

READING

(60 minutes)

READING PASSAGE 1

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

The Dover Bronze-Age Boat

A beautifully preserved boat, made around 3,000 years ago and discovered by chance in a muddy hole, has had a profound impact on archaeological research.

It was 1992. In England, workmen were building a new road through the heart of Dover, to connect the ancient port and the Channel Tunnel, which, when it opened just two years later, was to be the first land link between Britain and Europe for over 10,000 years. A small team from the Canterbury Archaeological Trust (CAT) worked alongside the workmen, recording new discoveries brought to light by the machines.

At the base of a deep shaft six metres below the modern streets a wooden structure was revealed. Cleaning away the waterlogged site overlying the timbers, archaeologists realised its true nature. They had found a prehistoric boat, preserved by the type of sediment in which it was buried. It was then named the Dover Bronze-Age Boat.

About nine metres of the boat's length was recovered; one end lay beyond the excavation and had to be left. What survived consisted essentially of four intricately carved oak planks: two on the bottom, joined along a central seam by a complicated system of wedges and timbers, and two at the side, curved and stitched to the others. The seams had been made watertight by pads of moss, fixed by wedges and yew stitches.

The timbers that closed the recovered end of the boat had been removed in antiquity when it was abandoned, but much about its original shape could be deduced. There was also evidence for missing upper side planks. The boat was not a wreck, but had been deliberately discarded,

dismantled and broken. Perhaps it had been 'ritually killed' at the end of its life, like other Bronze-Age objects.

With hindsight, it was significant that the boat was found and studied by mainstream archaeologists who naturally focused on its cultural context. At the time, ancient boats were often considered only from a narrower technological perspective, but news about the Dover boat reached a broad audience. In 2002, on the tenth anniversary of the discovery, the Dover Bronze-Age Boat Trust hosted a conference, where this meeting of different traditions became apparent. Alongside technical papers about the boat, other speakers explored its social and economic contexts, and the religious perceptions of boats in Bronze-Age societies. Many speakers came from overseas, and debate about cultural connections was renewed.

Within seven years of excavation, the Dover boat had been conserved and displayed, but it was apparent that there were issues that could not be resolved simply by studying the old wood. Experimental archaeology seemed to be the solution: a boat reconstruction, half-scale or full-sized, would permit assessment of the different hypotheses regarding its build and the missing end. The possibility of returning to Dover to search for the boat's unexcavated northern end was explored, but practical and financial difficulties were insurmountable - and there was no guarantee that the timbers had survived the previous decade in the changed environment.

Detailed proposals to reconstruct the boat were drawn up in 2004. Archaeological evidence was beginning to suggest a Bronze-Age community straddling the Channel, brought together by the sea, rather than separated by it. In a region today divided by languages and borders, archaeologists had a duty to inform the general public about their common cultural heritage.

The boat project began in England but it was conceived from the start as a European collaboration. Reconstruction was only part of a scheme that would include a major exhibition and an extensive educational and outreach programme. Discussions began early in 2005 with archaeological bodies, universities and heritage organisations either side of the Channel. There was much enthusiasm and support, and an official launch of the project was held at an international seminar in France in 2007.

Financial support was confirmed in 2008 and the project then named BOAT 1550BC got under way in June 2011. A small team began to make the boat at the start of 2012 on the Roman Lawn outside Dover museum. A full-scale reconstruction of a mid-section had been made in 1996, primarily to see how Bronze-Age replica tools performed. In 2012, however, the hull shape was at the centre of the work, so modern power tools were used to carve the oak planks, before turning to prehistoric tools for finishing. It was decided to make the replica half-scale for reasons of cost and time, and synthetic materials were used for the stitching, owing to doubts about the seeding and tight timetable.

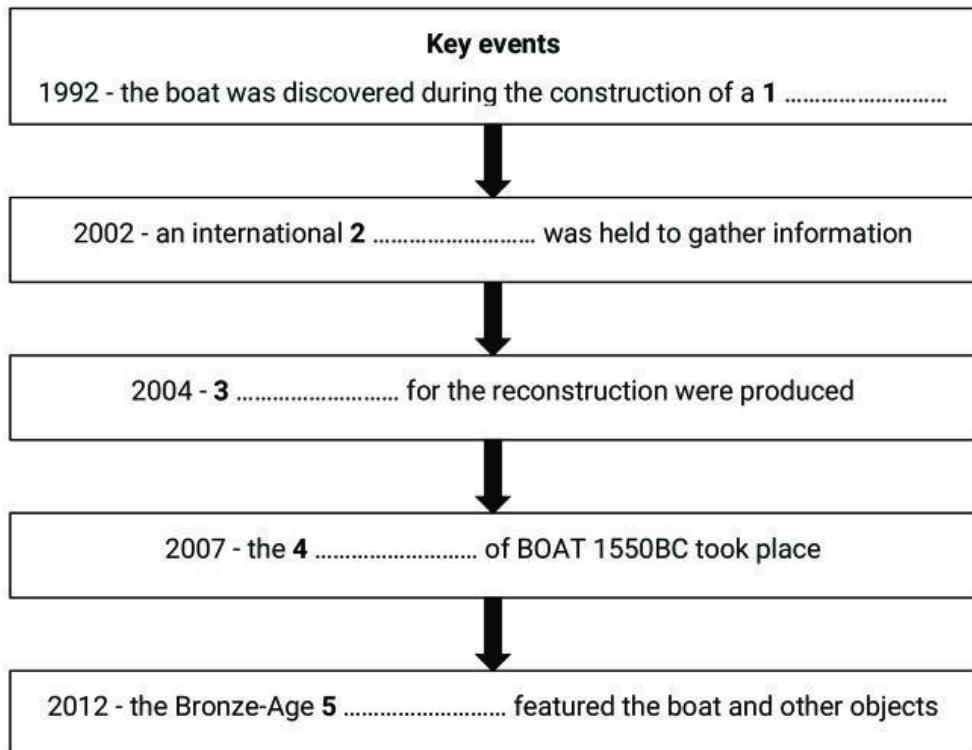
Meanwhile, the exhibition was being prepared ready for opening in July 2012 at the Castle Museum in Boulogne-sur-Mer. Entitled 'Beyond the Horizon: Societies of the Channel & North Sea 3,500 years ago', it brought together for the first time a remarkable collection of Bronze-Age objects, including many new discoveries for commercial archaeology and some of the great treasure of the past. The reconstructed boat, as a symbol of the maritime connections that bound together the communities either side of the Channel, was the centrepiece.

Questions 1-5

Complete the flow-chart below.

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

Write your answers in boxes 1-5 on your answer sheet.



Questions 6-9

Do the following statements agree with the information given in the text?

In boxes 6-9 on your answer sheet, write

TRUE *if the statement agrees with the information*

FALSE *if the statement contradicts the information*

NOT GIVEN *if there is no information on this*

6. Archaeologists realised that the boat had been damaged on purpose.

7. Initially, only the technological aspects of the boat were examined.

8. Archaeologists went back to the site to try and find the missing northern end of the boat.

9. Evidence found in 2004 suggested that the Bronze-Age Boat had been used for trade.

Questions 10-13

Answer the questions below.

*Choose **NO MORE THAN THREE WORDS AND/OR A NUMBER** from the text for each answer.*

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

10. How far under the ground was the boat found?

11. What natural material had been secured to the boat to prevent water entering?

12. What aspect of the boat was the focus of the 2012 reconstruction?

13. Which two factors influenced the decision not to make a full-scale reconstruction of the boat?

READING PASSAGE 2

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

The changing role of airports

Airports continue to diversify their role in an effort to generate income.

Are business meeting facilities the next step? Nigel Halpern, Anne Graham and Rob Davidson investigate.

A In recent times developing commercial revenues has become more challenging for airports due to a combination of factors, such as increased competition from Internet shopping, restrictions on certain sales, such as tobacco, and new security procedures that have had an impact on the dwell time of passengers. Moreover, the global economic downturn has caused a reduction in passenger numbers while those that are travelling generally have less money to spend. This has meant that the share of revenue from non-aeronautical revenues actually peaked at 54% at the turn of the century and has subsequently declined slightly. Meanwhile, the pressures to control the level of aeronautical revenues are as strong as ever due to the poor financial health of many airlines and the rapid rise of the low-cost carrier sector.

B Some of the more obvious solutions to growing commercial revenues, such as extending the merchandising space or expanding the variety of shopping opportunities, have already been tried to their limit at many airports. A more radical solution is to find new sources of commercial revenue within the terminal, and this has been explored by many airports over the last decade or so. As a result, many terminals are now much more than just shopping malls and offer an array of entertainment, leisure, and beauty and wellness facilities. At this stage of facilities provision, the airport also has the possibility of taking on the role of the final destination rather than merely a facilitator of access.

C At the same time, airports have been developing and expanding the range of services that they provide specifically for the business traveller in the terminal. This includes offering business

centres that supply support services, meeting or conference rooms and other space for special events. Within this context, Jarach (2001) discusses how dedicated meetings facilities located within the terminal and managed directly by the airport operator may be regarded as an expansion of the concept of airline lounges or as a way to reconvert abandoned or underused areas of terminal buildings. Previously it was primarily airport hotels and other facilities offered in the surrounding area of the airport that had the potential to take on this role and become active as a business space (McNeill, 2009).

When an airport location can be promoted as a business venue, this may increase the overall appeal of the airport and help it become more competitive in both attracting and retaining airlines and their passengers. In particular, the presence of meeting facilities could become one of the determining factors taken into consideration when business people are choosing airlines and where they change their planes. This enhanced attractiveness itself may help to improve the airport operator's financial position and future prospects, but clearly this will be dependent on the competitive advantage that the airport is able to achieve in comparison with other venues.

E In 2011, an online airport survey was conducted and some of the areas investigated included the provision and use of meeting facilities at airports and the perceived role and importance of these facilities in generating income and raising passenger numbers. In total, there were responses from staff at 154 airports and 68% of these answered 'yes' to the question: Does your airport own and have meetings facilities available for hire? The existence of meeting facilities therefore seems high at airports. In addition, 28% of respondents that did not have meeting facilities stated that they were likely to invest in them during the next five years. The survey also asked to what extent respondents agreed or disagreed with a number of statements about the meeting facilities at their airport. 49% of respondents agreed that they have put more investment into them during recent years; 41% agreed that they would invest more in the immediate future. These are fairly high proportions considering the recent economic climate.

F The survey also asked airports with meeting facilities to estimate what proportion of users are from the local area, i.e. within a 90-minute drive from the airport, or from abroad. Their findings show that meeting facilities provided by the majority of respondents tend to serve local

versus non-local or foreign needs. 63% of respondents estimated that over 60% of users are from the local area. Only 3% estimated that over 80% of users are from abroad. It is therefore not surprising that the facilities are of limited importance when it comes to increasing use of flights at the airport: 16% of respondents estimated that none of the users of their meeting facilities use flights when travelling to or from them, while 56% estimated that 20% or fewer of the users of their facilities use flights.

G The survey asked respondents with meeting facilities to estimate how much revenue their airport earned from its meeting facilities during the last financial year. Average revenue per airport was just \$12,959. Meeting facilities are effectively a non-aeronautical source of airport revenue. Only 1% of respondents generated more than 20% non-aeronautical revenue from their meetings facilities; none generated more than 40%. Given the focus on local demand, it is not surprising that less than a third of respondents agreed that their meeting facilities support business and tourism development in their home region or country.

H The findings of this study suggest that few airports provide meetings facilities as a serious commercial venture. It may be that, as owners of large property, space is available for meeting facilities at airports and could play an important role in serving the needs of the airport, its partners, and stakeholders such as government and the local community. Thus, while the local orientation means that competition with other airports is likely to be minimal, competition with local providers of meetings facilities is likely to be much greater.

Questions 14-18

The text has eight paragraphs, A-H.

Which paragraph contains the following information?

Write the correct letter, A-H, in boxes 14-18 on your answer sheet.

N.B. You may use any letter more than once.

14. evidence that a significant number of airports provide meeting facilities

15. a statement regarding the fact that no further developments are possible in some areas of airport trade
16. reference to the low level of income that meeting facilities produce for airports
17. mention of the impact of budget airlines on airport income
18. examples of airport premises that might be used for business purposes

Questions 19-22

Complete the sentences below.

Choose **NO MORE THAN TWO WORDS** from the text for each answer. Write your answers in boxes 19-22 on your answer sheet.

19. The length of time passengers spend shopping at airports has been affected by updated
.....
20. Airports with a wide range of recreational facilities can become a for people rather than a means to travel.
21. Both passengers and may feel encouraged to use and develop a sense of loyalty towards airports that market their business services.
22. Airports that supply meeting facilities may need to develop a over other venues

Questions 23-26

Complete the summary below.

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

Write your answers in boxes 23-26 on your answer sheet.

Survey Findings

Despite financial constraints due to the **23** a significant percentage of airports provide and wish to further support business meeting facilities. Also, just under 30% of the airports surveyed plan to provide these facilities within **24** However, the main users of the facilities are **25** and as many as 16% of respondents to the survey stated that their users did not take any **26** at the airport.

READING PASSAGE 3

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

Life Without Death

Until recently, the thought that there might ever be a cure for aging seemed preposterous. Growing older and more decrepit appeared to be an inevitable and necessary part of being human. Over the last decade, however, scientists have begun to see aging differently. Some now believe that the average life expectancy may soon be pushed up to 160 years; others think that it may be extended to 200 or 300 years. A handful even wonder whether we might one day live for a millennium or more.

Behind this new excitement is the theory that the primary cause of aging lies in highly reactive molecules called free radicals, left behind by the oxygen we breathe. Free radicals react with the molecules in our bodies, damaging DNA, proteins, and other cell tissues, and are known to be implicated in diseases as diverse as cataracts, cancer, and Alzheimer's. The body does its best to protect itself against free radicals by producing its own chemicals to prevent aging, such as vitamins E and C, but it is always fighting a losing battle.

A year ago Gordon Lithgow of the University of Manchester discovered a way to help combat free radicals. Using one of these anti-aging chemicals, he managed to increase the lifespan of one species of earthworm by 50 percent. Despite cautionary words from the scientists, many welcomed this as the first step towards a drug that would extend life. Research involving the mutation of genes has also thrown up fascinating results: after identifying two of the genes that appear to control how long the earthworm lives, similar genes were found in organisms as various as fruit-flies, mice, and human beings. When one considers the vast evolutionary distances that separate these species, it suggests that we may have discovered a key to how aging is regulated throughout the entire animal kingdom.

In June last year, a small American company called Eukarion sought permission to carry out the first trials of an anti-aging drug, SCS, on human beings. Although it will initially be used to treat diseases associated with old age, Eukarion said that 'if the effect of treating diseases of old age is to extend life, everyone's going to be happy.'

Some scientists, however, are quick to discourage extravagant speculation. 'There is no evidence whatsoever that swallowing any chemical would have an effect on mammals', says Rich Miller of the University of Michigan. 'And those people who claim it might need to go out and do some experimenting'. Some research, moreover, has produced alarming results. As well as controlling aging, these genes also partly control the hormones which regulate growth. The upshot of this is that although the lives of mutant mice can be extended by up to 80 percent, they remain smaller than normal.

Quite apart from these sorts of horrors, the ethical implications of extending the human lifespan are likely to worry many people. Even if the falling birth rates reported in the world's developed nations were to be repeated throughout the world, would this be sufficient to compensate for massively extended life expectancy, and would we be willing to see the demographic balance of our society change out of all recognition? David Gems, the head of the Centre for Research into Ageing at University College, London, is enthusiastic about the opportunities opened up by extended life, but even he observes, 'If people live much longer, the proportion of children would, of course, be very small. It strikes me that it might feel rather claustrophobic: all those middle-aged people and very few children or young people.'

The philosopher John Polkinghorne emphasizes that any discussion of the merits of life-extending therapies must take into account the quality of the life that is lived: 'One would not wish to prolong life beyond the point it had ceased to be creative and fulfilling and meaningful,' he says. 'Presumably, there would have to come to a point at which life ceased to be creative and became just repetition. Clearly, there are only so many rounds of golf one would want to play.'

But Polkinghorne, a member of the Human Genetics Commission, also observes that so far our experience of extended life-expectancy has not resulted in world-weariness. Throughout the last century, life expectancy rose consistently, thanks to improved diet, better hygiene, continuous medical innovation, and the provision of free or subsidized healthcare. In 1952 the Queen sent out 225 telegrams to people on their 100th birthday; in 1996 she sent out 5218. 'Consider also, the lives of our Roman and Anglo-Saxon ancestors' he says. By and large, the doubling of human lifespan we have seen since then has not been a bad thing. Life has not

become frustrating and boring. For example, we now live to see our children's children, and this is good.'

Questions 27-31

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

In boxes 27-31 on your answer sheet, write

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

- 27.** Scientist predictions about how much it will be possible to lengthen human life vary greatly.
- 28.** Research into extending life involves both new drugs and changes to genes.
- 29.** Scientific experiments have not succeeded in making any animals live longer.
- 30.** Most people in the future will decide not to have children.
- 31.** Life expectancy has improved partly because people eat better.

Questions 32-35

Look at the following names of people or organisations and the list of opinions (A-F)

Match each name with the opinion which the person or organization expressed.

| |
|---|
| A. Increases in longevity may cause unwelcome changes in society. |
| B. People will live longer but become tired of life. |
| C. Past experience shows that people do not lose interest in life as a result of living longer. |
| D. There is no scientific proof that any drug can prolong human life expectancy. |
| E. One medicine we are developing may have a welcome benefit apart from its original purpose. |
| F. Using drugs to treat the diseases of old age is only the beginning. |

- 32.** Eukarion
- 33.** Rich Miller
- 34.** David Gems
- 35.** John Polkinghorne

Question 36

Which **TWO** of the following are characteristics of free radicals?

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

- A. They are a partial cause of certain diseases.
- B. They escape into the atmosphere when we breathe.
- C. They are present in two vitamins.
- D. They harm our body chemistry.
- E. They are produced by our bodies.

Questions 37-40

Complete the following summary of the scientific progress towards extending life expectancy.

Choose your answers from the below list.

| | | | |
|--------------|-----------------|----------------|--------------|
| A. chemicals | B. earthworms | C. fruit flies | D. genes |
| E. hormones | F. human beings | G. mice | H. organisms |

In one experiment using anti-ageing chemicals, the life of **37** was extended by half.

38 like the ones which control the ageing process in these animals have also been found in other species. Unfortunately, however, experiments on **39** have been less successful: while they live longer, the **40** controlling their growth are also affected with the result that they grow less.

IELTS Reading Answer Sheet

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