READING PASSAGE 1

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

The Dead Sea Scrolls

In late 1946 or early 1947, three Bedouin teenagers were tending their goats and sheep near the ancient settlement of Qumran, located on the northwest shore of the Dead Sea in what is now known as the West Bank. One of these young shepherds tossed a rock into an opening on the side of a cliff and was surprised to hear a shattering sound. He and his companions later entered the cave and stumbled across a collection of large clay jars, seven of which contained scrolls with writing on them. The teenagers took the seven scrolls to a nearby town where they were sold for a small sum to a local antiquities dealer. Word of the find spread, and Bedouins and archaeologists eventually unearthed tens of thousands of additional scroll fragments from 10 nearby caves; together they make up between 800 and 900 manuscripts. It soon became clear that this was one of the greatest archaeological discoveries ever made.

The origin of the Dead Sea Scrolls, which were written around 2,000 years ago between 150 BCE and 70 CE, is still the subject of scholarly debate even today. According to the prevailing theory, they are the work of a population that inhabited the area until Roman troops destroyed the settlement around 70 CE. The area was known as Judea at that time, and the people are thought to have belonged to a group called the Essenes, a devout Jewish sect.

The majority of the texts on the Dead Sea Scrolls are in Hebrew, with some fragments written in an ancient version of its alphabet thought to have fallen out of use in the fifth century BCE. But there are other languages as well. Some scrolls are in Aramaic, the language spoken by many inhabitants of the region from the sixth century BCE to the siege of Jerusalem in 70 CE. In addition, several texts feature translations of the Hebrew Bible into Greek.

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The Dead Sea Scrolls include fragments from every book of the Old Testament of the Bible except for the Book of Esther. The only entire book of the Hebrew Bible preserved among the manuscripts from Qumran is Isaiah; this copy, dated to the first century BCE, is considered the earliest biblical manuscript still in existence. Along with biblical texts, the scrolls include documents about sectarian regulations and religious writings that do not appear in the Old Testament.

The writing on the Dead Sea Scrolls is mostly in black or occasionally red ink, and the scrolls themselves are nearly all made of either parchment (animal skin) or an early form of paper called "papyrus'. The only exception is the scroll numbered 3Q15, which was created out of a combination of copper and tin. Known as the Copper Scroll, this curious document features letters chiselled onto metal-perhaps, as some have theorized, to better withstand the passage of time. One of the most intriguing manuscripts from Qumran, this is a sort of ancient treasure map that lists dozens of gold and silver caches. Using an unconventional vocabulary and odd spelling, it describes 64 underground hiding places that supposedly contain riches buried for safekeeping. None of these hoards have been recovered, possibly because the Romans pillaged Judea during the first century CE. According to various hypotheses, the treasure belonged to local people, or was rescued from the Second Temple before its destruction or never existed to begin with.

Some of the Dead Sea Scrolls have been on interesting journeys. In 1948, a Syrian Orthodox archbishop known as Mar Samuel acquired four of the original seven scrolls from a Jerusalem shoemaker and part-time antiquity dealer, paying less than $100 for them. He then travelled to the United States and unsuccessfully offered them to a number of universities, including Yale. Finally, in 1954, he placed an advertisement in the business newspaper The Wall Street Journal - under the category 'Miscellaneous Items for Sale' - that read: 'Biblical Manuscripts dating back to at least 200 B.C. are for sale. This would be an ideal gift to an educational or religious institution by an individual or group.' Fortunately, Israeli archaeologist and statesman Yigael Yadin negotiated their purchase and brought the scrolls back to Jerusalem, where they remain to this day.

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In 2017, researchers from the University of Haifa restored and deciphered one of the last untranslated scrolls. The university's Eshbal Ratson and Jonathan Ben-Dov spent one year reassembling the 60 fragments that make up the scroll. Deciphered from a band of coded text on parchment, the find provides insight into the community of people who wrote it and the 364-day calendar they would have used. The scroll names celebrations that indicate shifts in seasons and details two yearly religious events known from another Dead Sea Scroll. Only one more known scroll remains untranslated.

Question 1 - 5

Complete the notes below.

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

The Dead Sea Scrolls

Discovery

Qumran, 1946/7

- three Bedouin shepherds in their teens were near an opening on side of cliff
- heard a noise of breaking when one teenager threw a **(1)**_____
- teenagers went into the **(2)**_____and found a number of containers made of **(3)**_____

The scrolls

- date from between 150 BCE and 70 CE
- thought to have been written by group of people known as the **(4)**_____
- written mainly in the **(5)**_____language
- most are on religious topics, written using ink on parchment or papyrus

Question 6 - 13

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

In boxes on your answer sheet, choose

TRUE if the statement agrees with the information

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FALSE if the statement contradicts the information

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

6_____The Bedouin teenagers who found the scrolls were disappointed by how little money they received for them.

7_____There is agreement among academics about the origin of the Dead Sea Scrolls.

8_____Most of the books of the Bible written on the scrolls are incomplete.

9_____The information on the Copper Scroll is written in an unusual way.

10_____Mar Samuel was given some of the scrolls as a gift.

11_____In the early 1950s, a number of educational establishments in the US were keen to buy scrolls from Mar Samuel.

12_____The scroll that was pieced together in 2017 contains information about annual occasions in the Qumran area 2,000 years ago.

13_____Academics at the University of Haifa are currently researching how to decipher the final scroll.

READING PASSAGE 2

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

The steam car

The successes and failures of the Doble brothers and their steam cars

A

When primitive automobiles first began to appear in the 1800s, their engines were based on steam power. Steam had already enjoyed a long and successful career in the railways, so it was only natural that the technology evolved into a miniaturized version which was separate from the trains. But these early cars inherited steam's weaknesses along with its strengths. The boilers had to be lit by hand, and they required about twenty minutes to build up pressure before they could be driven. Furthermore, their water reservoirs only lasted for about thirty miles before needing replenishment. Despite such shortcomings, these newly designed self-propelled carriages offered quick transportation, and by the early 1900s it was not uncommon to see such machines shuttling wealthy citizens around town.

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B

But the glory days of steam cars were few. A new technology called the Internal Combustion Engine soon appeared, which offered the ability to drive down the road just moments after starting up. At first, these noisy gasoline cars were unpopular because they were more complicated to operate and they had difficult hand-crank starters, which were known to break arms when the engines backfired. But in 1912 General Motors introduced the electric starter, and over the following few years steam power was gradually phased out.

C

Even as the market was declining, four brothers made one last effort to rekindle the technology. Between 1906 and 1909, while still attending high school, Abner Doble and his three brothers built their first steam car in their parents' basement. It comprised parts taken from a wrecked early steam car but reconfigured to drive an engine of their own design. Though it did not run well, the Doble brothers went on to build a second and third prototype in the following years. Though the Doble boys' third prototype, nicknamed the Model B, still lacked the convenience of an internal combustion engine, it drew the attention of automobile trade magazines due to its numerous improvements over previous steam cars. The Model B proved to be superior to gasoline automobiles in many ways. Its high-pressure steam drove the engine pistons in virtual silence, in contrast to clattering gas engines which emitted the aroma of burned hydrocarbons. Perhaps most impressively, the Model B was amazingly swift. It could accelerate from zero to sixty miles per hour in just fifteen seconds, a feat described as 'remarkable acceleration' by Automobile magazine in 1914.

D

The following year Abner Doble drove the Model B from Massachusetts to Detroit in order to seek investment in his automobile design, which he used to open the General Engineering Company. He and his brothers immediately began working on the Model C, which was intended to expand upon the innovations of the Model B. The brothers added features such as a key-based ignition in the cabin, eliminating the need for the operator to manually ignite the boiler. With these enhancements, the Dobles' new car company promised a steam vehicle which would provide all of the convenience of a gasoline car, but with much greater speed, much simpler driving controls, and a virtually silent powerplant. By the following April, the General Engineering Company had received 5,390 deposits for Doble Detroits, which were scheduled for delivery in early 1918.

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E

Later that year Abner Doble delivered unhappy news to those eagerly awaiting the delivery of their modem new cars. Those buyers who received the handful of completed cars complained that the vehicles were sluggish and erratic, sometimes going in reverse when they should go forward. The new engine design, though innovative, was still plagued with serious glitches.

F

The brothers made one final attempt to produce a viable steam automobile. In early 1924, the Doble brothers shipped a Model E to New York City to be road-tested by the Automobile Club of America. After sitting overnight in freezing temperatures, the car was pushed out into the road and left to sit for over an hour in the frosty morning air. At the turn of the key, the boiler lit and reached its operating pressure inside of forty seconds. As they drove the test vehicle further, they found that its evenly distributed weight lent it surprisingly good handling, even though it was so heavy. As the new Doble steamer was further developed and tested, its maximum speed was pushed to over a hundred miles per hour, and it achieved about fifteen miles per gallon of kerosene with negligible emissions.

G

Sadly, the Dobles' brilliant steam car never was a financial success. Priced at around $18,000 in 1924, it was popular only among the very wealthy. Plus, it is said that no two Model Es were quite the same, because Abner Doble tinkered endlessly with the design. By the time the company folded in 1931, fewer than fifty of the amazing Model E steam cars had been produced. For his whole career, until his death in 1961, Abner Doble remained adamant that steam-powered automobiles were at least equal to gasoline cars, if not superior. Given the evidence, he may have been right. Many of the Model E Dobles which have survived are still in good working condition, some having been driven over half a million miles with only normal maintenance. Astonishingly, an unmodified Doble Model E runs clean enough to pass the emissions laws in California today, and they are pretty strict. It is true that the technology poses some difficult problems, but you cannot help but wonder how efficient a steam car might be with the benefit of modem materials and computers. Under the current pressure to improve automotive performance and reduce emissions, it is not unthinkable that the steam car may rise again.

Questions 14-20

Reading Passage 2 has seven paragraphs, **A-G.**

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

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

List of Headings

i A period in cold conditions before the technology is assessed

ii Marketing issues lead to failure

iii Good and bad aspects of steam technology are passed on

iv A possible solution to the issues of today

v Further improvements lead to commercial orders

vi Positive publicity at last for this quiet, clean, fast vehicle

vii A disappointing outcome for customers

viii A better option than the steam car arises

14 Paragraph **A**

15 Paragraph **B**

16 Paragraph **C**

17 Paragraph **D**

18 Paragraph **E**

19 Paragraph **F**

20 Paragraph **G**

Questions 21-23

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

Write the correct letter in boxes 21-23 on your answer sheet.

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21 What point does the writer make about the steam car in Paragraph B?

A Its success was short-lived.
B Not enough cars were made.
C Car companies found them hard to sell.
D People found them hard to drive.

22 When building their first steam car, the Doble brothers

A constructed all the parts themselves.
B made written notes at each stage of the construction.
C needed several attempts to achieve a competitive model.
D sought the advice of experienced people in the car industry.

23 In order to produce the Model C, the Doble brothers

A moved production to a different city.
B raised financial capital.
C employed an additional worker.
D abandoned their earlier designs.

Questions 24-26

Complete the summary below.

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

Write your answers in boxes 24-26 on your answer sheet.

The Model E

The Model E was road-tested in 1924 by the Automobile Club of America. They found it easy to drive, despite its weight, and it impressed the spectators. A later version of the Model E raised its **24**....., while keeping its emissions extremely low.

The steam car was too expensive for many people and its design was constantly being altered. Under **25**..... cars were produced before the company went out of business. However, even today, there are Model Es on the road in the US. They are straightforward to maintain, and they satisfy California's **26**..... emissions laws. Perhaps today's technology and materials would help us revive the steam car.

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READING PASSAGE 3

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

The Unselfish Gene

A psychologist gives his view on how humans became self-centred

There has long been a general assumption that human beings are essentially selfish. We're apparently ruthless, with strong impulses to compete against each other for resources and to accumulate power and possessions. If we are kind to one another, it's usually because we have ulterior motives. If we are good, it's only because we have managed to control and transcend our innate selfishness and brutality.

This bleak view of human nature is closely associated with the science writer Richard Dawkins, whose 1976 book The Selfish Gene became popular because it fitted so well with - and helped to justify - the competitive and individualistic ethos that was so prevalent in late 20th-century societies. Like many others, Dawkins justifies his views with reference to the field of evolutionary psychology. Evolutionary psychology theorises that present-day human traits developed in prehistoric times, during what is termed the "environment of evolutionary adaptedness".
Prehistory is usually seen as a period of intense competition, when life was such a brutal battle that only those with traits such as selfishness, aggression and ruthlessness survived. And because survival depended on access to resources - such as rivers, forests and animals - there was bound to be conflict between rival groups, which led to the development of traits such as racism and warfare. This seems logical. But, in fact, the assumption on which this all rests - that prehistoric life was a desperate struggle for survival - is false.

It's important to remember that in the prehistoric era, the world was very sparsely populated. According to some estimates, around 15,000 years ago, the population of Europe was only 29,000, and the population of the whole world was less than half a million. Humans at that time were hunter-gatherers: people who lived by hunting wild animals and collecting wild plants. With such small population densities, it seems unlikely that prehistoric hunter-gatherer groups had to compete against each other for resources or had any need to develop ruthlessness and competitiveness, or to go to war.

There is significant evidence to back this notion from contemporary hunter-gatherer groups, who live in the same way as prehistoric humans did. As the anthropologist Bruce Knauft has remarked, hunter-gatherers are characterised by 'extreme political and sexual egalitarianism'. Knauft has observed that individuals in such groups don't

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accumulate property or possessions and have an ethical obligation to share everything. They also have methods of preserving egalitarianism by ensuring that disparities of status don't arise.

The !Kung people of southern Africa, for example, swap arrows before going hunting and when an animal is killed, the acclaim does not go to the person who fired the arrow, but to the person the arrow belongs to. And if a person becomes too domineering, the other members of the group ostracise them, exiling the offender from society. Typically in such groups, men do not dictate what women do. Women in hunter-gatherer groups worldwide often benefit from a high level of autonomy, being able to select their own marriage partners, decide what work they do and work whenever they choose to. And if a marriage breaks down, they have custody rights over their children.

Many anthropologists believe that societies such as the !Kung were normal until a few thousand years ago, when population growth led to the development of agriculture and a settled lifestyle. In view of the above, there seems little reason to assume that traits such as racism, warfare and male domination should have been selected by evolution - as they would have been of little benefit in the prehistoric era. Individuals who behaved selfishly and ruthlessly would be less likely to survive, since they would have been ostracised from their groups.

It makes more sense, then, to see traits such as cooperation, egalitarianism, altruism and peacefulness as innate characteristics of human beings. These were the traits that were prevalent in human life for tens of thousands of years. So presumably these traits are still strong in us now.

But if prehistoric life wasn't really as brutal as has often been assumed, why do modern humans behave so selfishly and ruthlessly? Perhaps these negative traits should be seen as a later development, the result of environmental and psychological factors. Research has shown repeatedly that when the natural habitats of primates such as apes and gorillas are disrupted, they tend to become more violent and hierarchical.

So, it could well be that the same thing has happened to us. I believe that the end of the hunter-gatherer lifestyle and the advent of farming was connected to a psychological change that occurred in some groups of people. There was a new sense of individuality and separateness, which led to a new selfishness, and ultimately to hierarchical societies, patriarchy and warfare. At any rate, these negative traits appear to have developed so recently that it doesn't seem feasible to explain them in adaptive or evolutionary terms.

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Question 27-30

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

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

27 What is the writer doing in the first paragraph?

A setting out two opposing views about human nature

B justifying his opinion about our tendency to be greedy

C describing a commonly held belief about people's behaviour

D explaining why he thinks that humans act in a selfish manner

28 What point is made about Richard Dawkins' book The Selfish Gene?

A Its appeal lay in the radical nature of its ideas.

B Its success was due to the scientific support it offered.

C It presented a view that was in line with the attitudes of its time.

D It took an innovative approach to the analysis of human psychology.

29 What does the writer suggest about the prehistoric era in the fourth paragraph?

A Societies were more complex than many people believe.

B Supplies of natural resources were probably relatively plentiful.

C Most estimates about population sizes are likely to be inaccurate.

D Humans moved across continents more than was previously thought.

30 The writer refers to Bruce Knauft's work as support for the idea that

A selfishness is a relatively recent development in human societies.

B only people in isolated communities can live in an unselfish manner.

C very few lifestyles have survived unchanged since prehistoric times.

D hunter-gatherer cultures worldwide are declining in number.

Question 31-35

Complete the summary below

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

Write your answer in the boxes 31-35 on your answer sheet.

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Contemporary hunter-gatherer societies

Bruce Knauft's research shows that contemporary hunter-gatherer societies tend to exhibit a high level of **31**.....in all areas of life. In these cultures distributing resources fairly among all members is a moral obligation. These societies also employ strategies to prevent differences in **32**..... occurring: fo example, the *!Kung* follow a custom whereby the credit for one person's success at **33**..... given to another member of the group. Individuals who behave in a **34**.....manner are punished by being excluded from the group, and women have a considerable amount of **35**..... in choices regarding work and marriage.

Questions 36 40

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

In boxes 36-40 on your answer sheet, write

YES if the statement agrees with the views of the writer

NO if the statement contradicts the views of the writer

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

36 Some anthropologists are mistaken about the point when the number of societies such as the *!Kung* began to decline.

37 Humans who developed warlike traits in prehistory would have had an advantage over those who did not.

38 Being peaceful and cooperative is a natural way for people to behave.

39 Negative traits are more apparent in some modern cultures than in others.

40 Animal research has failed to reveal a link between changes in the environment and the emergence of aggressive tendencies.

Good luck!

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