull and the other components of the ship.
4	**TRUE**	Eventually, Rome's navy became the largest and most powerful in the Mediterranean, and the Romans had control over what they therefore called Mare Nostrum meaning 'our sea'.
5	**TRUE**	It is worth noting that contrary to popular perception, rowers were not slaves but mostly Roman citizens enrolled in the military.
6	**lightweight**	Warships were built to be lightweight and very speedy.
7	**bronze**	They had a bronze battering ram, which was used to pierce the timber hulls or break the oars of enemy vessels.
8	**levels**	The 'trireme' was the dominant warship from the 7th to 4th century BCE. It had rowers in the top, middle and lower levels, and approximately 50 rowers in each bank.
9	**hull**	Unlike warships, their V-shaped hull was deep underwater, meaning that they could not sail too close to the coast.
10	**triangular**	They had from one to three masts with large square sails and a small triangular sail at the bow.
11	**music**	In order to assist them, music would be played on an instrument, and oars would then keep time with this.
12	**grain**	The cargo on merchant ships included raw materials (e.g. iron bars, copper, marble and granite), and agricultural products (e.g. grain from Egypt's Nile valley).
13	**towboats**	Large merchant ships would approach the destination port and, just like today, be intercepted by a number of towboats that would drag them to the quay.

#	Answer	Explanation
14	**D**	Hunters would have easily misplaced arrows and they often discarded broken bows rather than take them all the way home.
15	**C**	Fieldwork is hard work — hiking with all our equipment, often camping on permafrost — but very rewarding
16	**F**	A colder turn in the Scandinavian climate would likely have meant widespread crop failures, so more people would have depended on hunting to make up for those losses.
17	**H**	That means archaeologists could be extracting some of those artefacts from retreating ice in years to come.
18	**G**	And growing Norwegian towns, along with export markets, would have created a booming demand for hides to fight off the cold, as well as antlers to make useful things like combs.
19	**B**	With climate change shrinking ice cover around the world, glacial archaeologists need to race the clock to find newly revealed artefacts, preserve them, and study them.
20	**microorganisms / micro-organisms**	This is because unless they’re protected from the microorganisms that cause decay, they tend not to last long.
21	**reindeer**	Reindeer once congregated on these icy patches in the later summer months
22	**insects**	to escape biting insects
23	**B / C**	But it turned out that hunters kept regularly venturing into the mountains even when the climate turned cold, based on the amount of stuff they had apparently dropped there. But there were few or no signs of activity during other periods.
24	**B / C**	But it turned out that hunters kept regularly venturing into the mountains even when the climate turned cold, based on the amount of stuff they had apparently dropped there. But there were few or no signs of activity during other periods.
25	**A / C**	Business must have been good for hunters. these recent discoveries show that plenty of goods travelled on overland routes, like the mountain passes of Oppland
26	**A / C**	Business must have been good for hunters. these recent discoveries show that plenty of goods travelled on overland routes, like the mountain passes of Oppland
27	**NOT GIVEN**	An international team of scientists led by the University of Cambridge has discovered that the ‘thermometer’ molecule in plants enables them to develop according to seasonal temperature changes.

#	Answer	Explanation
28	**TRUE**	It is estimated that agricultural yields will need to double by 2050, but climate change is a major threat to achieving this.
29	**TRUE**	Key crops such as wheat and rice are sensitive to high temperatures. Thermal stress reduces crop yields by around 10% for every one degree increase in temperature
30	**NOT GIVEN**	researchers say the discovery that this light-sensing molecule also functions as the internal thermometer in plant cells could help us breed tougher crops.
31	**FALSE**	During the day, sunlight activates the molecules, slowing down growth. If a plant finds itself in shade, phytochromes are quickly inactivated — enabling it to grow faster to find sunlight again.
32	**FALSE**	At night, however, it's a different story. Instead of a rapid deactivation following sundown, the molecules gradually change from their active to inactive state.
33	**H**	Cambridge is uniquely well-positioned to do this kind of research as we have outstanding collaborators nearby who work on more applied aspects of plant biology, and can help us transfer this new knowledge into the field.
34	**D**	Discovering the molecules that allow plants to sense temperature has the potential to accelerate the breeding of crops resilient to thermal stress and climate change.
35	**G**	In fact, the discovery of the dual role of phytochromes provides the science behind a well-known rhyme long used to predict the coming season: oak before ash we'll have a splash, ash before oak we're in for a soak.
36	**C**	warm winters cause many trees and flowers to bud early, something humans have long used to predict weather and harvest times for the coming year.
37	**A**	The new findings, published in the journal Science, show that phytochromes control genetic switches in response to temperature as well as light to dictate plant development.
38	**warm / warm winter**	Other species, such as daffodils, have considerable temperature sensitivity, and can flower months in advance during a warm winter.
39	**summer**	A warmer spring, and consequently a higher likeliness of a hot summer, will result in oak leafing before ash. A cold spring will see the opposite. As the British know only too well, a colder summer is likely to be a rain-soaked one.

#	Answer	Explanation
40	**mustard plant / mustard plants / mustard**	The new findings are the culmination of twelve years of research involving scientists from Germany, Argentina and the US, as well as the Cambridge team. The work was done in a model system, using a mustard plant called Arabidopsis

Cambridge IELTS 16 Academic Reading Test 4

PASSAGE 1

Roman tunnels

The Romans, who once controlled areas of Europe, North Africa and Asia Minor, adopted the construction techniques of other civilizations to build tunnels in their territories

The Persians, who lived in present-day Iran, were one of the first civilizations to build tunnels that provided a reliable supply of water to human settlements in dry areas. In the early first millennium BCE, they introduced the *qanat* method of tunnel construction, which consisted of placing posts over a hill in a straight line, to ensure that the tunnel kept to its route, and then digging vertical shafts down into the ground at regular intervals. Underground, workers removed the earth from between the ends of the shafts, creating a tunnel. The excavated soil was taken up to the surface using the shafts, which also provided ventilation during the work. Once the tunnel was completed, it allowed water to flow from the top of a hillside down towards a canal, which supplied water for human use. Remarkably, some *qanats* built by the Persians 2,700 years ago are still in use today.

They later passed on their knowledge to the Romans, who also used the *qanat* method to construct water-supply tunnels for agriculture. Roman *qanat* tunnels were constructed with vertical shafts dug at intervals of between 30 and 60 meters. The shafts were equipped with handholds and footholds to help those climbing in and out of them and were covered with a wooden or stone lid. To ensure that the shafts were vertical, Romans hung a plumb line from a rod placed across the top of each shaft and made sure that the weight at the end of it hung in the center of the shaft. Plumb lines were also used to measure the depth of the shaft and to determine the slope of the tunnel. The 5.6 kilometer Long Claudius tunnel, built in 41 CE to drain the Fucine Lake in central Italy, had shafts that were up to 122 meters deep, took 11 years to build and involved approximately 30,000 workers.

By the 6th century BCE, a second method of tunnel construction appeared called the *counter-excavation* method, in which the tunnel was constructed from both ends. It was used to cut through high mountains when the *qanat* method was not a practical alternative. This method required greater planning and advanced knowledge of surveying, mathematics and geometry as both ends of a tunnel had to meet correctly at the center of the mountain. Adjustments to the direction of the tunnel also had to be made whenever builders encountered geological problems or when it deviated from its set path. They constantly checked the tunnel's advancing direction.

For example, by looking back at the light that penetrated through the tunnel mouth, and made corrections whenever necessary. Large deviations could happen, and they could result in one end of the tunnel not being usable. An inscription written on the side of a 428-meter tunnel, built by the Romans as part of the Saldae aqueduct system in modern-day Algeria, describes how the two teams of builders missed each other in the mountain and how the later construction of a lateral link between both corridors corrected the initial error.

The Romans dug tunnels for their roads using the counter-excavation method, whenever they encountered obstacles such as hills or mountains that were too high for roads to pass over. An example is the 37-meter-long, 6-meter-high, Furlo Pass Tunnel built in Italy in 69-79 CE. Remarkably, a modern road still uses this tunnel today. Tunnels were also built for mineral extraction. Miners would locate a mineral vein and then pursue it with shafts and tunnels underground. Traces of such tunnels used to mine gold can still be found at the Dolaucothi mines in Wales. When the sole purpose of a tunnel was mineral extraction, construction required less planning, as the tunnel route was determined by the mineral vein.

Roman tunnel projects were carefully planned and carried out. The length of time it took to construct a tunnel depended on the method being used and the type of rock being excavated. The *qanat* construction method was usually faster than the counter-excavation method as it was more straightforward. This was because the mountain could be excavated not only from the tunnel mouths but also from shafts. The type of rock could also influence construction times. When the rock was hard, the Romans employed a technique called fire quenching which consisted of heating the rock with fire, and then suddenly cooling it with cold water so that it would crack.

Progress through hard rock could be very slow, and it was not uncommon for tunnels to take years, if not decades, to be built. Construction marks left on a Roman tunnel in Bologna show that the rate of advance through solid rock was 30 centimeters per day. In contrast, the rate of advance of the Claudius tunnel can be calculated at 1.4 meters per day. Most tunnels had inscriptions showing the names of patrons who ordered construction and sometimes the name of the architect. For example, the 1.4-kilometer Cevlik tunnel in Turkey, built to divert the floodwater threatening the harbor of the ancient city of Seleuceia Pieria, had inscriptions on the entrance, still visible today, that also indicate that the tunnel was started in 69 CE and was completed in 81 CE.

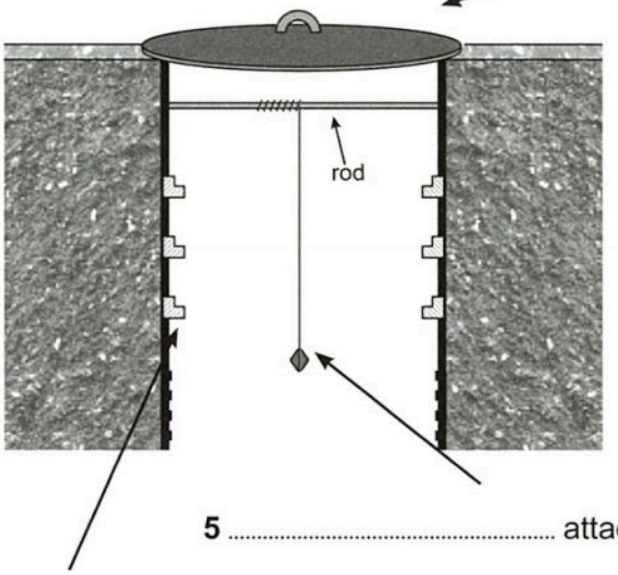
Questions 1-6

Label the diagrams below.

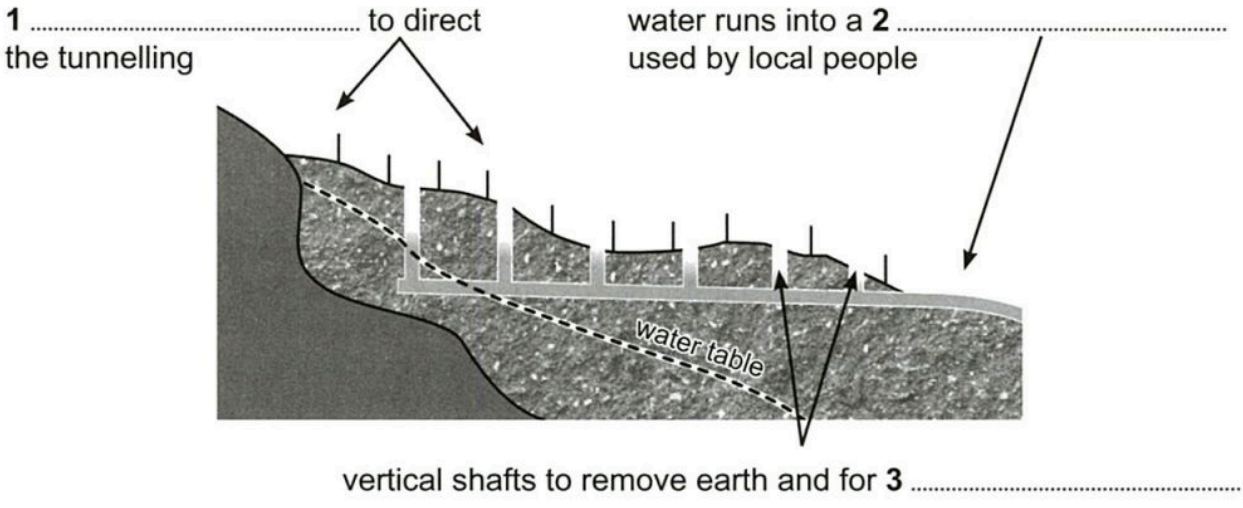
Choose **ONE WORD ONLY** from the passage for each answer.

Write your answers in boxes on your answer sheet.

Cross-section of a Roman Qanat Shaft



The Persian Qanat Method



1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

Questions 7-10

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

In boxes 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

7 The counter-excavation method completely replaced the qanat method in the 6th century BCE.

A ○ TRUE

B ○ FALSE

C ○ NOT GIVEN

8 Only experienced builders were employed to construct a tunnel using the counter-excavation method.

A ○ TRUE

B ○ FALSE

C ○ NOT GIVEN

9 The information about a problem that occurred during the construction of the Saldae aqueduct system was found in an ancient book.

A ○ TRUE

B ○ FALSE

C ○ NOT GIVEN

10 The mistake made by the builders of the Saldae aqueduct system was that the two parts of the tunnel failed to meet.

A ○ TRUE

B ○ FALSE

C ○ NOT GIVEN

Questions 11-13

Answer the questions below.

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

Write your answers in boxes on your answer sheet.

11 What type of mineral were the Dolaucothi mines in Wales built to extract?

_____

12 In addition to the patron, whose name might be carved onto a tunnel? _____

13 What part of Seleuceia Pieria was the Çevlik tunnel built to protect? _____

PASSAGE 2

Changes in reading habits

What are the implications of the way we read today?

Look around on your next plane trip. The iPad is the new pacifier for babies and toddlers. Younger school-aged children read stories on smartphones; older kids don't read at all, but hunch over video games. Parents and other passengers read on tablets or skim a flotilla of email and news feeds. Unbeknown to most of us, an invisible, game-changing transformation links everyone in this picture: the neuronal circuit that underlies the brain's ability to read is subtly, rapidly changing and this has implications for everyone from the pre-reading toddler to the expert adult.

As work in neurosciences indicates, the acquisition of literacy necessitated a new circuit in our species' brain more than 6,000 years ago. That circuit evolved from a very simple mechanism for decoding basic information, like the number of goats in one's herd, to the present, highly elaborated reading brain. My research depicts how the present reading brain enables the development of some of our most important intellectual and affective processes: internalized knowledge, analogical reasoning, and inference; perspective-taking and empathy; critical analysis and the generation of insight. Research surfacing in many parts of the world now cautions that each of these essential 'deep reading' processes may be under threat as we move into digital- based modes of reading.

This is not a simple, binary issue of print versus digital reading and technological innovation. As MIT scholar Sherry Turkle has written, we do not err as a society when we innovate but when we ignore what we disrupt or diminish while innovating. In this hinge moment between print and digital cultures, society needs to confront what is diminishing in the expert reading circuit, what our children and older students are not developing, and what we can do about it.

We know from research that the reading circuit is not given to human beings through a genetic blueprint like vision or language; it needs an environment to develop. Further, it will adapt to that environment's requirements — from different writing systems to the characteristics of whatever medium is used. If the dominant medium advantages processes that are fast, multi-task oriented and well-suited for large volumes of information, like the current digital medium, so will the reading circuit. As UCLA psychologist Patricia Greenfield writes, the result is that less attention and time will be allocated to slower, time-demanding deep reading processes.

Increasing reports from educators and from researchers in psychology and the humanities bear this out. English literature scholar and teacher Mark Edmundson describes how many college students actively avoid the classic literature of the 19th and 20th centuries in favour of something simpler as they no longer have the patience to read longer, denser, more difficult texts. We should be less concerned with students' *'cognitive impatience'*, however, than by what may underlie it: the potential inability of large numbers of students to read with a level of critical analysis sufficient to comprehend the complexity of thought and argument found in more demanding texts.

Multiple studies show that digital screen use may be causing a variety of troubling downstream effects on reading comprehension in older high school and college students. In Stavanger, Norway, psychologist Anne Mangen and her colleagues studied how high school students comprehend the same material in different mediums. Mangen's group asked subjects questions about a short story whose plot had universal student appeal; half of the students read the story on a tablet, the other half in paperback. Results indicated that students who read on print were superior in their comprehension to screen-reading peers, particularly in their ability to sequence detail and reconstruct the plot in chronological order.

Ziming Liu from San Jose State University has conducted a series of studies which indicate that the 'new norm' in reading is skimming, involving word-spotting and browsing through the text. Many readers now use a pattern when reading in which they sample the first line and then word- spot through the rest of the text. When the reading brain skims like this, it reduces time allocated to deep reading processes. In other words, we don't have time to grasp complexity, to understand another's feelings, to perceive beauty, and to create thoughts of the reader's own.

The possibility that critical analysis, empathy and other deep reading processes could become the unintended 'collateral damage' of our digital culture is not a straightforward binary issue about print versus digital reading. It is about how we all have begun to read on various mediums and how that changes not only what we read, but also the purposes for which we read. Nor is it only about the young. The subtle atrophy of critical analysis and empathy affects us all equally. It affects our ability to navigate a constant bombardment of information. It incentivizes a retreat to the most familiar stores of unchecked information, which require and receive no analysis, leaving us susceptible to false information and irrational ideas.

There's an old rule in neuroscience that does not alter with age: use it or lose it. It is a very hopeful principle when applied to critical thought in the reading brain because it implies choice. The story of the changing reading brain is hardly finished. We possess both the science and the technology to identify and redress the changes in how we read before they become entrenched. If we work to understand exactly what we will lose, alongside the extraordinary new capacities that the digital world has brought us, there is as much reason for excitement as caution.

Questions 14-17

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

Write the correct letter in boxes on your answer sheet.

14 What is the writer's main point in the first paragraph?

- **A** ○ Our use of technology is having a hidden effect on us.
- **B** ○ Technology can be used to help youngsters to read.
- **C** ○ Travellers should be encouraged to use technology on planes.
- **D** ○ Playing games is a more popular use of technology than reading.

15 What main point does Sherry Turkle make about innovation?

- **A** ○ Technological innovation has led to a reduction in print reading.
- **B** ○ We should pay attention to what might be lost when innovation occurs.
- **C** ○ We should encourage more young people to become involved in innovation.
- **D** ○ There is a difference between developing products and developing ideas.

16 What point is the writer making in the fourth paragraph?

- **A** ○ Humans have an inborn ability to read and write.
- **B** ○ Reading can be done using many different mediums.
- **C** ○ Writing systems make unexpected demands on the brain.
- **D** ○ Some brain circuits adjust to whatever is required of them.

17 According to Mark Edmundson, the attitude of college students

- **A** ○ has changed the way he teaches.
- **B** ○ has influenced what they select to read.
- **C** ○ does not worry him as much as it does others.

D ◯ does not match the views of the general public.

Questions 18-22

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

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

Studies on digital screen use

There have been many studies on digital screen use, showing some **18** _____ trends. Psychologist Anne Mangen gave high-school students a short story to read, half using digital and half using print mediums. Her team then used a question-and-answer technique to find out how **19** _____ each group's understanding of the plot was. The findings showed a clear pattern in the responses, with those who read screens finding the order of information **20** _____ to recall.

Studies by Ziming Liu show that students are tending to read **21** _____ words and phrases in a text to save time. This approach, she says, gives the reader a superficial understanding of the **22** _____ content of material, leaving no time for thought.

A. **fast** B. **isolated** C. **emotional** D. **worrying** E. **many** F. **hard**
G. **combined** H. **thorough**

Questions 23-26

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

In boxes on your answer sheet, write

YES *if the statement agrees with the claims of the writer*

NO *if the statement contradicts the claims of the writer*

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

23 The medium we use to read can affect our choice of reading content.

A ◯ YES

B ○ NO

C ○ NOT GIVEN

24 Some age groups are more likely to lose their complex reading skills than others.

A ○ YES

B ○ NO

C ○ NOT GIVEN

25 False information has become more widespread in today's digital era.

A ○ YES

B ○ NO

C ○ NOT GIVEN

26 We still have opportunities to rectify the problems that technology is presenting.

A ○ YES

B ○ NO

C ○ NOT GIVEN

PASSAGE 3

Attitudes towards Artificial Intelligence

27

A.

Artificial intelligence (AI) can already predict the future. Police forces are using it to map when and where crime is likely to occur. Doctors can use it to predict when a patient is most likely to have a heart attack or stroke. Researchers are even trying to give AI imagination so it can plan for unexpected consequences.

Many decisions in our lives require a good forecast, and AI is almost always better at forecasting than we are. Yet for all these technological advances, we still seem to deeply lack confidence in AI predictions. Recent cases show that people don't like relying on AI and prefer to trust human experts, even if these experts are wrong.

If we want AI to really benefit people, we need to find a way to get people to trust it. To do that, we need to understand why people are so reluctant to trust AI in the first place.

28

B.

Take the case of Watson for Oncology, one of technology giant IBM's supercomputer programs. Their attempt to promote this program to cancer doctors was a PR disaster. The AI promised to deliver top-quality recommendations on the treatment of 12 cancers that accounted for 80% of the world's eases. But when doctors first interacted with Watson, they found themselves in a rather difficult situation. On the one hand, if Watson provided guidance about a treatment that coincided with their own opinions, physicians did not see much point in Watson's recommendations. The supercomputer was simply telling them what they already knew, and these recommendations did not change the actual treatment.

On the other hand, if Watson generated a recommendation that contradicted the experts' opinion, doctors would typically conclude that Watson wasn't competent. And the machine wouldn't be able to explain why its treatment was plausible because its machine-learning algorithms were simply too complex to be fully understood by humans. Consequently, this has caused even more suspicion and disbelief, leading many doctors to ignore the seemingly outlandish AI recommendations and stick to their own expertise.

29

C.

This is just one example of people's lack of confidence in AI and their reluctance to accept what AI has to offer. Trust in other people is often based on our understanding of how others think and having experience of their reliability. This helps create a psychological feeling of safety. AI, on the other hand, is still fairly new and unfamiliar to most people. Even if it can be technically explained (and that's not always the case), AI's decision-making process is usually too difficult for most people to comprehend. And interacting with something we don't understand can cause anxiety and give us a sense that we're losing control.

Many people are also simply not familiar with many instances of AI actually working, because it often happens in the background. Instead they are acutely aware of instances where AI goes wrong. Embarrassing AI failures receive a disproportionate amount of media attention, emphasising the message that we cannot rely on technology. Machine learning is not foolproof, in part because the humans who design it aren't.

30

D.

Feelings about AI run deep. In a recent experiment, people from a range of backgrounds were given various sci-fi films about AI to watch and then asked questions about automation in everyday life. It was found that, regardless of whether the film they watched depicted AI in a positive or negative light, simply watching a cinematic vision of our technological future polarised the participants' attitudes. Optimists became more extreme in their enthusiasm for AI and sceptics became even more guarded.

This suggests people use relevant evidence about AI in a biased manner to support their existing attitudes, a deep-rooted human tendency known as "confirmation bias". As AI is represented more and more in media and entertainment, it could lead to a society split between those who benefit from AI and those who reject it. More pertinently, refusing to accept the advantages offered by AI could place a large group of people at a serious disadvantage.

31

E.

Fortunately, we already have some ideas about how to improve trust in AI. Simply having previous experience with AI can significantly improve people's opinions about the technology, as was found in the study mentioned above. Evidence also suggests the more you use other technologies such as the internet, the more you trust them.

Another solution may be to reveal more about the algorithms which AI uses and the purposes they serve. Several high-profile social media companies and online marketplaces already release transparency reports about government requests and surveillance disclosures. A similar practice for AI could help people have a better understanding of the way algorithmic decisions are made.

32

F.

Research suggests that allowing people some control over AI decision-making could also improve trust and enable AI to learn from human experience. For example, one study showed that when people were allowed the freedom to slightly modify an algorithm, they felt more satisfied with its decisions, more likely to believe it was superior and more likely to use it in the future.

We don’t need to understand the intricate inner workings of AI systems, but if people are given a degree of responsibility for how they are implemented, they will be more willing to accept AI into their lives.

Questions 27-32

The Reading Passage has six sections, **A-F**.

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

*Write the correct number, **i-viii**, in boxes on your answer sheet.*

List of Headings

i. **An increasing divergence of attitudes towards AI**

ii. **Reasons why we have more faith in human judgement than in AI**

iii. **The superiority of AI projections over those made by humans**

iv. **The process by which AI can help us make good decisions**

v. **The advantages of involving users in AI processes**

vi. **Widespread distrust of an AI innovation**

vii. **Encouraging openness about how AI functions**

viii. **A surprisingly successful AI application**

Questions 33-35

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

Write the correct letter in boxes on your answer sheet.

33 What is the writer doing in Section A?

- **A** ○ providing a solution to a concern
- **B** ○ justifying an opinion about an issue
- **C** ○ highlighting the existence of a problem
- **D** ○ explaining the reasons for a phenomenon

34 According to Section C, why might some people be reluctant to accept AI?

- **A** ○ They are afraid it will replace humans in decision-making jobs.
- **B** ○ Its complexity makes them feel that they are at a disadvantage.

C ◯ They would rather wait for the technology to be tested over a period of time.

D ◯ Misunderstandings about how it works make it seem more challenging than it is.

35 What does the writer say about the media in Section C of the text?

A ◯ It leads the public to be mistrustful of AI.

B ◯ It devotes an excessive amount of attention to AI.

C ◯ Its reports of incidents involving AI are often inaccurate.

D ◯ It gives the impression that AI failures are due to designer error.

Questions 36-40

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

In boxes on your answer sheet, write

YES if the statement agrees with the claims of the writer

NO if the statement contradicts the claims of the writer

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

36 Subjective depictions of AI in sci-fi films make people change their opinions about automation.

A ◯ YES

B ◯ NO

C ◯ NOT GIVEN

37 Portrayals of AI in media and entertainment are likely to become more positive.

A ◯ YES

B ◯ NO

C ◯ NOT GIVEN

38 Rejection of the possibilities of AI may have a negative effect on many people's lives.

A ◯ YES

B ○ NO

C ○ NOT GIVEN

39 Familiarity with AI has very little impact on people's attitudes to the technology.

A ○ YES

B ○ NO

C ○ NOT GIVEN

40 AI applications which users are able to modify are more likely to gain consumer approval.

A ○ YES

B ○ NO

C ○ NOT GIVEN

Answer Key

#	Answer	Explanation
1	**posts**	they introduced the qanat method of tunnel construction, which consisted of placing posts over a hill in a straight line, to ensure that the tunnel kept to its route, and then digging vertical shafts down into the ground at regular intervals.
2	**canal**	Once the tunnel was completed, it allowed water to flow from the top of a hillside down towards a canal, which supplied water for human use.
3	**ventilation**	The excavated soil was taken up to the surface using the shafts, which also provided ventilation during the work.
4	**lid**	The shafts were equipped with handholds and footholds to help those climbing in and out of them and were covered with a wooden or stone lid.
5	**weight**	To ensure that the shafts were vertical, Romans hung a plumb line from a rod placed across the top of each shaft and made sure that the weight at the end of it hung in the center of the shaft.
6	**climbing**	The shafts were equipped with handholds and footholds to help those climbing in and out of them and were covered with a wooden or stone lid.
7	**FALSE**	It was used to cut through high mountains when the qanat method was not a practical alternative.
8	**NOT GIVEN**	This method required greater planning and advanced knowledge of surveying, mathematics and geometry as both ends of a tunnel had to meet correctly at the center of the mountain.
9	**FALSE**	An inscription written on the side of a 428-meter tunnel
10	**TRUE**	the two teams of builders missed each other in the mountain and how the later construction of a lateral link between both corridors corrected the initial error
11	**gold**	Traces of such tunnels used to mine gold can still be found at the Dolaucothi mines in Wales.
12	**architect / architect's / architect's name / architect name / the architect / the architect's / the**	Most tunnels had inscriptions showing the names of patrons who ordered construction and sometimes the name of the architect.

#	Answer	Explanation
	architect's name / the architect name	
13	**harbour / harbor / the harbour / the harbor**	the 1.4-kilometer Cevlik tunnel in Turkey, built to divert the floodwater threatening the harbor of the ancient city of Seleuceia Pieria
14	**A**	Unbeknown to most of us, an invisible, game-changing transformation links everyone in this picture: the neuronal circuit that underlies the brain's ability to read is subtly, rapidly changing and this has implications for everyone from the pre-reading toddler to the expert adult.
15	**B**	As MIT scholar Sherry Turkle has written, we do not err as a society when we innovate but when we ignore what we disrupt or diminish while innovating
16	**D**	it will adapt to that environment's requirements — from different writing systems to the characteristics of whatever medium is used.
17	**B**	Mark Edmundson describes how many college students actively avoid the classic literature of the 19th and 20th centuries in favour of something simpler as they no longer have the patience to read longer, denser, more difficult texts
18	**D**	Multiple studies show that digital screen use may be causing a variety of troubling downstream effects on reading comprehension in older high school and college students.
19	**H**	Results indicated that students who read on print were superior in their comprehension to screen-reading peers
20	**F**	particularly in their ability to sequence detail and reconstruct the plot in chronological order.
21	**B**	the 'new norm' in reading is skimming, involving word-spotting and browsing through the text
22	**C**	In other words, we don't have time to grasp complexity, to understand another's feelings, to perceive beauty, and to create thoughts of the reader's own.
23	**YES**	It is about how we all have begun to read on various mediums and how that changes not only what we read, but also the purposes for which we read.
24	**NO**	The subtle atrophy of critical analysis and empathy affects us all equally.
25	**NOT GIVEN**	It incentivizes a retreat to the most familiar stores of unchecked information, which require and receive no analysis, leaving us

#	Answer	Explanation
		susceptible to false information and irrational ideas.
26	**YES**	We possess both the science and the technology to identify and redress the changes in how we read before they become entrenched.
27	**iii**	Many decisions in our lives require a good forecast, and AI is almost always better at forecasting than we are.
28	**vi**	Consequently, this has caused even more suspicion and disbelief, leading many doctors to ignore the seemingly outlandish AI recommendations and stick to their own expertise.
29	**ii**	Trust in other people is often based on our understanding of how others think and having experience of their reliability. This helps create a psychological feeling of safety.
30	**i**	As AI is represented more and more in media and entertainment, it could lead to a society split between those who benefit from AI and those who reject it.
31	**vii**	Another solution may be to reveal more about the algorithms which AI uses and the purposes they serve.
32	**v**	Research suggests that allowing people some control over AI decision-making could also improve trust and enable AI to learn from human experience.
33	**C**	Yet for all these technological advances, we still seem to deeply lack confidence in AI predictions.
34	**B**	AI's decision-making process is usually too difficult for most people to comprehend. And interacting with something we don't understand can cause anxiety and give us a sense that we're losing control.
35	**A**	Embarrassing AI failures receive a disproportionate amount of media attention, emphasising the message that we cannot rely on technology.
36	**NO**	Optimists became more extreme in their enthusiasm for AI and sceptics became even more guarded.
37	**NOT GIVEN**	As AI is represented more and more in media and entertainment, it could lead to a society split between those who benefit from AI and those who reject it.
38	**YES**	More pertinently, refusing to accept the advantages offered by AI could place a large group of people at a serious disadvantage.
39	**NO**	Simply having previous experience with AI can significantly improve people's opinions about the technology

#	Answer	Explanation
40	**YES**	For example, one study showed that when people were allowed the freedom to slightly modify an algorithm, they felt more satisfied with its decisions, more likely to believe it was superior and more likely to use it in the future.

Cambridge IELTS 16 Academic Listening Test 1

PART 1 — QUESTIONS

Part 1 Audio: https://ielts-listening-audio.engnovatemedia.com/13183-cambridge-ielts-16-academic-listening-1-audio-1.mp3

Questions 1-10

Complete the notes below.

Write **ONE WORD AND/OR A NUMBER** for each answer.

Children's Engineering Workshops

Tiny Engineers (ages 4-5)

Activities

- Create a cover for an **1** _____ so they can drop it from a height without breaking it.
- Take part in a competition to build the tallest **2** _____.
- Make a **3** _____ powered by a balloon.

Junior Engineers (ages 6-8)

Activities:

- Build model cars, trucks and **4** _____ and learn how to program them so they can move.
- Take part in a competition to build the longest **5** _____ using card and wood.
- Create a short **6** _____ with special software.
- Build, **7** _____ and program a humanoid robot.

Cost for a five-week block: £50

Held on **8** _____ from 10 am to 11 am

Location

Building 10A, **9** _____ Industrial Estate, Grasford

Plenty of **10** _____ is available.

PART 2 — QUESTIONS

Part 2 Audio: https://ielts-listening-audio.engnovatemedia.com/13182-cambridge-ielts-16-academic-listening-1-audio-2.mp3

Questions 11-14

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

11 Stevenson's was founded in

- **A** ○ 1923.
- **B** ○ 1924.
- **C** ○ 1926.

12 Originally, Stevenson's manufactured goods for

- **A** ○ the healthcare industry.
- **B** ○ the automotive industry.
- **C** ○ the machine tools industry.

13 What does the speaker say about the company premises?

- **A** ○ The company has recently moved.
- **B** ○ The company has no plans to move.
- **C** ○ The company is going to move shortly.

14 The programme for the work experience group includes

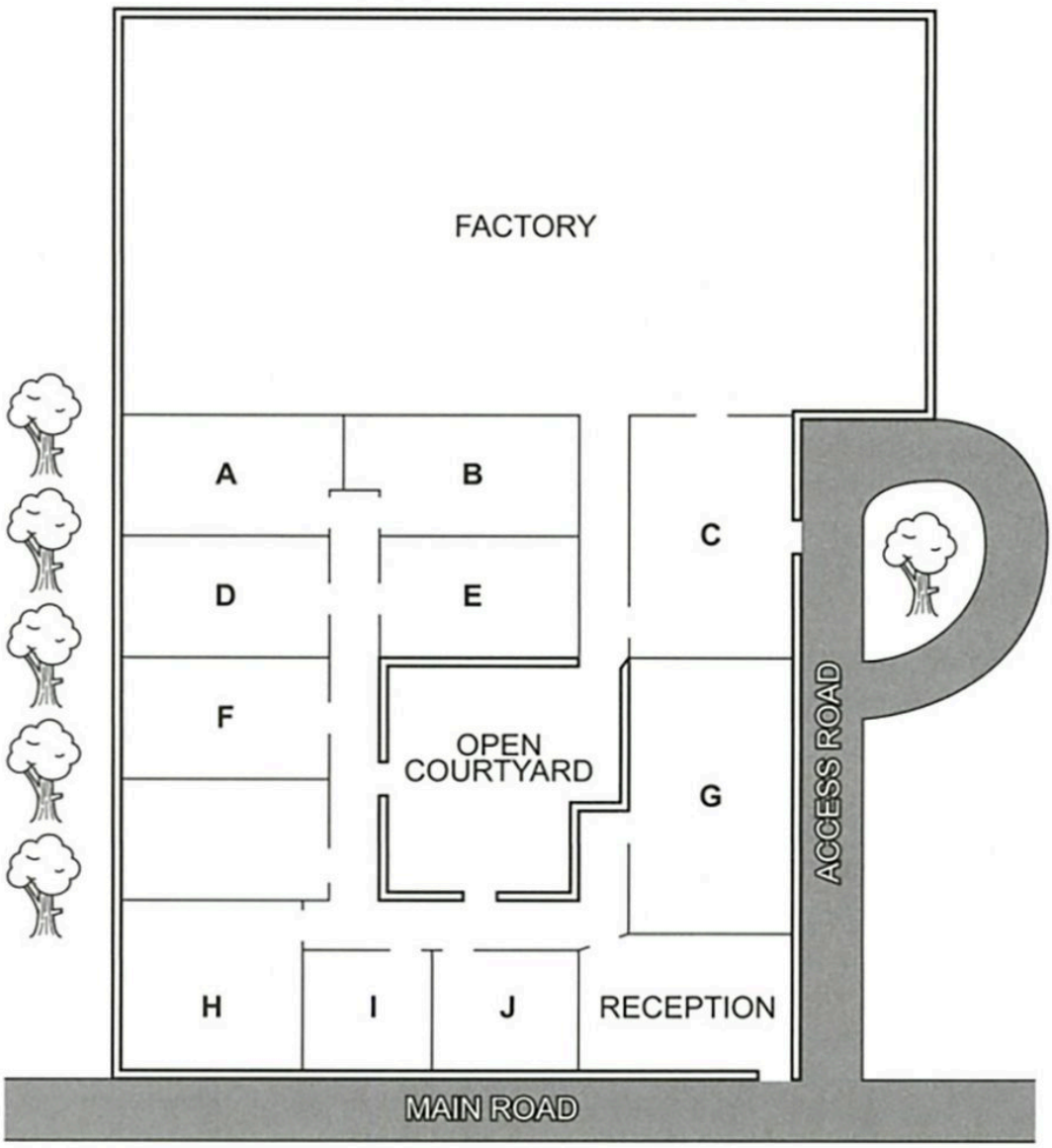
- **A** ○ time to do research.
- **B** ○ meetings with a teacher.
- **C** ○ talks by staff.

Questions 15-20

Label the map below.

*Write the correct letter, **A-J**, next to Questions.*

Plan of Stevenson's site



	A	B	C	D	E	F	G	H	I	J
15 coffee room	○	○	○	○	○	○	○	○	○	○
16 warehouse	○	○	○	○	○	○	○	○	○	○
17 staff canteen	○	○	○	○	○	○	○	○	○	○
18 meeting room	○	○	○	○	○	○	○	○	○	○
19 human resources	○	○	○	○	○	○	○	○	○	○

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

PART 3 — QUESTIONS

Part 3 Audio: https://ielts-listening-audio.engnovatemedia.com/13181-cambridge-ielts-16-academic-listening-1-audio-3.mp3

Questions 21-22

Choose **TWO** letters, **A-E**.

21 **22** Which **TWO** parts of the introductory stage to their art projects do Jess and Tom agree were useful?

- **A** ☐ the Bird Park visit
- **B** ☐ the workshop sessions
- **C** ☐ the Natural History Museum visit
- **D** ☐ the projects done in previous years
- **E** ☐ the handouts with research sources

Questions 23-24

Choose **TWO** letters, **A-E**.

23 **24** In which **TWO** ways do both Jess and Tom decide to change their proposals?

- **A** ☐ by giving a rationale for their action plans
- **B** ☐ by being less specific about the outcome
- **C** ☐ by adding a video diary presentation
- **D** ☐ by providing a timeline and a mind map
- **E** ☐ by making their notes more evaluative

Questions 25-30

Which personal meaning do the students decide to give to each of the following pictures?

Choose **SIX** answers from the box and write the correct letter, **A-H**, next to Questions.

Personal meanings

A a childhood memory

B hope for the future

C fast movement

D a potential threat

E the power of colour

F the continuity of life

G protection of nature

H a confused attitude to nature

Pictures

25 Falcon (Landseer) _____

26 Fish hawk (Audubon) _____

27 Kingfisher (van Gogh) _____

28 Portrait of William Wells _____

29 Vairumati (Gauguin) _____

30 Portrait of Giovanni de Medici _____

PART 4 — QUESTIONS

Part 4 Audio: https://ielts-listening-audio.engnovatemedia.com/13180-cambridge-ielts-16-academic-listening-1-audio-4.mp3

Questions 31-40

Complete the notes below.

Write **ONE WORD ONLY** for each answer.

Stoicism

Stoicism is still relevant today because of its **31** _____ appeal.

Ancient Stoics

- Stoicism was founded over 2,000 years ago in Greece.
- The Stoics' ideas are surprisingly well known, despite not being intended for **32** _____

Stoic principles

- Happiness could be achieved by leading a virtuous life.
- Controlling emotions was essential.
- Epictetus said that external events cannot be controlled but the **33** _____ people make in response can be controlled.
- A Stoic is someone who has a different view on experiences which others would consider as **34** _____.

The influence of Stoicism

- George Washington organised a **35** _____ about Cato to motivate his men.
- The French artist Delacroix was a Stoic.
- Adam Smith's ideas on **36** _____ were influenced by Stoicism.
- Some of today's political leaders are inspired by the Stoics.
- Cognitive Behaviour Therapy (CBT)

– the treatment for **37** _____ is based on ideas from Stoicism

– people learn to base their thinking on **38** _____.

- In business, people benefit from Stoicism by identifying obstacles as **39** _____.

Relevance of Stoicism

- It requires a lot of **40** _____ but Stoicism can help people to lead a good life.
- It teaches people that having a strong character is more important than anything else.

Transcripts

Part 1

SARAH: Hello. Children's Engineering Workshops.

FATHER: Oh hello. I wanted some information about the workshops in the school holidays.

SARAH: Sure.

FATHER: I have two daughters who are interested. The younger one's Lydia, she's four – do you take children as young as that?

SARAH: Yes, our Tiny Engineers workshop is for four to five-year-olds.

FATHER: What sorts of activities do they do?

SARAH: All sorts. For example, they work together to design a special cover that goes round an egg, so that when it's inside they can drop it from a height and it doesn't break. Well, sometimes it does break but that's part of the fun!

FATHER: Right. And Lydia loves building things. Is there any opportunity for her to do that?

SARAH: Well, they have a competition to see who can make the highest tower. You'd be amazed how high they can go.

FATHER: Right.

SARAH: But they're learning all the time as well as having fun. For example, one thing they do is to design and build a car that's attached to a balloon, and the force of the air in that actually powers the car and makes it move along. They go really fast too.

FATHER: OK, well, all this sounds perfect.

———————

FATHER: Now Carly, that's my older daughter, has just had her seventh birthday, so presumably she'd be in a different group?

SARAH: Yes, she'd be in the Junior Engineers. That's for children from six to eight.

FATHER: And do they do the same sorts of activities?

SARAH: Some are the same, but a bit more advanced. So they work out how to build model vehicles, things like cars and trucks, but also how to construct animals using the same sorts of material and technique, and then they learn how they can program them and make them move.

FATHER: So they learn a bit of coding?

SARAH: They do. They pick it up really quickly. We're there to help if they need it, but they learn from one another too.

FATHER: Right. And do they have competition too?

SARAH: Yes, with the Junior Engineers, it's to use recycled materials like card and wood to build a bridge, and the longest one gets a prize.

FATHER: That sounds fun. I wouldn't mind doing that myself!

SARAH: Then they have something a bit different, which is to think up an idea for a five-minute movie and then film it, using special animation software. You'd be amazed what they come up with.

FATHER: And of course, that's something they can put on their phone and take home to show all their friends.

SARAH: Exactly. And then they also build a robot in the shape of a human, and they decorate it and program it so that it can move its arms and legs.

FATHER: Perfect. So, is it the same price as the Tiny Engineers?

SARAH: It's just a bit more: £50 for the five weeks.

FATHER: And are the classes on a Monday, too?

SARAH: They used to be, but we found it didn't give our staff enough time to clear up after the first workshop, so we moved them to Wednesdays. The classes are held in the morning from ten to eleven.

FATHER: OK. That's better for me actually. And what about the location? Where exactly are the workshops held?

SARAH: They're in building 10A – there's a big sign on the door, you can't miss it, and that's in Fradstone Industrial Estate.

FATHER: Sorry?

SARAH: Fradstone – that's F-R-A-D-S-T-O-N-E.

FATHER: And that's in Grasford, isn't it?

SARAH: Yes, up past the station.

FATHER: And will I have any parking problems there?

SARAH: No, there's always plenty available. So would you like to enrol Lydia and Carly now?

FATHER: OK.

SARAH: So can I have your full name ...

Part 2

Good morning, everyone, and welcome to Stevenson's, one of the country's major manufacturers of metal goods. Thank you for choosing us for your two weeks of work experience. My name is Julia Simmons, and since the beginning of this year I've been the managing director.

Stevenson's is quite an old company. Like me, the founder, Ronald Stevenson, went into the steel industry when he left school – that was in 1923. He set up this company when he finished his apprenticeship, in 1926, although he actually started making plans two years earlier, in 1924. He was a very determined young man!

Stevenson's long-term plan was to manufacture components for the machine tools industry – although in fact that never came about – and for the automotive industry, that is, cars and lorries. However, there was a delay of five years before that happened, because shortly before the company went into production, Stevenson was given the opportunity to make goods for hospitals and other players in the healthcare industry, so that's what we did for the first five years.

Over the years, we've expanded the premises considerably – we were lucky that the site is big enough, so moving to a new location has never been necessary. However, the layout is far from ideal for modern machinery and production methods, so we intend to carry out major refurbishment of this site over the next five years.

I'd better give you some idea of what you'll be doing during your two weeks with us, so you know what to expect. Most mornings you'll have a presentation from one of the managers, to learn about their department, starting this morning with research and development. And you'll all spend some time in each department, observing what's going on and talking to people – as long as you don't stop them from doing their work altogether! In the past, a teacher from your school has come in at the end of each week to find out how the group were getting on, but your school isn't able to arrange that this year.

———————

OK, now I'll briefly help you to orientate yourselves around the site. As you can see, we're in the reception area, which we try to make attractive and welcoming to visitors. There's a corridor running left from here, and if you go along that, the door facing you at the end is the entrance to the coffee room. This looks out onto the main road on one side, and some trees on the other, and that'll be where you meet each morning.

The factory is the very big room on the far side of the site. Next to it is the warehouse, which can be accessed by lorries going up the road to the turning area at the end. You can get to the warehouse by crossing to the far side of the courtyard, and then the door is on your right.

Somewhere you'll be keen to find is the staff canteen. This is right next to reception. I can confidently say that the food's very good, but the view isn't. The windows on one side look onto a corridor and courtyard, which aren't very attractive at all, and on the other onto the access road, which isn't much better.

You'll be using the meeting room quite often, and you'll find it by walking along the corridor to the left of the courtyard, and continuing along it to the end. The meeting room is the last one on the right, and I'm afraid there's no natural daylight in the room.

Then you'll need to know where some of the offices are. The human resources department is all the front of this building, so you head to the left along the corridor from reception, and it's the second room you come to. It looks out onto the main road.

And finally, the boardroom, where you'll be meeting sometimes. That has quite a pleasant view, as it looks out on to the trees. Go along the corridor past the courtyard, right to the end. The boardroom is on the left, next to the factory.

OK, now are there any questions before we ...

Part 3

JESS: How are you getting on with your art project, Tom?

TOM: OK. Like, they gave us the theme of birds to base our project on, and I'm not really all that interested in wildlife. But I'm starting to get into it. I've pretty well finished the introductory stage.

JESS: So have I. When they gave us all those handouts with details of books and websites to look at, I was really put off, but the more I read, the more interested I got.

TOM: Me too. I found I could research so many different aspects of birds in art – colour, movement, texture. So I was looking forward to the Bird Park visit.

JESS: What a letdown! It poured with rain and we hardly saw a single bird. Much less use than the trip to the Natural History Museum.

TOM: Yeah, I liked all the stuff about evolution there. The workshop sessions with Dr Fletcher were good too, especially the brainstorming sessions.

JESS: I missed those because I was ill. I wish we could've seen the projects last year's students did.

TOM: Mm. I suppose they want us to do our own thing, not copy.

JESS: Have you drafted your proposal yet?

TOM: Yes, but I haven't handed it in. I need to amend some parts. I've realised the notes from my research are almost all just descriptions, I haven't actually evaluated anything. So I'll have to fix that.

JESS: Oh, I didn't know we had to do that. I'll have to look at that too. Did you do a timeline for the project?

TOM: Yes, and a mind map.

JESS: Yeah, so did I. I quite enjoyed that. But it was hard having to explain the basis for my decisions in my action plan.

TOM: What?

JESS: You know, give a rationale.

TOM: I didn't realise we had to do that. OK, I can add it now. And I've done the video diary presentation, and worked out what I want my outcome to be in the project.

JESS: Someone told me it's best not to be too precise about your actual outcome at this stage, so you have more scope to explore your ideas later on. So I'm going to do back to my proposal to make it a bit more vague.

TOM: Really? OK, I'll change that too then.

———————————

TOM: One part of the project, I'm unsure about is where we choose some paintings of birds and say what they mean to us. Like, I chose a painting of a falcon by Landseer. I like it because the bird's standing there with his head turned to one side, but he seems to be staring straight at you. But I can't just say it's a bit scary, can I?

JESS: You could talk about the possible danger suggested by the bird's look.

TOM: Oh, OK.

JESS: There's a picture of a fish hawk by Audubon I like. It's swooping over the water with a fish in its talons, and with great black wings which take up most of the picture.

TOM: So you could discuss it in relation to predators and food chains?

JESS: Well actually I think I'll concentrate on the impression of rapid motion it gives.

TOM: Right.

JESS: Do you know that picture of a kingfisher by van Gosh – it's perching on a reed growing near a stream.

TOM: Yes, it's got these beautiful blue and red and black shades.

JESS: Mm hm. I've actually chosen it because I saw a real kingfisher once when I was litter, I was out walking with my grandfather, and I've never forgotten it.

TOM: So we can use a personal link?

JESS: Sure.

TOM: OK. There's a portrait called *William Wells*. I can't remember the artist but it's a middle-aged man who's just shot a bird. And his expression, and the way he's holding the bird in his hand suggests he's not sure about what he's done. To me it's about how ambiguous people are in the way they exploit the natural world.

JESS: Interesting. There's Gauguin's picture *Vairumati*. He did it in Tahiti. It's a woman with a white bird behind her that is eating a lizard, and what I'm interested in is what idea this bird refers to. Apparently, it's a reference to the never-ending cycle of existence.

TOM: Wow. I chose a portrait of a little boy, Giovanni de Medici. He's holding a tiny bird in one fist. I like the way he's holding it carefully so he doesn't hurt it.

JESS: Ah right.

Part 4

Ancient philosophy is not just about talking or lecturing, or even reading long, dense books. In fact, it is something people have used throughout history – to solve their problems and to achieve their greatest triumphs.

Specifically, I am referring to Stoicism, which, in my opinion, is the most practical of all philosophies and therefore the most appealing. Stoicism was founded in Ancient Greece by Zeno of Citium in the early 3rd century BC, but was practised by the likes of Epictetus, Cato.

Seneca and Marcus Aurelius. Amazingly, we still have access to these ideas, despite the fact that the most famous Stoics never wrote anything down for publication. Cato definitely didn't. Marcus Aurelius never intended his *Meditations* to be anything but personal. Seneca's letters were, well, letters and Epictetus' thoughts come to us by way of a note-taking student.

Stoic principles were based on the idea that its followers could have an unshakable happiness in this life and the key to achieving this was virtue. The road to virtue, in turn, lay in understanding that destructive emotions, like anger and jealousy, are under our conscious control – they don't have to control us, because we can learn to control them. In the words of Epictetus: "external events I cannot control, but the choices I make with regard to them, I do control".

The modern day philosopher and writer Nassim Nicholas Taleb defines a Stoic as someone who has a different perspective on experience which most of us would see as wholly negative; a Stoic "transforms fear into caution, pain into transformation, mistakes into initiation and desire into undertaking". Using this definition as a model, we can see that throughout the centuries Stoicism has been practised in more recent history by kings, presidents, artists, writers and entrepreneurs.

———————

The founding fathers of the United States were inspired by the philosophy. George Washington was introduced to Stoicism by his neighbours at age seventeen, and later, put on a play based on the life of Cato to inspire his men. Thomas Jefferson kept a copy of Seneca beside his bed.

Writers and artists have also been inspired by the stoics. Eugène Delacroix, the renowned French Romantic artist (known best for his painting *Liberty Leading the People*) was an ardent Stoic, referring to it as his "consoling religion".

The economist Adam Smith's theories on capitalism were significantly influenced by the Stoicism that he studied as a schoolboy, under a teacher who had translated Marcus Aurelius' works.

Today's political leaders are no different, with many finding their inspiration from the ancient texts. Former US president Bill Clinton rereads Marcus Aurelius every single year, and many have compared former President Obama's calm leadership style to that of Cato. Wen Jiabao, the former prime minister of China, claims that *Meditations* is one of two books he travels with and that he has read it more than one hundred times over the course of his life.

Stoicism had a profound influence on Albert Ellis, who invented Cognitive Behaviour Therapy, which is used to help people manage their problems by changing the way that they think and behave. It's most commonly used to treat depression. The idea is that we can take control of our lives by challenging the irrational belief that create our faulty thinking, symptoms and behaviours by using logic instead.

Stoicism has also become popular in the world of business. Stoic principles can build the resilience and state of mind required to overcome setbacks because Stoics teach turning obstacles into opportunity. A lesson every business entrepreneur needs to learn.

I would argue that study Stoicism is as relevant today as it was 2,000 years ago, thanks to its brilliant insights into how to lead a good life. At the very root of the thinking, there is a very simple way of living – control what you can and accept what you can't. This is not as easy as it sounds and will require considerable practice – it can take a lifetime to master. The Stoics also believed the most important foundation for a good and happy life is not money, fame, power or pleasure, but having a disciplined and principled character – something which seems to resonate with many people today.

Answer Key

#	Answer	Explanation
1	**egg**	For example, they work together to design a special cover that goes round an egg, so that when it's inside they can drop it from a height and it doesn't break
2	**tower**	Well, they have a competition to see who can make the highest tower.
3	**car**	For example, one thing they do is to design and build a car that's attached to a balloon, and the force of the air in that actually powers the car and makes it move along.
4	**animals**	but also how to construct animals using the same sorts of material and technique
5	**bridge**	Yes, with the Junior Engineers, it's to use recycled materials like card and wood to build a bridge, and the longest one gets a prize.
6	**movie / film**	Then they have something a bit different, which is to think up an idea for a five-minute movie and then film it, using special animation software.
7	**decorate**	And then they also build a robot in the shape of a human, and they decorate it and program it so that it can move its arms and legs.
8	**Wednesdays**	They used to be, but we found it didn't give our staff enough time to clear up after the first workshop, so we moved them to Wednesdays.
9	**Fradstone**	They're in building 10A – there's a big sign on the door, you can't miss it, and that's in Fradstone Industrial Estate.
10	**parking**	And will I have any parking problems there?
11	**C**	He set up this company when he finished his apprenticeship, in 1926
12	**A**	Stevenson was given the opportunity to make goods for hospitals and other players in the healthcare industry, so that's what we did for the first five years.
13	**B**	so moving to a new location has never been necessary.
14	**C**	Most mornings you'll have a presentation from one of the managers

#	Answer	Explanation
15	**H**	if you go along that, the door facing you at the end is the entrance to the coffee room. This looks out onto the main road on one side, and some trees on the other
16	**C**	Next to it is the warehouse, which can be accessed by lorries going up the road to the turning area at the end. You can get to the warehouse by crossing to the far side of the courtyard, and then the door is on your right.
17	**G**	Somewhere you'll be keen to find is the staff canteen. This is right next to reception. I can confidently say that the food's very good, but the view isn't. The windows on one side look onto a corridor and courtyard, which aren't very attractive at all, and on the other onto the access road, which isn't much better.
18	**B**	You'll be using the meeting room quite often, and you'll find it by walking along the corridor to the left of the courtyard, and continuing along it to the end. The meeting room is the last one on the right, and I'm afraid there's no natural daylight in the room.
19	**I**	The human resources department is all the front of this building, so you head to the left along the corridor from reception, and it's the second room you come to. It looks out onto the main road.
20	**A**	And finally, the boardroom, where you'll be meeting sometimes. That has quite a pleasant view, as it looks out on to the trees. Go along the corridor past the courtyard, right to the end. The boardroom is on the left, next to the factory.
21	**C / E**	When they gave us all those handouts with details of books and websites to look at, I was really put off, but the more I read, the more interested I got. Much less use than the trip to the Natural History Museum.
22	**C / E**	When they gave us all those handouts with details of books and websites to look at, I was really put off, but the more I read, the more interested I got. Much less use than the trip to the Natural History Museum.
23	**B / E**	I haven't actually evaluated anything. So I'll have to fix that Someone told me it's best not to be too precise about your actual outcome at this stage, so you have more scope to explore your ideas later on. So I'm going to do back to my proposal to make it a bit more vague.
24	**B / E**	I haven't actually evaluated anything. So I'll have to fix that Someone told me it's best not to be too precise about your actual outcome at this stage, so you have more scope to explore your ideas later on. So I'm going to do back to my proposal to make it a bit more vague.

#	Answer	Explanation
25	**D**	You could talk about the possible danger suggested by the bird's look.
26	**C**	Well actually I think I'll concentrate on the impression of rapid motion it gives.
27	**A**	I've actually chosen it because I saw a real kingfisher once when I was litter, I was out walking with my grandfather, and I've never forgotten it.
28	**H**	To me it's about how ambiguous people are in the way they exploit the natural world.
29	**F**	Apparently, it's a reference to the never-ending cycle of existence.
30	**G**	I chose a portrait of a little boy, Giovanni de Medici. He's holding a tiny bird in one fist. I like the way he's holding it carefully so he doesn't hurt it.
31	**practical**	Specifically, I am referring to Stoicism, which, in my opinion, is the most practical of all philosophies and therefore the most appealing.
32	**publication**	Amazingly, we still have access to these ideas, despite the fact that the most famous Stoics never wrote anything down for publication.
33	**choices**	In the words of Epictetus: "external events I cannot control, but the choices I make with regard to them, I do control".
34	**negative**	The modern day philosopher and writer Nassim Nicholas Taleb defines a Stoic as someone who has a different perspective on experience which most of us would see as wholly negative
35	**play**	George Washington was introduced to Stoicism by his neighbours at age seventeen, and later, put on a play based on the life of Cato to inspire his men.
36	**capitalism**	The economist Adam Smith's theories on capitalism were significantly influenced by the Stoicism that he studied as a schoolboy, under a teacher who had translated Marcus Aurelius' works.
37	**depression**	who invented Cognitive Behaviour Therapy
38	**logic**	It's most commonly used to treat depression. The idea is that we can take control of our lives by challenging the irrational belief that create our faulty thinking, symptoms and behaviours by using logic instead.

#	Answer	Explanation
39	**opportunity**	Stoic principles can build the resilience and state of mind required to overcome setbacks because Stoics teach turning obstacles into opportunity.
40	**practice / practise**	I would argue that study Stoicism is as relevant today as it was 2,000 years ago, thanks to its brilliant insights into how to lead a good life.

Cambridge IELTS 16 Academic Listening Test 2

PART 1 — QUESTIONS

Part 1 Audio: https://ielts-listening-audio.engnovatemedia.com/13211-cambridge-ielts-16-academic-listening-2-audio-1.mp3

Questions 1-10

Complete the notes below.

Write **ONE WORD AND/OR A NUMBER** for each answer.

Copying photos to digital format

Name of company: Picturerep

Requirements

- Maximum size of photos is 30 cm, minimum size 4 cm.
- Photos must not be in a **1** _____ or an album.

Cost

- The cost for 360 photos is £**2** _____ (including one disk).
- Before the complete order is sent, **3** _____ is required.

Services included in the price

- Photos can be placed in a folder, e.g. with the name **4** _____.
- The **5** _____ and contrast can be improved if necessary.
- Photos which are very fragile will be scanned by **6** _____.

Special restore service (costs extra)

- It may be possible to remove an object from a photo, or change the **7** _____.
- A photo which is not correctly in **8** _____ cannot be fixed.

Other information

- Orders are completed within **9** _____.

- Send the photos in a box (not **10** _____).

PART 2 — QUESTIONS

Part 2 Audio: https://ielts-listening-audio.engnovatemedia.com/13210-cambridge-ielts-16-academic-listening-2-audio-2.mp3

Questions 11-15

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

Minster Park

11 Dartfield House school used to be

- **A** ○ a tourist information centre.
- **B** ○ a private home.
- **C** ○ a local council building.

12 What is planned with regard to the lower school?

- **A** ○ All buildings on the main site will be improved.
- **B** ○ The lower school site will be used for new homes.
- **C** ○ Additional school buildings will be constructed on the lower school site.

13 The catering has been changed because of

- **A** ○ long queuing times.
- **B** ○ changes to the school timetable.
- **C** ○ dissatisfaction with the menus.

14 Parents are asked to

- **A** ○ help their children to decide in advance which serving point to use.
- **B** ○ make sure their children have enough money for food.
- **C** ○ advise their children on healthy food to eat.

15 What does the speaker say about the existing canteen?

- **A** ○ Food will still be served there.
- **B** ○ Only staff will have access to it.
- **C** ○ Pupils can take their food into it.

Questions 16-18

What comment does the speaker make about each of the following serving points in the Food Hall?

*Choose **THREE** answers from the box and write the correct letter, **A-D**, next to Questions.*

Comments

A pupils help to plan menus

B only vegetarian food

C different food every week

D daily change in menu

Food available at serving points in Food Hall

16 World Adventures _____

17 Street Life _____

18 Speedy Italian _____

Questions 19-20

Choose **TWO** letters, **A-E**.

19 **20** Which **TWO** optional after-school lessons are new?

- **A** ☐ swimming
- **B** ☐ piano
- **C** ☐ acting
- **D** ☐ cycling
- **E** ☐ theatre sound and lighting

PART 3 — QUESTIONS

Part 3 Audio: https://ielts-listening-audio.engnovatemedia.com/13209-cambridge-ielts-16-academic-listening-2-audio-3.mp3

Questions 21-24

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

Assignment on sleep and dreams

21 Luke read that one reason why we often forget dreams is that

- **A** ○ our memories cannot cope with too much information.
- **B** ○ we might other wise be confused about what is real.
- **C** ○ we do not think they are important.

22 What do Luke and Susie agree about dreams predicting the future?

- **A** ○ It may just be due to chance.
- **B** ○ It only happens with certain types of event.
- **C** ○ It happens more often than some people think.

23 Susie says that a study on pre-school children having a short nap in the day

- **A** ○ had controversial results.
- **B** ○ used faulty researh methodology.
- **C** ○ failed to reach any clear conclusions.

24 In their last assignment, both students had problems with

- **A** ○ statistical analysis.
- **B** ○ making an action plan.
- **C** ○ self-assessment

Questions 25-30

Complete the flow chart below.

Write **ONE WORD ONLY** for each answer.

Assignment plan

Decide on research question:

Is there a relationship between hours of sleep and number of dreams?

↓

Decide on sample:

Twelve students from the **25** _____ department

↓

Decide on methodology:

Self-reporting

↓

Decide on procedure:

Answers on **26** _____

↓

Check ethical guidelines for working with **27** _____

Ensure that risk is assessed and **28** _____ is kept to a minimum

↓

Analyse the results

Calculate the correlation and make a **29** _____

↓

30 _____ the research

PART 4 — QUESTIONS

Part 4 Audio: https://ielts-listening-audio.engnovatemedia.com/13208-cambridge-ielts-16-academic-listening-2-audio-4.mp3

Questions 31-40

Complete the notes below.

*Write **ONE WORD ONLY** for each answer.*

Health benefits of dance

Recent findings:

- All forms of dance produce various hormones associated with feelings of happiness.
- Dancing with others has a more positive impact than dancing alone.
- An experiment on university students suggested that dance increases **31** _____.
- For those with mental illness, dance could be used as a form of **32** _____.

Benefits of dance for older people:

- accessible for people with low levels of **33** _____
- reduces the risk of heart disease
- better **34** _____ reduces the risk of accidents
- improves **35** _____ function by making it work faster
- improves participants' general well-being
- gives people more **36** _____ to take exercise
- can lessen the feeling of **37** _____, very common in older people

Benefits of Zumba:

- A study at The University of Wisconsin showed that doing Zumba for 40 minutes uses up as many **38** _____ as other quite intense forms of exercise.
- *The American Journal of Health Behavior* study showed that:

– women suffering from **39** _____ benefited from doing Zumba.

– Zumba became a **40** _____ for the participants.

Transcripts

Part 1

EMPLOYEE: Hello, Picturerep. Can I help you?

WOMAN: Oh, hi. I saw your advertisement about copying pictures to disk and I'd like a bit more information about what you do.

EMPLOYEE: Sure. What would you like to know?

WOMAN: Well, I've got a box full of old family photos that's been up in the attic for years, some of them must be 50 or 60 years old, and I'd like to get them converted to digital format.

EMPLOYEE: Sure, we can do that for you.

WOMAN: Right. And what about size? The photos are all sorts of sizes – are there any restrictions?

EMPLOYEE: Well the maximum size of photo we can do with our normal services is 30 centimetres. And each picture must be a least 4 centimetres, that's the minimum we can cope with.

WOMAN: That should be fine. And some of them are in a frame – should I take them out before I send them?

EMPLOYEE: Yes please, we can't copy them otherwise. And also the photos must all be separate, they mustn't be stuck into an album.

WOMAN: OK, that's not a problem. So can you give me an idea of how much this will cost? I've got about 360 photos I think.

EMPLOYEE: We charge £195 for 300 to 400 photos for the basic service.

WOMAN: OK. And does that include the disk?

EMPLOYEE: Yes, one disk – but you can get extra ones for £5 each.

WOMAN: That's good. So do I need to pay when I send you the photos?

EMPLOYEE: No, we won't need anything until we've actually copied the pictures. Then we'll let you know how much it is, and once we've received the payment, we'll send the parcel off to you.

WOMAN: Right.

———————————

EMPLOYEE: Is there anything else you'd like to ask about our services?

WOMAN: Yes. I've roughly sorted out the photos into groups, according to what they're about – so can you keep them in those groups when you copy them?

EMPLOYEE: Sure. We'll save each group in a different folder on the disk and if you like, you can suggest a name for each folder.

WOMAN: So I could have one called 'Grandparents' for instance?

EMPLOYEE: Exactly.

WOMAN: And do you do anything besides scan the photos? Like, can you make any improvements?

EMPLOYEE: Yes, in the standard service each photo is checked, and we can sometimes touch up the colour a bit, or improve the contrast – that can make a big difference.

WOMAN: OK. And some of the photos are actually quite fragile – they won't get damaged in the process, will they?

EMPLOYEE: No, if any look particularly fragile, we'd do them by hand. We do realise how precious these old photos can be.

WOMAN: Sure.

EMPLOYEE: And another thing is we can make changes to a photo if you want – so if you want to remove an object from a photo, or maybe alter the background, we can do that.

WOMAN: Really? I might be interested in that. I'll have a look through the photos and see. Oh, and talking of fixing photos – I've got a few that aren't properly in focus. Can you do anything to make that better?

EMPLOYEE: No, I'm afraid that's one thing we can't do.

WOMAN: OK.

EMPLOYEE: Any other information I can give you?

WOMAN: Er … oh, how long will it all take?

EMPLOYEE: We aim to get the copying done in ten days.

WOMAN: Fine. Right, well I'll get the photos packed up in a box and post them off to you.

EMPLOYEE: Right. If you've got a strong cardboard box, that's best. We've found that plastic ones sometimes break in the post.

WOMAN: OK. Right, thanks for your help. Bye.

EMPLOYEE: Bye.

Part 2

Good morning and thank you for coming here today. I'd like to bring you up to date with changes in the school that will affect your children.

As you know, the school buildings date from various times: some from the 1970s, some from the last five years, and of course Dartfield House is over a century old. It was commissioned by a businessman.

Neville Richards, and intended as his family home, but he died before it was completed. His heir chose to sell it to the local council, who turned it into offices. A later plan to convert it into a tourist information centre didn't come about, through lack of money, and instead it formed the nucleus of this school when it opened 40 years ago.

The school has grown as the local population has increased, and I can now give you some news about the lower school site, which is separated from the main site by a road. Planning permission has been granted for development of both sites. The lower school will move to new buildings that will be constructed on the main site. Developers will construct houses on the existing lower school site. Work on the new school buildings should start within the next few months.

A more imminent change concerns the catering facilities and the canteen. The canteen is always very busy throughout the lunch period – in fact it's often full to capacity, because a lot of our pupils like the food that's on offer there. But there's only one serving point, so most pupils have to wait a considerable time to be served. This is obviously unsatisfactory, as they may have hardly finished their lunch before afternoon lessons start.

So we've had a new Food Hall built, and this will come into use next week. It'll have several serving areas, and I'll give you more details about those in a minute, but one thing we ask you to do, to help in the smooth running of the Food Hall, is to discuss with your children each morning which type of food they want to eat that day, so they can go straight to the relevant serving point. There won't be any junk food – everything on offer will be healthy – and there's no change to the current system of paying for lunches by topping up your child's electronic payment card online.

You may be wondering what will happen to the old canteen. We'll still have tables and chairs in there, and pupils can eat food from the Food Hall or lunch they've brought from home. Eventually we may use part of the canteen for storage, but first we'll see how many pupils go in there at lunchtime.

———————

OK, back to the serving points in the Food Hall, which will all have side dishes, desserts and drinks on sale, as well as main courses.

One serving point we call World Adventures. This will serve a different country's cuisine each day, maybe Chinese one day and Lebanese the next. The menus will be planned for a week at a time, so pupils will know what's going to be available the whole of the week.

Street Life is also international, with food from three particular cultures. We'll ask pupils to make suggestions, so perhaps sometimes there'll be food from Thailand, Ethiopia and Mexico, and then one of them will be replaced by Jamaican food for a week or two.

The Speedy Italian serving point will cater particularly for the many pupils who don't eat meat or fish: they can be sure that all the food served there is suitable for them. There'll be plenty of variety, so they shouldn't get bored with the food.

OK, that's all on the new Food Hall. Now after-school lessons. There are very popular with pupils, particularly swimming – in fact there's a waiting list for lessons. Cycling is another favourite, and I'm delighted that dozens of pupils make use of the chance to learn to ride in off-road conditions. It means that more and more cycle to and from school every day. As you know, we have a well-equipped performance centre, and we're going to start drama classes in there, too. Pupils will be able to join in

just for fun or work up to taking part in a play – we hope to put on at least one a year. We already teach a number of pupils to use the sound and lighting systems in the centre. And a former pupil has given a magnificent grand piano to the school, so a few pupils will be able to learn at the school instead of going to the local college, as many of them do at the moment.

Part 3

SUSIE: So Luke, for our next psychology assignment we have to do something on sleep and dreams.

LUKE: Right. I've just read an article suggesting why we tend to forget most of our dreams soon after we wake up. I mean, most of my dreams aren't that interesting anyway, but what it said was that if we remembered everything, we might get mixed up about what actually happened and what we dreamed. So it's a sort of protection. I hadn't heard that idea before. I'd always assumed that it was just that we didn't have room in our memories for all that stuff.

SUSIE: Me too. What do you think about the idea that our dreams may predict the future?

LUKE: It's a belief that you get all over the world.

SUSIE: Yeah, lots of people have a story of it happening to them, but the explanation I've read is that for each dream that comes true, we have thousands that don't, but we don't notice those, we don't even remember them. We just remember the ones where something in the real world, like a view or an action, happens to trigger a dream memory.

LUKE: Right. So it's just a coincidence really. Something else I read about is what they call segmented sleeping. That's a theory that hundreds of years ago, people used to get up in the middle of the night and have a chat or something to eat, then go back to bed. So I tried it myself.

SUSIE: Why?

LUKE: Well it's meant to make you more creative. I don't know why. But I gave it up after a week. It just didn't fit in with my lifestyle.

SUSIE: But most pre-school children have a short sleep in the day don't they? There was an experiment some students did here last term to see at what age kids should stop having naps. But they didn't really find an answer. They spent a lot of time working out the most appropriate methodology, but the results didn't seem to show any obvious patterns.

LUKE: Right. Anyway, let's think about our assignment. Last time I had problems with the final stage, where we had to describe and justify how successful we thought we'd been. I struggled a bit with the action plan too.

SUSIE: I was OK with the planning, but I got marked down for the self-assessment as well. And I had big problems with the statistical stuff, that's where I really lost marks.

LUKE: Right.

———————

SUSIE: So shall we plan what we have to do for this assignment?

LUKE: OK.

SUSIE: First, we have to decide on our research question. So how about ‘Is there a relationship between hours of sleep and number of dreams?’

LUKE: OK. Then we need to think about who we’ll do they study on. About 12 people?

SUSIE: Right. And shall we use other psychology students?

LUKE: Let’s use people from a different department. What about history?

SUSIE: Yes, they might have interesting dreams! Or literature students?

LUKE: I don’t really know any.

SUSIE: OK, forget that idea. Then we have to think about our methodology. So we could use observation, but that doesn’t seem appropriate.

LUKE: No. it needs to be self-reporting I think. And we could ask them to answer questions online.

SUSIE: But in this case, paper might be better as they’ll be doing it straight after they wake up … in fact while they’re still half-asleep.

LUKE: Right. And we’ll have to check the ethical guidelines for this sort of research.

SUSIE: Mm, because our experiment involves humans, so there are special regulations.

LUKE: Yes, I had a look at those for another assignment I did. There’s a whole section on risk assessment, and another section on making sure they aren’t put under any unnecessary stress.

SUSIE: Let’s hope they don’t have any bad dreams!

LUKE: Yeah.

SUSIE: Then when we’ve collected all our data we have to analyse it and calculate the correlation between our two variables, that’s time sleeping and number of dreams and then present our results visually in a graph.

LUKE: Right. And the final thing is to think about our research and evaluate it. So that seems quite straightforward.

SUSIE: Yeah. So now let’s …

Part 4

Dancing is something that humans do when they want to have a good time. It’s a universal response to music, found in all cultures. But what’s only been discovered recently is that dancing not only makes us feel good, it’s also extremely good for our health.

Dancing, like other forms of exercise, releases hormones, such as dopamine, which make us feel relaxed and happy. And it also reduces feelings of stress or anxiety.

Dancing is also a sociable activity, which is another reason it makes us feel good.

One study compared people's enjoyment of dancing at home in front of a video with dancing in a group in a studio.

The people dancing in a group reported feeling happier, whereas those dancing alone did not.

In another experiment, university researchers at York and Sheffield took a group of students and sent each of them into a lab where music was played for five minutes. Each had to choose from three options: to sit and listen quietly to the music, to cycle on an exercise bike while they listened, or to get up and dance. All were given cognitive tasks to perform before and after. The result showed that those who chose to dance showed much more creativity when doing problem-solving tasks.

Doctor Lovatt at the University of Hertfordshire believes dance could be a very useful way to help people suffering from mental health problems. He thinks dance should be prescribed ad therapy to help people overcome issues such as depression.

———————

It's well established that dance is a good way of encouraging adolescent girls to take exercise but what about older people? Studies have shown that there are enormous benefits for people in their sixties and beyond. One of the great things about dance is that there are no barriers to participation. Anyone can have a go, even those whose standard of fitness is quite low.

Dance can be especially beneficial for older adults who can't run or do more intense workouts, or for those who don't want to. One 2015 study found that even a gently dance workout helps to promote a healthy heart. And there's plenty of evidence which suggests that dancing lowers the risk of falls, which could result in a broken hip, for example, by helping people to improve their balance.

There are some less obvious benefits of dance for older people too. One thing I hadn't realised before researching this topic was that dance isn't just a physical challenge. It also requires a lot of concentration because you need to remember different steps and routines. For older people, this kind of activity is especially important because it forces their brain to process things more quickly and to retain more information.

Current research also shows that dance promotes a general sense of well-being in older participants, which can last up to a week after a class. Participants report feeling less tired and having greater motivation to be more active and do daily activities such as gardening or walking to the shops or a park.

Ballroom or country dancing, both popular with older people, have to be done in groups. They require collaboration and often involve touching a dance partner, all of which encourages interaction on the dance floor. This helps to develop new relationships and can reduce older people's sense of isolation, which is a huge problem in many countries.

I also looked at the benefits of Zumba. Fifteen million people in 180 countries now regularly take a Zumba class, an aerobic workout based on Latin American dance moves. John Porcari, a professor of exercise and sport science at the University of Wisconsin, analysed a group of women who were Zumba regulars and found that a class lasting 40 minutes burns about 370 calories. This is similar to moderately intense exercises like step aerobics or kickboxing.

A study in the *American Journal of Health Behavior* showed that when women with obesity did Zumba three times a week for 16 weeks, they lost an average of 1.2 kilos and lowered their percentage of body

fat by 1%. More importantly, the women enjoyed the class so much that they made it a habit and continued to attend classes at least once a week – very unusual for an aerobic exercise programme.

Dance is never going to compete with high-intensity workouts when it comes to physical fitness gains, but its popularity is likely to keep on rising because it's such a fun way to keep fit.

Answer Key

#	Answer	Explanation
1	**frame**	And some of them are in a frame
2	**195**	We charge £195 for 300 to 400 photos for the basic service.
3	**payment**	Then we'll let you know how much it is, and once we've received the payment, we'll send the parcel off to you.
4	**Grandparents**	So I could have one called 'Grandparents' for instance?
5	**colour / color**	we can sometimes touch up the colour a bit
6	**hand**	No, if any look particularly fragile, we'd do them by hand.
7	**background**	so if you want to remove an object from a photo, or maybe alter the background, we can do that.
8	**focus**	I've got a few that aren't properly in focus.
9	**ten / 10 days**	We aim to get the copying done in ten days.
10	**plastic**	We've found that plastic ones sometimes break in the post.
11	**C**	His heir chose to sell it to the local council, who turned it into offices.
12	**B**	Developers will construct houses on the existing lower school site.
13	**A**	But there's only one serving point, so most pupils have to wait a considerable time to be served.
14	**A**	is to discuss with your children each morning which type of food they want to eat that day
15	**C**	We'll still have tables and chairs in there, and pupils can eat food from the Food Hall or lunch they've brought from home.
16	**D**	One serving point we call World Adventures. This will serve a different country's cuisine each day, maybe Chinese one day and Lebanese the next.
17	**A**	Street Life is also international, with food from three particular cultures. We'll ask pupils to make suggestions, so perhaps sometimes there'll be food from Thailand, Ethiopia and Mexico, and then one of them will be replaced by Jamaican food for a week or two.

#	Answer	Explanation
18	**B**	The Speedy Italian serving point will cater particularly for the many pupils who don't eat meat or fish
19	**B / C**	And a former pupil has given a magnificent grand piano to the school, so a few pupils will be able to learn at the school instead of going to the local college, as many of them do at the moment. As you know, we have a well-equipped performance centre, and we're going to start drama classes in there, too.
20	**B / C**	And a former pupil has given a magnificent grand piano to the school, so a few pupils will be able to learn at the school instead of going to the local college, as many of them do at the moment. As you know, we have a well-equipped performance centre, and we're going to start drama classes in there, too.
21	**B**	we might get mixed up about what actually happened and what we dreamed.
22	**A**	but the explanation I've read is that for each dream that comes true, we have thousands that don't
23	**C**	But they didn't really find an answer. They spent a lot of time working out the most appropriate methodology, but the results didn't seem to show any obvious patterns.
24	**C**	Last time I had problems with the final stage, where we had to describe and justify how successful we thought we'd been.
25	**history**	Let's use people from a different department. What about history?
26	**paper**	But in this case, paper might be better as they'll be doing it straight after they wake up … in fact while they're still half-asleep.
27	**humans / people**	Right. And we'll have to check the ethical guidelines for this sort of research.
28	**stress**	There's a whole section on risk assessment, and another section on making sure they aren't put under any unnecessary stress.
29	**graph**	Then when we've collected all our data we have to analyse it and calculate the correlation between our two variables, that's time sleeping and number of dreams and then present our results visually in a graph.
30	**evaluate**	And the final thing is to think about our research and evaluate it.
31	**creativity**	The result showed that those who chose to dance showed much more creativity when doing problem-solving tasks.

#	Answer	Explanation
32	**therapy**	Doctor Lovatt at the University of Hertfordshire believes dance could be a very useful way to help people suffering from mental health problems. He thinks dance should be prescribed ad therapy to help people overcome issues such as depression.
33	**fitness**	Anyone can have a go, even those whose standard of fitness is quite low.
34	**balance**	And there's plenty of evidence which suggests that dancing lowers the risk of falls, which could result in a broken hip, for example, by helping people to improve their balance.
35	**brain**	For older people, this kind of activity is especially important because it forces their brain to process things more quickly and to retain more information.
36	**motivation**	Participants report feeling less tired and having greater motivation to be more active and do daily activities such as gardening or walking to the shops or a park.
37	**isolation**	This helps to develop new relationships and can reduce older people's sense of isolation, which is a huge problem in many countries.
38	**calories**	John Porcari, a professor of exercise and sport science at the University of Wisconsin, analysed a group of women who were Zumba regulars and found that a class lasting 40 minutes burns about 370 calories. This is similar to moderately intense exercises like step aerobics or kickboxing.
39	**obesity**	A study in the American Journal of Health Behavior showed that when women with obesity did Zumba three times a week for 16 weeks
40	**habit**	they lost an average of 1.2 kilos and lowered their percentage of body fat by 1%. More importantly, the women enjoyed the class so much that they made it a habit and continued to attend classes at least once a week

Cambridge IELTS 16 Academic Listening Test 3

PART 1 — QUESTIONS

Part 1 Audio: https://ielts-listening-audio.engnovatemedia.com/13240-cambridge-ielts-16-academic-listening-3-audio-1.mp3

Questions 1-10

Complete the notes below.

Write **ONE WORD AND/OR A NUMBER** for each answer.

JUNIOR CYCLE CAMP

The course focuses on skills and safety

- Charlie would be placed in Level 5.
- First of all, children at this level are taken to practise in a **1** _____.

Instructors

- Instructors wear **2** _____ shirts.
- A **3** _____ is required and training is given.

Classes

- The size of the classes is limited.
- There are quiet times during the morning for a **4** _____ or a game.
- Classes are held even if there is **5** _____.

What to bring

- a change of clothing
- a **6** _____
- shoes (not sandals)
- Charlie's **7** _____

Day 1

- Charlie should arrive at 9.20 am on the first day.
- Before the class, his **8** _____ will be checked.

- He should then go to the **9** _____ to meet his class instructor.

Cost

- The course costs $ **10** _____ per week.

PART 2 — QUESTIONS

Part 2 Audio: https://ielts-listening-audio.engnovatemedia.com/13239-cambridge-ielts-16-academic-listening-3-audio-2.mp3

Questions 11-12

Choose **TWO** letters, **A-E**.

11 **12** According to Megan, what are the **TWO** main advantages of working in the agriculture and horticulture sectors?

- **A** ☐ the active lifestyle
- **B** ☐ the above-average salaries
- **C** ☐ the flexible working opportunities
- **D** ☐ the opportunities for overseas travel
- **E** ☐ the chance to be in a natural environment

Questions 13-14

Choose **TWO** letters, **A-E**.

13 **14** Which **TWO** of the following are likely to be disadvantages for people working outdoors?

- **A** ☐ the increasing risk of accidents
- **B** ☐ being in a very quiet location
- **C** ☐ difficult weather conditions at times
- **D** ☐ the cost of housing
- **E** ☐ the level of physical fitness required

Questions 15-20

What information does Megan give about each of the following job opportunities?

*Choose **SIX** answers from the box and write the correct letter, **A-H**, next to Questions.*

Information

A not a permanent job

B involves leading a team

C experience not essential

D intensive work but also fun

E chance to earn more through overtime

F chance for rapid promotion

G accommodation available

H local travel involved

Job opportunities

15 Fresh food commercial manager _____

16 Agronomist _____

17 Fresh produce buyer _____

18 Garden centre sales manager _____

19 Tree technician _____

20 Farm worker _____

PART 3 — QUESTIONS

Part 3 Audio: https://ielts-listening-audio.engnovatemedia.com/13238-cambridge-ielts-16-academic-listening-3-audio-3.mp3

Questions 21-22

Choose **TWO** letters, **A-E**.

21 **22** Which **TWO** points does Adam make about his experiment on artificial sweeteners?

- **A** ☐ The results were what he had predicted.
- **B** ☐ The experiment was simple to set up
- **C** ☐ A large sample of people was tested.
- **D** ☐ The subjects were unaware of what they were drinking.
- **E** ☐ The test was repeated several times for each person.

Questions 23-24

Choose **TWO** letters, **A-E**.

23 **24** Which **TWO** problems did Rosie have when measuring the fat content of nuts?

- **A** ☐ She used the wrong sort of nuts.
- **B** ☐ She used an unsuitable chemical.
- **C** ☐ She did not grind the nuts finely enough.
- **D** ☐ The information on the nut package was incorrect.
- **E** ☐ The weighing scales may have been unsuitable.

Questions 25-30

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

25 Adam suggests that restaurants could reduce obesity if their menus

- **A** ○ offered fewer options.
- **B** ○ had more low-calorie foods.
- **C** ○ were organised in a particular way.

26 The students agree that food manufacturers deliberately

- **A** ○ make calorie counts hard to understand.
- **B** ○ fail to provide accurate calorie counts.
- **C** ○ use ineffective methods to reduce calories.

27 What does Rosie say about levels of exercise in England?

- **A** ○ The amount recommended is much too low.
- **B** ○ Most people overestimate how much they do.
- **C** ○ Women now exercise more than they used to.

28 Adam refers to the location and width of stairs in a train station to illustrate

- **A** ○ practical changes that can influence people's behaviour.
- **B** ○ methods of helping people who have mobility problems.
- **C** ○ ways of preventing accidents by controlling crowd movement.

29 What do the students agree about including reference to exercise in their presentation?

- **A** ○ They should probably leave it out.
- **B** ○ They need to do more research on it.
- **C** ○ They should discuss this with their tutor.

30 What are the students going to do next for their presentation?

A ○ prepare some slides for it

B ○ find out how long they have for it

C ○ decide on its content and organisation

PART 4 — QUESTIONS

Part 4 Audio: https://ielts-listening-audio.engnovatemedia.com/13237-cambridge-ielts-16-academic-listening-3-audio-4.mp3

Questions 31-40

Complete the notes below.

Write ONE WORD ONLY for each answer.

Hand knitting

Interest in knitting

- Knitting has a long history around the world.
- We imagine someone like a **31** _____ knitting.
- A **32** _____ ago, knitting was expected to disappear.
- The number of knitting classes is now increasing.
- People are buying more **33** _____ for knitting nowadays.

Benefits of knitting

- gives support in times of **34** _____ difficulty
- requires only **35** _____ skills and little money to start
- reduces stress in a busy life

Early knitting

- The origins are not known.
- Findings show early knitted items to be **36** _____ in shape.
- The first needles were made of natural materials such as wood and **37** _____.
- Early yarns felt **38** _____ to touch.
- Wool became the most popular yarn for spinning.
- Geographical areas had their own **39** _____ of knitting.
- Everyday tasks like looking after **40** _____ were done while knitting.

Transcripts

Part 1

JAKE: Hello, Junior Cycle camp, Jake speaking.

WOMAN: Hi. I'm calling for some information about the cycle camp – I'm thinking of sending my son.

JAKE: Great. Well, it's held every weekday morning over the summer vacation and we focus on basic cycling skills and safety. We have eight levels for children from three years upwards. How old's your son?

WOMAN: Charlie? He's seven. He can ride a bike, but he needs a little more training before he's safe to go on the road.

JAKE: He'd probably be best in Level 5. They start off practising on the site here, and we aim to get them riding on the road, but first they're taken to ride in the park, away from the traffic.

WOMAN: Right. And can you tell me a bit about the instructors?

JAKE: Well, all our staff wear different coloured shirts. So, we have three supervisors, and they have red shirts. They support the instructors, and they also stand in for me if I'm not around. Then the instructors themselves are in blue shirts, and one of these is responsible for each class.

WOMAN: OK.

JAKE: In order to be accepted, all our instructors have to submit a reference from someone who's seen them work with children – like if they've worked as a babysitter, for example. Then they have to complete our training course, including how to do lesson plans, and generally care for the well-being of the kids in their class. They do a great job, I have to say.

WOMAN: Right. And tell me a bit about the classes. What size will Charlie's class be?

JAKE: We have a limit of eight children in each class, so their instructor really gets to know them well. They're out riding most of the time but they have quiet times too, where their instructor might tell them a story that's got something to do with cycling, or get them to play a game together. It's a lot of fun.

WOMAN: It must be. Now, what happens if there's rain? Do the classes still run?

JAKE: Oh yes. We don't let that put us off – we just put on our waterproofs and keep cycling.

———————

WOMAN: And is there anything special Charlie should bring along with him?

JAKE: Well, maybe some spare clothes, especially if the weather's not so good. And a snack for break time.

WOMAN: How about a drink?

JAKE: No, we'll provide that. And make sure he has shoes, not sandals.

WOMAN: Sure. And just at present Charlie has to take medication every few hours, so I'll make sure he has that.

JAKE: Absolutely. Just give us details of when he has to take it and we'll make sure he does.

WOMAN: Thanks.

JAKE: Now, there are a few things you should know about Day 1 of the camp. The classes normally start at 9.30 every morning, but on Day 1 you should aim to get Charlie here by 9.20. The finishing time will be 12.30 as usual. We need the additional time because there are a few extra things to do. The most important is that we have a very careful check to make sure that every child's helmet fits properly. If it doesn't fit, we'll try to adjust it, or we'll find him another one – but he must wear it all the time he's on the bike.

WOMAN: Of course.

JAKE: Then after that, all the instructors will be waiting to meet their classes, and they'll meet up in the tent – you can't miss it. And each instructor will take their class away and get started.

WOMAN: OK. Well that all sounds good. Now can you tell me how much the camp costs a week?

JAKE: One hundred ninety-nine dollars. We've managed to keep the price more or less the same as last year – it was one hundred ninety then. But the places are filling up quite quickly.

WOMAN: Right. OK, well I'd like to book for ...

Part 2

Hello everyone. My name's Megan Baker and I'm a recruitment consultant at AVT Recruitment specialists.

Now, our company specialises in positions that involve working in the agriculture and horticulture sectors, so that's fresh food production, garden and park maintenance and so on. And these sectors do provide some very special career opportunities. For a start, they often offer opportunities for those who don't want to be stuck with a 40-hour week, but need to juggle work with other responsibilities such as child care – and this is very important for many of our recruits. Some people like working in a rural setting, surrounded by plants and trees instead of buildings, although we can't guarantee that. But there are certainly health benefits, especially in jobs where you're not sitting all day looking at a screen – a big plus for many people. Salaries can sometimes be good too, although there's a lot of variety here. And you may have the opportunity in some types of jobs for travel overseas, although that obviously depends on the job, and not everyone is keen to do it.

Of course, working outdoors does have its challenges. It's fine in summer, but can be extremely unpleasant when it's cold and windy. You may need to be pretty fit for some jobs, though with modern technology that's not as important as it once was. And standards of health and safety are much higher now than they used to be, so there are fewer work-related accidents. But if you like a lively city environment surrounded by lots of people, these jobs are probably not for you – they're often in pretty

remote areas. And some people worry about finding a suitable place to live, but in our experience, this usually turns out fine.

———————

Now let me tell you about some of the exciting jobs that we have on our books right now.

One is for a fresh food commercial manager. Our client here is a very large fresh food producer supplying a range of top supermarkets. They operate in a very fast-paced environment with low profit margins – the staff there work hard, but they play hard as well, so if you've a sociable personality this may be for you.

We have an exciting post as an agronomist advising farmers on issues such as crop nutrition, protection against pests, and the latest legislation on farming and agricultural practices. There are good opportunities for the right person to quickly make their way up the career ladder, but a deep knowledge of the agricultural sector is expected of applicants.

A leading supermarket is looking for a fresh produce buyer who is available for a 12-month maternity cover contract. You need to have experience in administration, planning and buying in the fresh produce industry, and in return will receive a very competitive salary.

We have also received a request for a sales manager for a chain of garden centres. You will be visiting centres in the region to ensure their high levels of customer service are maintained. This post is only suitable for someone who is prepared to live in the region.

There is also a vacancy for a tree technician to carry out tree cutting, forestry and conservation work. Candidates must have a clean driving licence and have training in safety procedures. A year's experience would be preferred but the company might be prepared to consider someone who has just completed an appropriate training course.

Finally, we have a position for a farm worker. This will involve a wide range of farm duties including crop sowing and harvesting, machine maintenance and animal care. Perks of the job include the possibility of renting a small cottage on the estate, and the chance to earn a competitive salary. A driving licence and tractor driving experience are essential.

Part 3

ADAM: OK Rosie, shall we try to get some ideas together for our presentation on diet and obesity?

ROSIE: Sure.

ADAM: I can talk about the experiment I did to see if people can tell the difference between real sugar and artificial sweeteners.

ROSIE: Where you have people drinks with either sugar or artificial sweeteners and they had to say which they thought it was?

ADAM: Yeah. It took me ages to decide exactly how I'd organise it, especially how I could make sure that people didn't know which drink I was giving them. It was hard to keep track of it all, especially as I had so many people doing it – I had to make sure I kept a proper record of what each person had had.

ROSIE: So could most people tell the difference?

ADAM: Yeah – I hadn't thought they would be able to, but most people could.

ROSIE: Then there's that experiment I did measuring the fat content of nuts, to see if the nutritional information given on the packet was accurate.

ADAM: The one where you ground up the nuts and mixed them with a chemical to absorb the fat?

ROSIE: Yes. My results were a bit problematic – the fat content for that type of nut seemed much lower than it said on the package. But I reckon the package information was right. I think I should probably have ground up the nuts more than I did. It's possible that the scales for weighing the fat weren't accurate enough, too. I'd really like to try the experiment again some time.

————————

ADAM: So what can we say about helping people to lose weight? There's a lot we could say about what restaurants could do to reduce obesity. I read that the items at the start of a menu and the items at the end of a menu are much more likely to be chosen than the items in the middle. So, if you put the low-calorie items at the beginning and end of the menu, people will probably go for the food with fewer calories, without even realising what they're doing.

ROSIE: I think food *manufacturers* could do more to encourage healthy eating.

ADAM: How?

ROSIE: Well, when manufacturers put calorie counts of a food on the label, they're sometimes really confusing and I suspect they do it on purpose. Because food that's high in calories tastes better, and so they'll sell more.

ADAM: Yeah, so if you look at the amount of calories in a pizza, they'll give you the calories per quarter pizza and you think, oh that's not too bad. But who's going to eat a quarter pizza?

ROSIE: Exactly.

ADAM: I suppose another approach to this problem is to get people to exercise more.

ROSIE: Right. In England, the current guidelines are for at least 30 minutes of brisk walking, five days a week. Now when you ask them, about 40% of men and 30% of women say they do this, but when you objectively measure the amount of walking they do with motion sensors, you find that only 6% of men and 4% of women do the recommended amount of exercise.

ADAM: Mm, so you can see why obesity is growing.

ROSIE: So how can people be encouraged to take more exercise?

ADAM: Well, for example, think of the location of stairs station. if people reach the stairs before they reach the escalator when they're leaving the station, they're more likely to take the stairs. And if you increase the *width* of the stairs, you'll get more people using them at the same time. It's an unconscious process and influenced by minor modifications in their environment.

ROSIE: Right. And it might not be a big change, but if it happens every day, it all adds up.

ADAM: Yes. But actually, I'm not sure if we should be talking about exercise in our presentation.

ROSIE: Well, we've done quite a bit of reading about it.

ADAM: I know, but it's going to mean we have a very wide focus, and our tutor did say that we need to focus on causes and solutions in terms of nutrition.

ROSIE: I suppose so. And we've got plenty of information about that. OK, well that will be simpler.

ADAM: So what shall we do now? We've still got half an hour before our next lecture.

ROSIE: Let's think about what we're going to include and what will go where. Then we can decide what slides we need.

ADAM: OK, fine.

Part 4

Good morning everyone. So today we're going to look at an important creative activity and that's hand knitting. Ancient knitted garments have been found in many different countries, showing that knitting is a global activity with a long history.

When someone says the word 'knitting' we might well picture an elderly person – a grandmother perhaps – sitting by the fire knitting garments for themselves or other members of the family. It's a homely image, but one that may lead you to feel that knitting is an activity of the past – and, indeed, during the previous decade, it was one of the skills that was predicted to vanish from everyday life. For although humans have sewn and knitted their own clothing for a very long time, many of these craft-based skills went into decline when industrial machines took over – mainly because they were no longer passed down from one generation to another. However, that's all changing and interest in knitting classes in many countries is actually rising, as more and more people are seeking formal instruction in the skill. With that trend, we're also seeing an increase in the sales figures for knitting equipment.

So why do people want to be taught to knit at a time when a machine can readily do the job for them? The answer is that knitting, as a handicraft, has numerous benefits for those doing it. Let's consider what some of these might be. While many people knitted garments in the past because they couldn't afford to buy clothes, it's still true today that knitting can be helpful if you're experiencing economic hardship. If you have several children who all need warm winter clothes, knitting may save you a lot of money. And the results of knitting your own clothes can be very rewarding, even though the skills you need to get going are really quite basic and the financial outlay is minimal.

But the more significant benefits in today's world are to do with well-being. In a world where it's estimated that we spend up to nine hours a day online, doing something with our hands that is craft-based makes us feel good. It releases us from the stress of a technological, fast-paced life.

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Now, let's look back a bit to early knitting activities. In fact, no one really knows when knitting first began, but archaeological remains have disclosed plenty of information for us to think about.

One of the interesting things about knitting is that the earliest pieces of clothing that have been found suggest that most of the items produced were round rather than flat. Discoveries from the 3rd and 4th centuries in Egypt show that things like socks and gloves, that were needed to keep hands and feet warm, were knitted in one piece using four or five needles. That's very different from most knitting patterns today, which only require two. What's more, the very first needles people used were hand carved out of wood and other natural materials, like bone, whereas today's needles are largely made of steel or plastic and make that characteristic clicking sound when someone's using them. Ancient people knitted using yarns made from linen, hemp, cotton and wool, and these were often very rough on the skin. The spinning wheel, which allowed people to make finer yarns and produce much greater quantities of them, led to the dominance of wool in the knitting industry – often favoured for its warmth.

Another interesting fact about knitting is that because it was practised in so many parts of the world for so many purposes, regional differences in style developed. This visual identity has allowed researchers to match bits of knitted clothing that have been unearthed over time to the region from which the wearer came or the job that he or she did.

As I've mentioned, knitting offered people from poor communities a way of making extra money while doing other tasks. For many centuries, it seems, men, women and children took every opportunity to knit, for example, while watching over sheep, walking to market or riding in boats. So, let's move on to take a …

Answer Key

#	Answer	Explanation
1	**park**	They start off practising on the site here, and we aim to get them riding on the road, but first they're taken to ride in the park, away from the traffic.
2	**blue**	Then the instructors themselves are in blue shirts, and one of these is responsible for each class.
3	**reference**	In order to be accepted, all our instructors have to submit a reference from someone who's seen them work with children
4	**story**	They're out riding most of the time but they have quiet times too, where their instructor might tell them a story that's got something to do with cycling, or get them to play a game together.
5	**rain**	Now, what happens if there's rain? Do the classes still run?
6	**snack**	And a snack for break time.
7	**medication**	And just at present Charlie has to take medication every few hours, so I'll make sure he has that.
8	**helmet**	The most important is that we have a very careful check to make sure that every child's helmet fits properly.
9	**tent**	Then after that, all the instructors will be waiting to meet their classes, and they'll meet up in the tent
10	**199**	One hundred ninety-nine dollars
11	**A / C**	For a start, they often offer opportunities for those who don't want to be stuck with a 40-hour week, but need to juggle work with other responsibilities such as child care But there are certainly health benefits, especially in jobs where you're not sitting all day looking at a screen
12	**A / C**	For a start, they often offer opportunities for those who don't want to be stuck with a 40-hour week, but need to juggle work with other responsibilities such as child care But there are certainly health benefits, especially in jobs where you're not sitting all day looking at a screen
13	**B / C**	but can be extremely unpleasant when it's cold and windy But if you like a lively city environment surrounded by lots of people, these jobs are probably not for you – they're often in pretty remote areas.

#	Answer	Explanation
14	**B / C**	but can be extremely unpleasant when it's cold and windy But if you like a lively city environment surrounded by lots of people, these jobs are probably not for you – they're often in pretty remote areas.
15	**D**	They operate in a very fast-paced environment with low profit margins – the staff there work hard, but they play hard as well, so if you've a sociable personality this may be for you.
16	**F**	There are good opportunities for the right person to quickly make their way up the career ladder
17	**A**	A leading supermarket is looking for a fresh produce buyer who is available for a 12-month maternity cover contract.
18	**H**	We have also received a request for a sales manager for a chain of garden centres. You will be visiting centres in the region to ensure their high levels of customer service are maintained.
19	**C**	A year's experience would be preferred but the company might be prepared to consider someone who has just completed an appropriate training course.
20	**G**	Perks of the job include the possibility of renting a small cottage on the estate, and the chance to earn a competitive salary. A driving licence and tractor driving experience are essential.
21	**C / D**	It took me ages to decide exactly how I'd organise it, especially how I could make sure that people didn't know which drink I was giving them. It was hard to keep track of it all, especially as I had so many people doing it
22	**C / D**	It took me ages to decide exactly how I'd organise it, especially how I could make sure that people didn't know which drink I was giving them. It was hard to keep track of it all, especially as I had so many people doing it
23	**C / E**	I think I should probably have ground up the nuts more than I did. It's possible that the scales for weighing the fat weren't accurate enough, too.
24	**C / E**	I think I should probably have ground up the nuts more than I did. It's possible that the scales for weighing the fat weren't accurate enough, too.
25	**C**	So, if you put the low-calorie items at the beginning and end of the menu, people will probably go for the food with fewer calories, without even realising what they're doing.

#	Answer	Explanation
26	**A**	Well, when manufacturers put calorie counts of a food on the label, they're sometimes really confusing and I suspect they do it on purpose.
27	**B**	Now when you ask them, about 40% of men and 30% of women say they do this, but when you objectively measure the amount of walking they do with motion sensors, you find that only 6% of men and 4% of women do the recommended amount of exercise.
28	**A**	if people reach the stairs before they reach the escalator when they're leaving the station, they're more likely to take the stairs. And if you increase the width of the stairs, you'll get more people using them at the same time. It's an unconscious process and influenced by minor modifications in their environment.
29	**A**	But actually, I'm not sure if we should be talking about exercise in our presentation.
30	**C**	Let's think about what we're going to include and what will go where.
31	**grandmother**	When someone says the word 'knitting' we might well picture an elderly person – a grandmother perhaps – sitting by the fire knitting garments for themselves or other members of the family.
32	**decade**	during the previous decade, it was one of the skills that was predicted to vanish from everyday life.
33	**equipment**	With that trend, we're also seeing an increase in the sales figures for knitting equipment.
34	**economic**	it's still true today that knitting can be helpful if you're experiencing economic hardship.
35	**basic**	And the results of knitting your own clothes can be very rewarding, even though the skills you need to get going are really quite basic and the financial outlay is minimal.
36	**round**	One of the interesting things about knitting is that the earliest pieces of clothing that have been found suggest that most of the items produced were round rather than flat.
37	**bone**	What's more, the very first needles people used were hand carved out of wood and other natural materials, like bone
38	**rough**	these were often very rough on the skin.
39	**style**	Another interesting fact about knitting is that because it was practised in so many parts of the world for so many purposes, regional differences in style developed.
40	**sheep**	while watching over sheep, walking to market or riding in boats.

Cambridge IELTS 16 Academic Listening Test 4

PART 1 — QUESTIONS

Part 1 Audio: https://ielts-listening-audio.engnovatemedia.com/13320-cambridge-ielts-16-academic-listening-4-audio-1.mp3

Questions 1-10

Complete the notes below.

Write **ONE WORD AND/OR A NUMBER** for each answer.

Holiday rental

Owner's names: Jack Fitzgerald and Shirley Fitzgerald

Granary Cottage

- available for week beginning **1** _____ May
- cost for the week: £ **2** _____

3 _____ **Cottage**

- cost for the week: £480
- building was originally a **4** _____
- walk through doors from living room into a **5** _____
- several **6** _____ spaces at the front
- bathroom has a shower
- central heating and stove that burns **7** _____
- views of old **8** _____ from living room
- view of hilltop **9** _____ from the bedroom

Payment

- deposit: £144
- deadline for final payment: end of **10** _____

PART 2 — QUESTIONS

Part 2 Audio: https://ielts-listening-audio.engnovatemedia.com/13319-cambridge-ielts-16-academic-listening-4-audio-2.mp3

Questions 11-14

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

Local council report on traffic and highways

11 A survey found people's main concern about traffic in the area was

- **A** ○ cuts to public transport.
- **B** ○ poor maintenance of roads.
- **C** ○ changes in the type of traffic.

12 Which change will shortly be made to the cycle path next to the river?

- **A** ○ It will be widened.
- **B** ○ It will be extended.
- **C** ○ It will be resurfaced.

13 Plans for a pedestrian crossing have been postponed because

- **A** ○ the Post Office has moved.
- **B** ○ the proposed location is unsafe.
- **C** ○ funding is not available at present.

14 On Station Road, notices have been erected

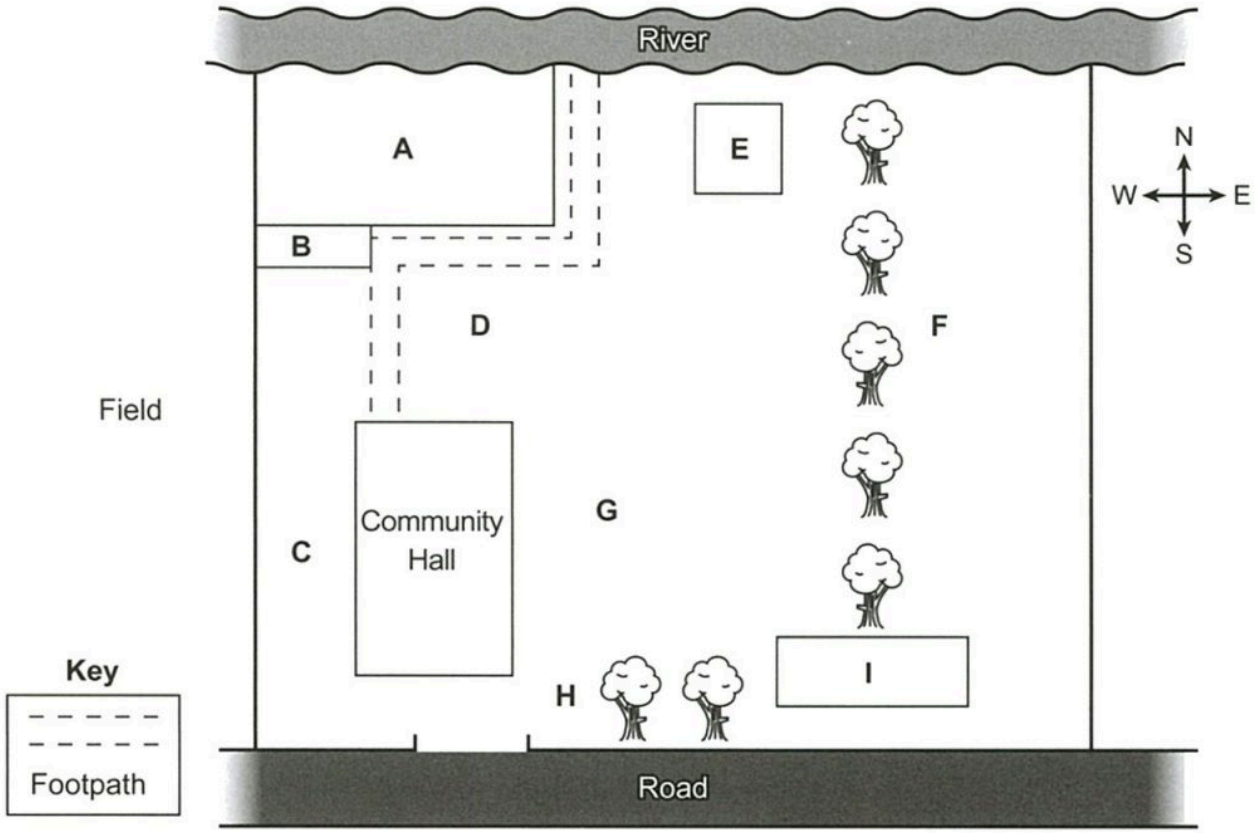
- **A** ○ telling cyclists not to leave their bikes outside the station ticket office.
- **B** ○ asking motorists to switch off engines when waiting at the level crossing.
- **C** ○ warning pedestrians to leave enough time when crossing the railway line.

Questions 15-20

Label the map below.

*Write the correct letter, **A-I**, next to Questions.*

Recreation ground after proposed changes



	A	B	C	D	E	F	G	H	I
15 New car park	○	○	○	○	○	○	○	○	○
16 New cricket pitch	○	○	○	○	○	○	○	○	○
17 Children's playground	○	○	○	○	○	○	○	○	○
18 Skateboard ramp	○	○	○	○	○	○	○	○	○
19 Pavilion	○	○	○	○	○	○	○	○	○
20 Notice board	○	○	○	○	○	○	○	○	○

PART 3 — QUESTIONS

Part 3 Audio: https://ielts-listening-audio.engnovatemedia.com/13318-cambridge-ielts-16-academic-listening-4-audio-3.mp3

Questions 21-22

Choose **TWO** letters, **A-E**.

21 **22** Which **TWO** benefits of city bike-sharing schemes do the students agree are the most important?

- **A** ☐ reducing noise pollution
- **B** ☐ reducing traffic congestion
- **C** ☐ improving air quality
- **D** ☐ encouraging health and fitness
- **E** ☐ making cycling affordable

Questions 23-24

Choose **TWO** letters, **A-E**.

23 **24** Which **TWO** things do the students think are necessary for successful bike-sharing schemes?

- **A** ☐ Bikes should have a GPS system.
- **B** ☐ The app should be easy to use.
- **C** ☐ Public awareness should be raised.
- **D** ☐ Only one scheme should be available.
- **E** ☐ There should be a large network of cycle lanes.

Questions 25-30

What is the speakers' opinion of the bike-sharing schemes in each of the following cities?

*Choose **SIX** answers from the box and write the correct letter, **A-G**, next to Questions.*

Opinion of bike-sharing scheme

A They agree it has been disappointing.

B They think it should be cheaper.

C They are surprised it has been so successful.

D They agree that more investment is required.

E They think the system has been well designed.

F They disagree about the reasons for its success.

G They think it has expanded too quickly.

Cities

25 Amsterdam _____

26 Dublin _____

27 London _____

28 Buenos Aires _____

29 New York _____

30 Sydney _____

PART 4 — QUESTIONS

Part 4 Audio: https://ielts-listening-audio.engnovatemedia.com/13316-cambridge-ielts-16-academic-listening-4-audio-4.mp3

Questions 31-40

Complete the notes below.

Write **ONE WORD ONLY** for each answer.

THE EXTINCTION OF THE DODO BIRD

The dodo was a large flightless bird which used to inhabit the island of Mauritius.

History

- 1507 – Portuguese ships transporting **31** _____ stopped at the island to collect food and water.
- 1638 – The Dutch established a **32** _____ on the island.
- They killed the dodo birds for their meat.
- The last one was killed in 1681.

Description

- The only record we have is written descriptions and pictures (possibly unreliable).
- A Dutch painting suggests the dodo was very **33** _____.
- The only remaining soft tissue is a dried **34** _____.
- Recent studies of a dodo skeleton suggest the birds were capable of rapid **35** _____.
- It's thought they were able to use their small wings to maintain **36** _____.
- Their **37** _____ was of average size.
- Their sense of **38** _____ enabled them to find food.

Reasons for extinction

- Hunting was probably not the main cause.
- Sailors brought dogs and monkeys.
- **39** _____ also escaped onto the island and ate the birds' eggs.
- The arrival of farming meant the **40** _____ was destroyed.

Transcripts

Part 1

SHIRLEY: Hello?

TOM: Oh hello. I was hoping to speak to Jack Fitzgerald about renting a cottage.

SHIRLEY: I'm his wife, Shirley, and we own the cottages together, so I'm sure I can help you.

TOM: Great. My name's Tom. Some friends of ours rented Granary Cottage from you last year, and they thought it was great. So my wife and I are hoping to come in May for a week.

SHIRLEY: What date did you have in mind?

TOM: The week beginning the 14th, if possible.

SHIRLEY: I'll just check ... I'm sorry, Tom, it's already booked that week. It's free the week beginning the 28th, though, for seven nights. In fact, that's the only time you could have it in May.

TOM: Oh. Well, we could manage that, I think. We'd just need to change a couple of things. How much would it cost?

SHIRLEY: That's the beginning of high season, so it'd be £550 for the week.

TOM: Ah. That's a bit more than we wanted to pay, I'm afraid. We've budgeted up to £500 for accommodation.

SHIRLEY: Well, we've just finished converting another building into a cottage, which we're calling Chervil Cottage.

TOM: Sorry? What was that again?

SHIRLEY: Chervil. C-H-E-R-V for Victor I-L.

TOM: Oh, that's a herb, isn't it?

SHIRLEY: That's right. It grows fairly wild around here. You could have that for the week you want for £480.

TOM: OK. So could you tell me something about it, please?

SHIRLEY: Of course. The building was built as a garage. It's a little smaller than Granary Cottage.

TOM: So that must sleep two people, as well?

SHIRLEY: That's right. There's a double bedroom.

TOM: Does it have a garden?

SHIRLEY: Yes, you get to it from the living room through French doors, and we provide two deckchairs. We hope to build a patio in the near future, but I wouldn't like to guarantee it'll be finished by May.

TOM: OK.

SHIRLEY: The front door opens onto the old farmyard, and parking isn't a problem – there's plenty of room at the front for that. There are some trees and potted plants there.

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TOM: What about facilities in the cottage? It has standard things like a cooker and fridge, I presume.

SHIRLEY: In the kitchen area there's a fridge-freezer and we've just put in an electric cooker.

TOM: Is there a washing machine?

SHIRLEY: Yes. There's also a TV in the living room, which plays DVDs too. The bathroom is too small for a bath, so there's a shower instead. I think a lot of people prefer that nowadays, anyway.

TOM: It's more environmentally friendly, isn't it? Unless you spend half the day in it!

SHIRLEY: Exactly.

TOM: What about heating? It sometimes gets quite cool at that time of year.

SHIRLEY: There's central heating, and if you want to light a fire, there's a stove. We can provide all the wood you need for it. It smells so much nicer than coal, and it makes the room very cosy – we've got one in our own house.

TOM: That sounds very pleasant. Perhaps we should come in the winter, to make the most of it!

SHIRLEY: Yes, we find we don't want to go out when we've got the fire burning. There are some attractive views from the cottage, which I haven't mentioned. There's a famous stone bridge – it's one of the oldest in the region, and you can see it from the living room. It isn't far away. The bedroom window looks in the opposite direction, and has a lovely view of the hills and the monument at the top.

TOM: Well, that all sounds perfect. I'd like to book it, please. Would you want a deposit?

SHIRLEY: Yes, we ask for thirty percent to secure your booking, so that'll be, um, £144.

TOM: And when would you like the rest of the money?

SHIRLEY: You're coming in May, so the last day of March, please.

TOM: Fine.

SHIRLEY: Excellent. Could I just take your details …

Part 2

CHAIRPERSON:

Right. Next on the agenda we have traffic and highways. Councillor Thornton.

COUNCILLOR THORNTON:

Thank you. Well, we now have the results of the survey carried out last month about traffic and road transport in the town. People were generally satisfied with the state of the roads. There were one or two complaints about potholes which will be addressed, but a significant number of people complained about the increasing number of heavy vehicles using our local roads to avoid traffic elsewhere. We'd expected more complaints by commuters about the reduction in the train service, but it doesn't seem to have affected people too much. The cycle path that runs alongside the river is very well used by both cyclists and pedestrians since the surface was improved last year, but overtaking can be a problem so we're going to add a bit on the side to make it wider. At some stage, we'd like to extend the path so that it goes all the way through the town, but that won't be happening in the immediate future.

The plans to have a pedestrian crossing next to the Post Office have unfortunately had to be put on hold for the time being. We'd budgeted for this to be done this financial year, but then there were rumours that the Post Office was going to move, which would have meant there wasn't really a need for a crossing. Now they've confirmed that they're staying where they are, but the Highways Department have told us that it would be dangerous to have a pedestrian crossing where we'd originally planned it as there's a bend in the road there. So that'll need some more thought.

On Station Road near the station and level crossing, drivers can face quite long waits if the level crossing's closed, and we've now got signs up requesting them not to leave their engines running at that time. This means pedestrians waiting on the pavement to cross the railway line don't have to breathe in car fumes. We've had some problems with cyclists leaving their bikes chained to the railings outside the ticket office, but the station has agreed to provide bike racks there.

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CHAIRPERSON:

So next on the agenda is 'Proposals for improvements to the recreation ground'. Councillor Thornton again.

COUNCILLOR THORNTON:

Well, since we managed to extend the recreation ground, we've spent some time talking to local people about how it could be made a more attractive and useful space. If you have a look at the map up on the screen, you can see the river up in the north, and the Community Hall near the entrance from the road. At present, cars can park between the Community Hall and that line of trees to the east, but this is quite dangerous for pedestrians so we're suggesting a new car park on the opposite side of the Community Hall, right next to it. We also have a new location for the cricket pitch. As we've now purchased additional space to the east of the recreation ground, beyond the trees, we plan to move it away from its current location, which is rather near the road, into this new area beyond the line of trees. This means there's less danger of stray balls hitting cars or pedestrians.

We've got plans for a children's playground which will be accessible by a footpath from the Community Hall and will be alongside the river. We'd originally thought of having it close to the road, but we think this will be a more attractive location.

The skateboard ramp is very popular with both younger and older children – we had considered moving this up towards the river, but in the end we decided to have it in the southeast corner near the road. The

pavilion is very well used at present by both football players and cricketers. It will stay where it is now – to the left of the line of trees and near to the river – handy for both the football and cricket pitches. And finally, we'll be getting a new notice board for local information, and that will be directly on people's right as they go from the road into the recreation ground.

Part 3

JAKE: Now that we've done all the research into bike-sharing schemes in cities around the world, we need to think about how we're going to organise our report.

AMY: Right. I think we should start by talking about the benefits. I mean it's great that so many cities have introduced these schemes where anyone can pick up a bike from dozens of different locations and hire it for a few hours. It makes riding a bike very convenient for people.

JAKE: Yes, but the costs can add up and that puts people on low incomes off in some places.

AMY: I suppose so, but if it means more people in general are cycling rather than driving, then because they're increasing the amount of physical activity they do, it's good for their health

JAKE: OK. But isn't that of less importance? I mean, doesn't the impact of reduced emissions on air pollution have a more significant effect on people's health?

AMY: Certainly, in some cities bike-sharing had made a big contribution to that. And also helped to cut the number of cars on the road significantly.

JAKE: Which is the main point.

AMY: Exactly. But I'd say it's had less of an impact on noise pollution because there are still loads of buses and lorries around.

JAKE: Right.

AMY: Shall we quickly discuss the recommendations we're going to make?

JAKE: In order to ensure bike-sharing schemes are successful?

AMY: Yes.

JAKE: OK. Well, while I think it's nice to have really state-of-the art bikes with things like GPS, I wouldn't say they're absolutely necessary.

AMY: But some technical things are really important – like a fully functional app – so people can make payments and book bikes easily. Places which haven't invested in that have really struggled.

JAKE: Good point … Some people say there shouldn't be competing companies offering separate bike-sharing schemes, but in some really big cities, competition's beneficial and anyway one company might not be able to manage the whole thing.

AMY: Right. Deciding how much to invest is a big question. Cities which have opened loads of new bike lanes at the same time as introducing bike-sharing schemes have generally been more successful – but

there are examples of successful schemes where this hasn't happened … What does matter though – is having a big publicity campaign.

JAKE: Definitely. If people don't know how to use the scheme or don't understand its benefits, they won't use it. People need a lot of persuasion to stop using their cars.

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AMY: Shall we look at some examples now? And say what we think is good or bad about them.

JAKE: I suppose we should start with Amsterdam as this was one of the first cities to have a bike-sharing scheme.

AMY: Yes. There was already a strong culture of cycling here. In a way it's strange that there was such a demand for bike-sharing because you'd have thought most people would have used their own bikes.

JAKE: And yet it's one of the best-used schemes … Dublin's an interesting example of a success story.

AMY: It must be because the public transport system's quite limited.

JAKE: Not really – there's no underground, but there are trams and a good bus network. I'd say price has a lot to do with it. It's one of the cheapest schemes in Europe to join.

AMY: But the buses are really slow – anyway the weather certainly can't be a factor!

JAKE: No – definitely not. The London scheme's been quite successful

AMY: Yes – it's been a really good thing for the city. The bikes are popular and the whole system is well maintained but it isn't expanding quickly enough.

JAKE: Basically, not enough's been spent on increasing the number of cycle lanes. Hopefully that'll change.

AMY: Yes. Now what about outside Europe?

JAKE: Well bike-sharing schemes have taken off in places like Buenos Aires.

AMY: Mmm. They built a huge network of cycle lanes to support the introduction of the scheme there, didn't they? It attracted huge numbers of cyclists where previously there were hardly any.

JAKE: An example of good planning.

AMY: Absolutely. New York is a good example of how not to introduce a scheme. When they launched it, it was more than ten times the price of most other schemes.

JAKE: More than it costs to take a taxi, Crazy. I think the organisers lacked vision and ambition there.

AMY: I think so too. Sydney would be a good example to use. I would have expected it to have grown pretty quickly here.

JAKE: Yes. I can't quite work out why it hasn't been an instant success like some of the others. It's a shame really.

AMY: I know. OK so now we've thought about ...

Part 4

One of the most famous cases of extinction is that of a bird known as the dodo. In fact there's even a saying in English, 'as dead as the dodo', used to refer to something which no longer exists. But for many centuries the dodo was alive and well, although it could only be found in one place, the island of Mauritius in the Indian Ocean. It was a very large bird, about one metre tall, and over the centuries it had lost the ability to fly, but it survived happily under the trees that covered the island.

Then in the year 1507 the first Portuguese ships stopped at the island. The sailors were carrying spices back to Europe, and found the island a convenient stopping place where they could stock up with food and water for the rest of the voyage, but they didn't settle on Mauritius. However, in 1683 the Dutch arrived and set up a colony there. These first human inhabitants of the island found the dodo birds a convenient source of meat, although not everyone liked the taste.

It's hard to get an accurate description of what the dodo actually looked like. We do have some written records from sailors, and a few pictures, but we don't know how reliable these are. The best-known picture is a Dutch painting in which the bird appears to be extremely fat, but this may not be accurate – an Indian painting done at the same time shows a much thinner bird.

Although attempts were made to preserve the bodies of some of the birds, no complete specimen survives. In the early 17th century four dried parts of a bird were known to exist – of these, three have disappeared, so only one example of soft tissue from the dodo survives, a dodo head. Bones have also found, but there's only one complete skeleton in existence.

This single dodo skeleton has recently been the subject of scientific research which suggests that many of the earlier beliefs about dodos may have been incorrect. For example, early accounts of the birds mention how slow and clumsy it was, but scientists now believe the bird's strong knee joints would have made it capable of movement which was not slow, but actually quite fast. In fact, one 17th century sailor wrote that he found the birds hard to catch. It's true that the dodo's small wings wouldn't have allowed it to leave the ground, but the scientists suggest that these were probably employed for balance while going over uneven ground. Another group of scientists carried out analysis of the dodo's skull. They found that the reports of the lack of intelligence of the dodo were not borne out by their research, which suggested the bird's brain was not small, but average in size. In fact, in relation to its body size, it was similar to that of the pigeon, which is known to be a highly intelligent bird. The researchers also found that the structure of the bird's skull suggested that one sense which was particularly well-developed was that of smell. So the dodo may also have been particularly good at locating ripe fruit and other food in the island's thick vegetation.

———————————

So it looks as if the dodo was better able to survive and defend itself than was originally believed. Yet less than 200 years after Europeans first arrived on the island, they had become extinct. So what was the reason for this? For a long time, it was believed that the dodos were hunted to extinction, but scientists now believe the situation was more complicated than this. Another factor may have been the new species brought to the island by the sailors. These included dogs, which would have been a threat to the dodos, and also monkeys, which ate the fruit that was the main part of the dodos' diet. These were brought to the island deliberately, but the ships also brought another type of creature – rats, which

came to land from the ships and rapidly overran the island. These upset the ecology of the island, not just the dodos but other species too. However, they were a particular danger to the dodos because they consumed their eggs, and since each dodo only laid one at a time, this probably had a devastating effect on populations.

However, we now think that probably the main cause of the birds' extinction was not the introduction of non-native species, but the introduction of agriculture. This meant that the forest that has once covered all the island, and that had provided a perfect home for the dodo, was cut down so that crops such as sugar could be grown. So although the dodo had survived for thousands of years, suddenly it was gone.

Answer Key

#	Answer	Explanation
1	**28th**	It’s free the week beginning the 28th, though, for seven nights. In fact, that’s the only time you could have it in May.
2	**550**	That’s the beginning of high season, so it’d be £550 for the week.
3	**Chervil**	Well, we’ve just finished converting another building into a cottage, which we’re calling Chervil Cottage.
4	**garage**	The building was built as a garage.
5	**garden**	Does it have a garden?
6	**parking**	The front door opens onto the old farmyard, and parking isn’t a problem – there’s plenty of room at the front for that.
7	**wood**	There’s central heating, and if you want to light a fire, there’s a stove. We can provide all the wood you need for it.
8	**bridge**	There’s a famous stone bridge – it’s one of the oldest in the region, and you can see it from the living room. It isn’t far away.
9	**monument**	The bedroom window looks in the opposite direction, and has a lovely view of the hills and the monument at the top.
10	**March**	You’re coming in May, so the last day of March, please.
11	**C**	but a significant number of people complained about the increasing number of heavy vehicles using our local roads to avoid traffic elsewhere.
12	**A**	but overtaking can be a problem so we’re going to add a bit on the side to make it wider
13	**B**	but the Highways Department have told us that it would be dangerous to have a pedestrian crossing where we’d originally planned it as there’s a bend in the road there.
14	**B**	On Station Road near the station and level crossing, drivers can face quite long waits if the level crossing’s closed, and we’ve now got signs up requesting them not to leave their engines running at that time.
15	**C**	this is quite dangerous for pedestrians so we’re suggesting a new car park on the opposite side of the Community Hall, right next to it.

#	Answer	Explanation
16	**F**	As we've now purchased additional space to the east of the recreation ground, beyond the trees
17	**A**	We've got plans for a children's playground which will be accessible by a footpath from the Community Hall and will be alongside the river
18	**I**	The skateboard ramp is very popular with both younger and older children – we had considered moving this up towards the river, but in the end we decided to have it in the southeast corner near the road.
19	**E**	The pavilion is very well used at present by both football players and cricketers. It will stay where it is now – to the left of the line of trees and near to the river
20	**H**	And finally, we'll be getting a new notice board for local information, and that will be directly on people's right as they go from the road into the recreation ground.
21	**B / C**	I mean, doesn't the impact of reduced emissions on air pollution have a more significant effect on people's health? Certainly, in some cities bike-sharing had made a big contribution to that. And also helped to cut the number of cars on the road significantly.
22	**B / C**	I mean, doesn't the impact of reduced emissions on air pollution have a more significant effect on people's health? Certainly, in some cities bike-sharing had made a big contribution to that. And also helped to cut the number of cars on the road significantly.
23	**B / C**	But some technical things are really important – like a fully functional app – so people can make payments and book bikes easily What does matter though – is having a big publicity campaign.
24	**B / C**	But some technical things are really important – like a fully functional app – so people can make payments and book bikes easily What does matter though – is having a big publicity campaign.
25	**C**	In a way it's strange that there was such a demand for bike-sharing because you'd have thought most people would have used their own bikes.
26	**F**	It must be because the public transport system's quite limited.
27	**D**	Basically, not enough's been spent on increasing the number of cycle lanes.
28	**E**	An example of good planning.

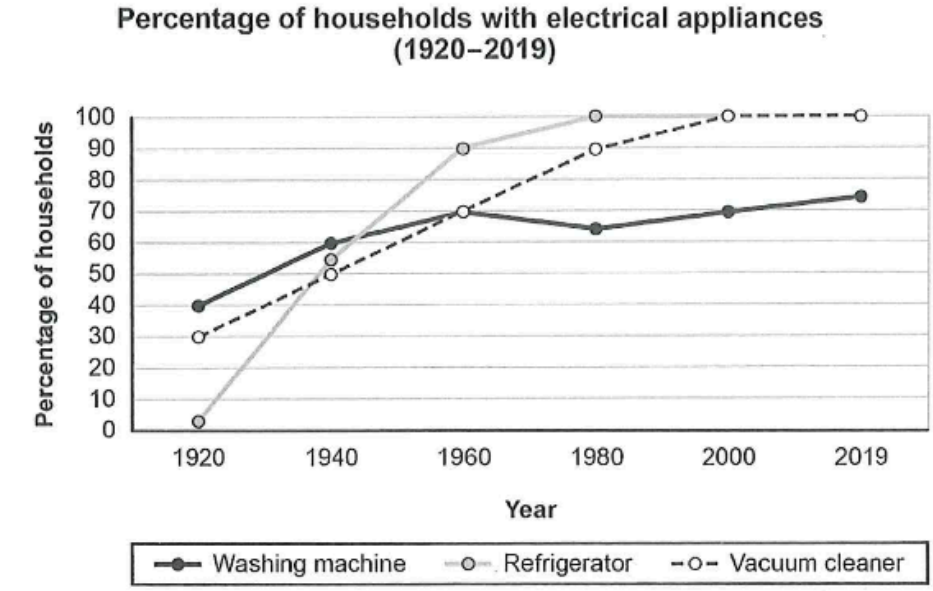
#	Answer	Explanation
29	**B**	More than it costs to take a taxi, Crazy.
30	**A**	I would have expected it to have grown pretty quickly here.
31	**spice / spices**	The sailors were carrying spices back to Europe
32	**colony / settlement**	However, in 1683 the Dutch arrived and set up a colony there.
33	**fat**	The best-known picture is a Dutch painting in which the bird appears to be extremely fat, but this may not be accurate – an Indian painting done at the same time shows a much thinner bird.
34	**head**	of these, three have disappeared, so only one example of soft tissue from the dodo survives, a dodo head.
35	**movement**	but scientists now believe the bird's strong knee joints would have made it capable of movement which was not slow, but actually quite fast.
36	**balance / balancing**	but the scientists suggest that these were probably employed for balance while going over uneven ground.
37	**brain**	which suggested the bird's brain was not small
38	**smell**	The researchers also found that the structure of the bird's skull suggested that one sense which was particularly well-developed was that of smell.
39	**rats**	These were brought to the island deliberately, but the ships also brought another type of creature – rats, which came to land from the ships and rapidly overran the island.
40	**forest**	This meant that the forest that has once covered all the island, and that had provided a perfect home for the dodo, was cut down so that crops such as sugar could be grown.

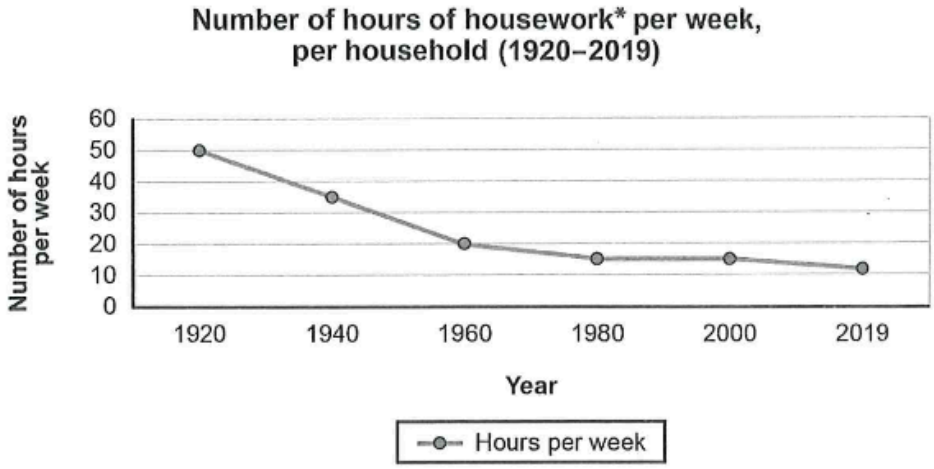
Cambridge IELTS 16 Academic Writing Test 1

Part 1

The charts below show the changes in ownership of electrical appliances and amount of time spent doing housework and households in one country between 1920 and 2019.

Summarize the information by selecting and reporting the main features, and make comparisons where relevant.





*housework = washing clothes, preparing meals, cleaning

Part 2

In some countries, more and more people are becoming interested in finding out about the history of the house or building they live in.

What are the reasons for this?

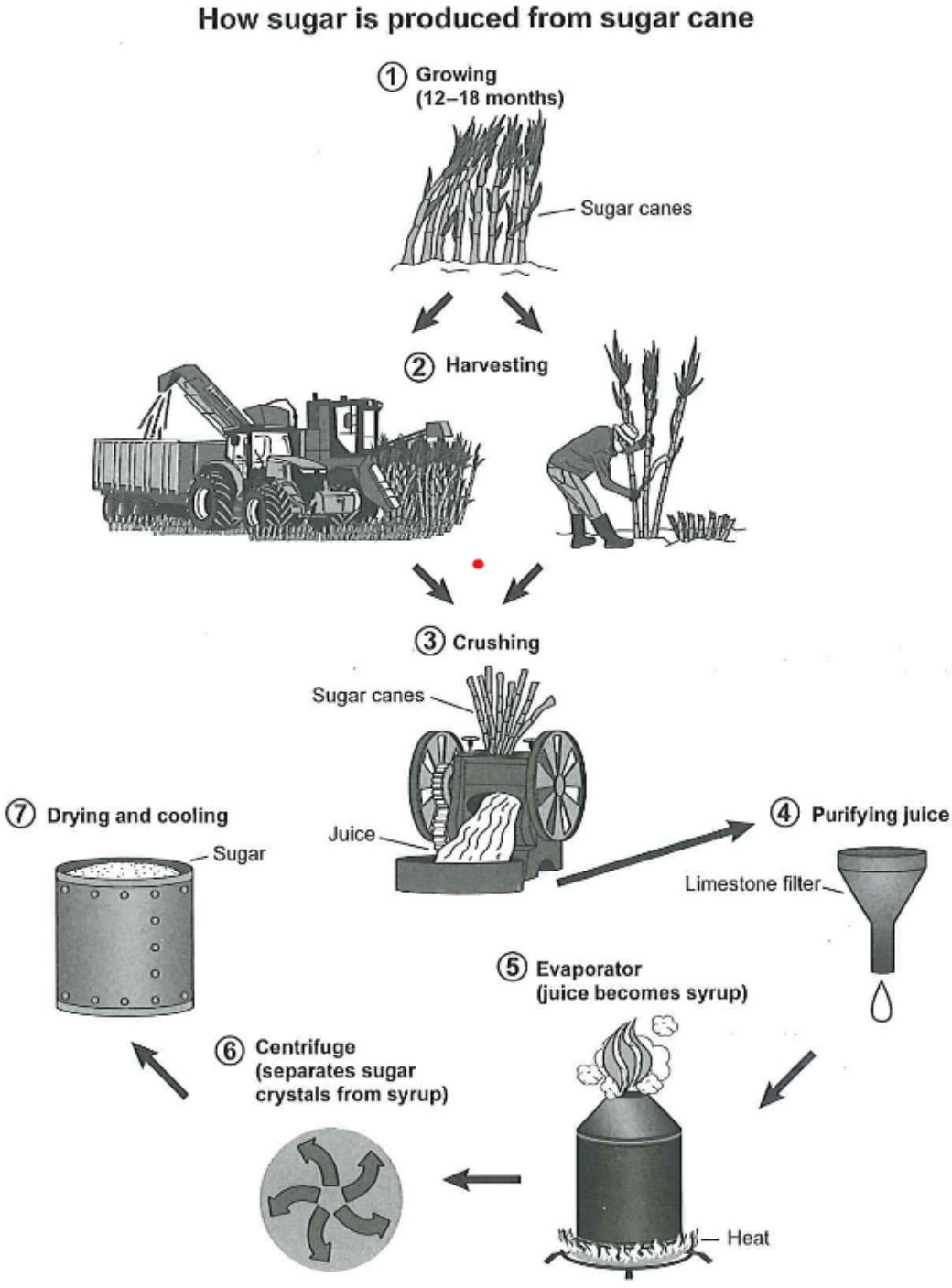
How can people research this?

Cambridge IELTS 16 Academic Writing Test 2

Part 1

The diagram below shows the manufacturing process for making sugar from sugar cane.

Summarize the information by selecting and reporting the main features, and make comparisons where relevant.



Part 2

In their advertising, businesses nowadays usually emphasise that their products are new in some way.

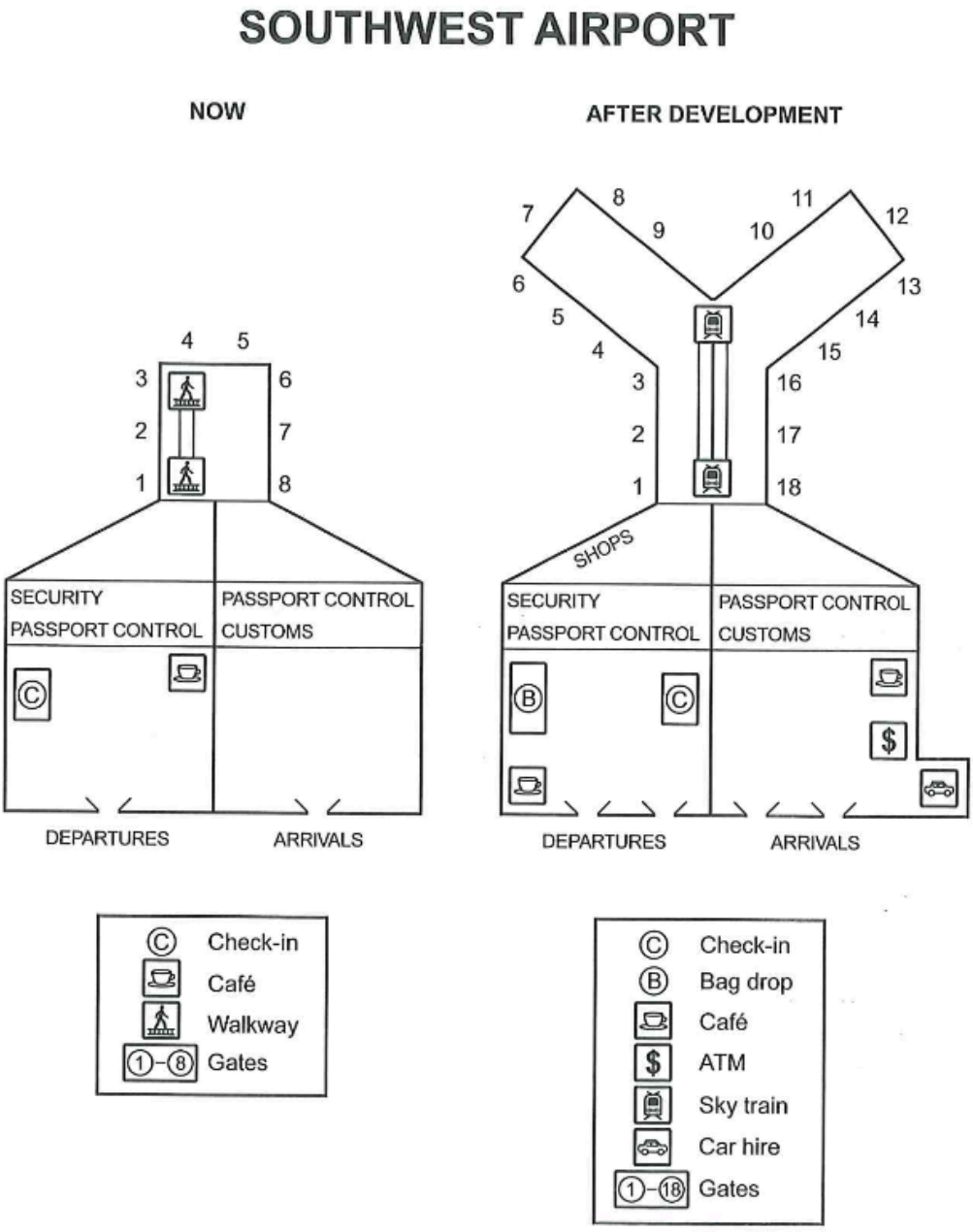
Why is this? Do you think it is a positive or negative development?

Cambridge IELTS 16 Academic Writing Test 3

Part 1

The plans below show the site of an airport now and how it will look after redevelopment next year.

Summarize the information by selecting and reporting the main features, and make comparisons where relevant.



Part 2

Many manufactured food and drink products contain high levels of sugar, which causes many health problems. Sugary products should be made more expensive to encourage people to consume less sugar.

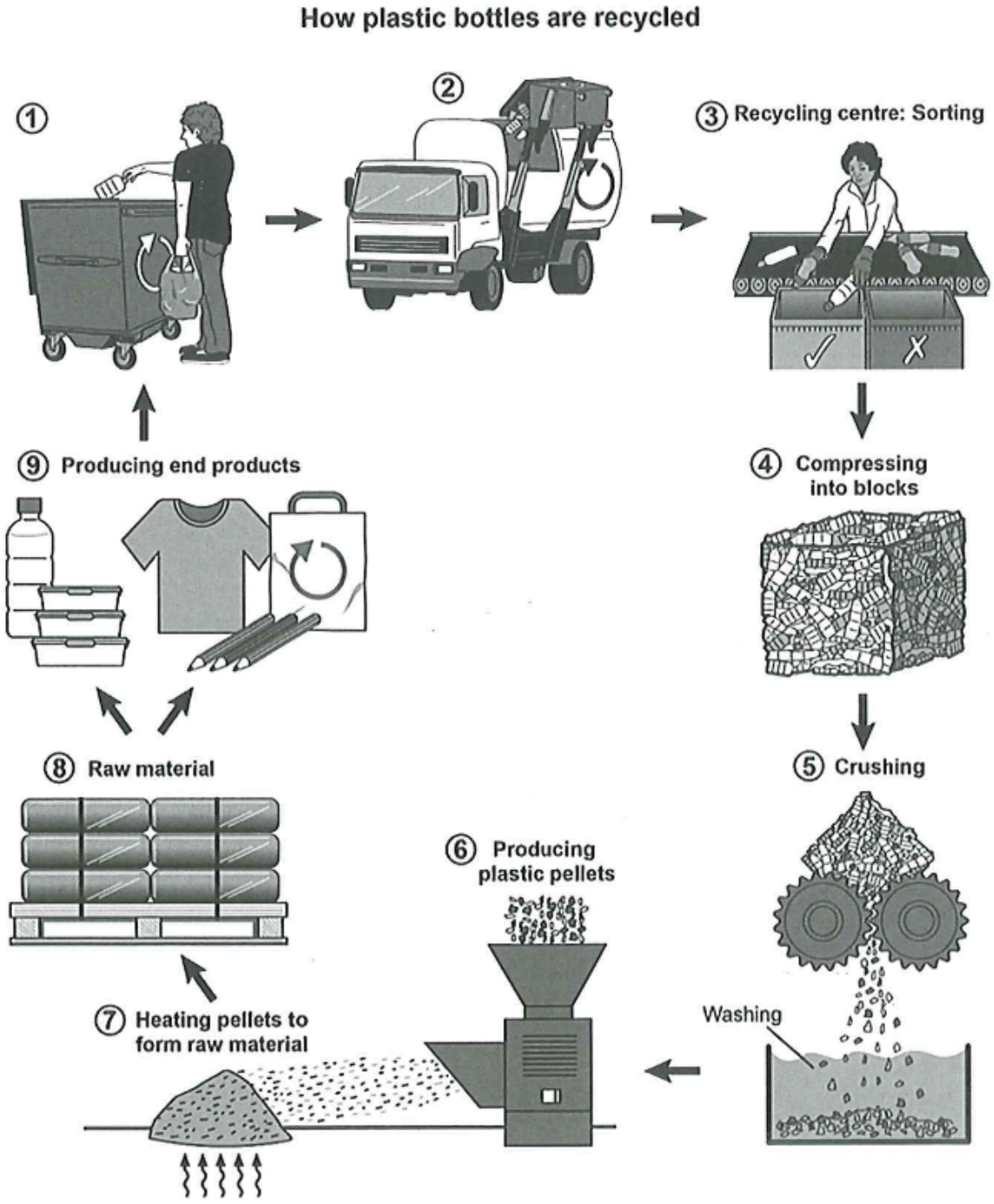
Do you agree or disagree?

Cambridge IELTS 16 Academic Writing Test 4

Part 1

The diagram below shows the process for recycling plastic bottles.

Summarize the information by selecting and reporting the main features, and make comparisons where relevant.



Part 2

In the future all cars, buses and trucks will be driverless. The only people travelling inside these vehicles will be passengers.

Do you think the advantages of driverless vehicles outweigh the disadvantages?

Cambridge IELTS 16 Academic Speaking Test 1

Part 1

Question 1

Who do you spend most time studying/working with? [Why?]

Question 2

What kinds of things do you study/work on with other people? [Why?]

Question 3

Are there times when you study/work better by yourself? [Why/why not?]

Question 4

Is it important to like the people you study/work with? [Why/why not?]

Part 2

Question 5

Describe a tourist attraction you enjoyed visiting.

You should say:

what this tourist attraction is

when and why you visited it

what you did there

and explain why you enjoyed visiting this tourist attraction.

Part 3

Question 6

What are the most popular tourist attractions in your country?

Question 7

How do the types of tourist attractions that younger people like to visit compare with those that older people like to visit?

Question 8

Do you agree that some tourist attractions (e.g national museums/galleries) should be free to visit?

Question 9

Why is tourism important to a country?

Question 10

What are the benefits to individuals of visiting another country as tourists?

Question 11

How necessary is it for tourists to learn the language of the country they're visiting?

Cambridge IELTS 16 Academic Speaking Test 2

Part 1

Question 1

Do you have a favorite flower or plant? [Why/why not?]

Question 2

What kinds of flowers and plants grow near where you live? [Why/why not?]

Question 3

Is it important to you to have flowers and plants in your home? [Why/why not?]

Question 4

Have you ever bought flowers for someone else? [Why/why not?]

Part 2

Question 5

Describe a review you read about a product or service.

You should say:

where you read the review

what the product or service was

what information the review gave about the product or service

and explain what you did as a result of reading this reveiw.

Part 3

Question 6

What kinds of things do people write online reviews about in your country?

Question 7

Why do some people write online reviews?

Question 8

Do you think that online reviews are good for both shoppers and companies?

Question 9

What do you think it might be like to work in a customer service job?

Question 10

Do you agree that customers are more likely to complain nowadays?

Question 11

How important is it for companies to take all customer complaints seriously?

Cambridge IELTS 16 Academic Speaking Test 3

Part 1

Question 1

Is summer your favorite time of year? [Why/why not?]

Question 2

What do you do in summer when the weather's very hot? [Why?]

Question 3

Do you go on holiday every summer? [Why/why not?]

Question 4

Did you enjoy the summer holidays when you were at school? [Why/why not?]

Part 2

Question 5

Describe a luxury item you would like to own in the future.

You should say:

what item you would like to own

what this item looks like

why you would like to own this item

and explain whether you think you will ever own this item.

Part 3

Question 6

Which expensive items would many young people (in your country) like to buy?

Question 7

How do the expensive items that younger people want to buy differ from those that older people want to buy?

Question 8

Do you think that people are more likely to buy expensive items for their friends or for themselves?

Question 9

How difficult is it to become very rich in today's world?

Question 10

Do you agree that money does not necessarily bring happiness?

Question 11

In what ways might rich people use their money to help society?

Cambridge IELTS 16 Academic Speaking Test 4

Part 1

Question 1

What kinds of fast food have you tried? [Why/why not?]

Question 2

Do you ever use a microwave to cook food quickly? [Why/why not?]

Question 3

How popular are fast food restaurants where you live? [Why/why not?]

Question 4

When would you go to a fast-food restaurant? [Why/why not?]

Part 2

Question 5

Describe some technology (e.g an app, phone, software program) that you decided to stop using.

You should say:

when and where you got this technology

why you started using this technology

why you decided to stop using it

and explain how you feel about the decision you made.

Part 3

Question 6

What kinds of computer games do people play in your country?

Question 7

Why do people enjoy playing computer games?

Question 8

Do you think that all computer games should have a minimum age for players?

Question 9

In what ways can technology in the classroom be helpful?

Question 10

Do you agree that students are often better at using technology than their teachers?

Question 11

Do you believe that computers will ever replace human teachers?