

朗阁雅思阅读考题预测

Passage 1

Brunel: 'The Practical Prophet'

A

In the frontispiece of his book on Brunel, Peter Hay quotes from Nicholson's British Encyclopaedia of 1909 as follows: 'Engineers are extremely necessary for these purposes; wherefore it is requisite that, besides being ingenious, they should be brave in proportion.' His father, Sir Marc Isambard Brunel (1769-1849), was himself a famous engineer, of French parents. He eventually settled in Britain and married Sophia Kingdom, an English woman whom he had known in France in earlier days. Their only son Isambard was born on 9th April, 1806. He was sent to France at the age of 14 to study mathematics and science and was only 16 when he returned to England to work with his father. Sir Marc was then building his famous tunnel under the River Thames. Isambard was recuperating near Bristol from injuries received in a tunnel cave-in when he became involved with his own first major project.

The Suspension Bridge on the Avon Gorge

B

The span of Brunel's bridge was over 700ft, longer than any existing when it was designed, and the height above water about 245ft. The technical challenges of this engineering project were immense, and Brunel dealt with them with his usual thoroughness and ingenuity. But it is also interesting to look at how Brunel handled the other side of the engineering business: selling his ideas. Two design competitions were held, and the great bridge designer Thomas Telford was the committee's expert. Brunel presented four designs. He went beyond technicalities to include arguments based on, among other things, the grace of his tower design. Unfortunately, he only got so far as to put up the end piers in his lifetime. The Clifton Suspension Bridge was completed in his honour by his engineering friends in 1864, and is still in use.

The Great Western Railway

C

While Brunel was still in Bristol, and with the Avon Bridge project stopped or going slowly, he became aware that the civic authorities saw the need for a railway link to London. Railway location was controversial, since private landowners and towns had to be dealt with. Mainly, the landed gentry did not want a messy, noisy railway anywhere near them. The Duke of Wellington (of Waterloo fame) was certainly against it. Again Brunel showed great skill in presenting his arguments to the various committees and individuals. Brunel built his railway with a broad gauge (7ft) instead of the standard 4ft 8½in, which had been used for lines already installed. There is no doubt that the broad gauge gave superior ride and stability, but it was fighting a standard. In this he was also up against his professional rival (but personal friend) Robert Stephenson and Robert's father, George Stephenson. After much argument, the government settled the matter in 1846 by requiring any new lines to be standard gauge.

Atmospheric railway:

D

Brunel's ready acceptance of new ideas overpowered good engineering judgment (at

least in hindsight) when he advocated the installation of an 'atmospheric railway' in South Devon. It had the great attraction of doing away with the locomotive, and potentially could deal with steeper gradients. The system consisted of a 15in-diameter pipe, laid between the rail lines, with a slit cut along the top. A piston fitted into the pipe, and was connected to the driving railcar above by an arm. The pipe ahead of the piston was then evacuated of air by pumps stationed about two miles apart along the line. The atmospheric pressure then drove the train. Since this connecting arm had to run along the slit, it had to be opened through a flap as the train progressed, but closed airtight behind it. Materials were not up to it, and this arrangement was troublesome and expensive to keep in repair. After a year of frustration, the system was abandoned. Brunel admitted his failure and took responsibility. He also took no fee for his work, setting a good professional example.

Brunel's ships.

E

The idea of using steam to power ships to cross the ocean appealed to Brunel. When his GWR company directors complained about the great length of their railway (it was only about 100 miles), Isambard jokingly suggested that they could even make it longer — why not go all the way to New York, and call the link the Great Western. The "Great Western" was the first steamship to engage in transatlantic service. Brunel formed the Great Western Steamship Company, and construction started on the ship in Bristol in 1836. Built of wood and 236ft long, the Great Western was launched in 1837, and powered by sail and paddlewheels. The first trip to New York took just 15 days, and 14 days to return. This was a great success; a one way trip under sail would take more than a month. The Great Western was the first steamship to engage in transatlantic service and made 74 crossings to New York.

F

Having done so well with the Great Western, Brunel immediately got to work on an even bigger ship. The Great Britain was made of iron and also built in Bristol, 322ft in length. The initial design was for the ship to be driven by paddle wheels, but Brunel had seen one of the first propeller driven ships to arrive in Britain, and he abandoned his plans for paddle wheel propulsion. The ship was launched in 1843 and was the first screw-driven iron ship to cross the Atlantic. The Great Britain ran aground early in its career, but was repaired, sold, and sailed for years to Australia, and other parts of the world, setting the standard for ocean travel. In the early 1970s the old ship was rescued from the Falklands, and is now under restoration in Bristol.

G

Conventional wisdom in Brunel's day was that steamships could not carry enough coal to make long ocean voyages. But he correctly figured out that this was a case where size mattered. He set out to design the biggest ship ever, five times larger than any ship built up to that time. Big enough to carry fuel to get to Australia without refuelling, in addition it would carry 4,000 passengers. The Great Eastern was 692ft long, with a displacement of about 32,000 tons. Construction began in 1854 on the Thames at Millwall. Brunel had chosen John Scott Russell to build the ship. He was a well-established engineer and naval architect, but the contract did not go well. Among other things, Scott Russell was very low in his estimates and money was soon a problem. Construction came to a standstill in 1856 and Brunel himself had to take over the work. But Brunel was nothing if not determined, and by September, 1859, after a delayed and problem ridden launch, the



Great Eastern was ready for the maiden voyage. Brunel was too sick to go, but it was just as well, because only a few hours out there was an explosion in the engine room which would have destroyed a lesser ship. Brunel died within a week or so of the accident. The great ship never carried 4,000 passengers (among other things, the Suez Canal came along) and although it made several transatlantic crossings, it was not a financial success. Shortly after the Great Eastern began working life, the American entrepreneur Cyrus Field and his backers were looking for a ship big enough to carry 5,000 tons of telegraphic cable, which was to be laid on the ocean floor from Ireland to Newfoundland. Although Brunel did not have it in mind, the Great Eastern was an excellent vessel for this work. On July 27, 1866, it successfully completed the connection and a hundred years of transatlantic communication by cable began. The ship continued this career for several years, used for laying cables in many parts of the world.

朗阁海外考试研究中心

RAFLE



Since 1999

Questions 1-6

Use the information in the passage to match the project Brunel did (listed A-G) with opinions or deeds below. Write the appropriate letters A-G, in boxes 1-6 on your answer sheet.

- | | |
|---|---------------------------|
| A | River Thames Tunnel |
| B | Clifton Suspension Bridge |
| C | Atmospheric Railway |
| D | Great Britain |
| E | The Great Western |
| F | Great Western Railway |
| G | The Great Eastern |

- 1 The project of construction that I.K. Brunel was not responsible for.
- 2 The project had stopped due to inconvenience and high maintaining cost.
- 3 The project was honored to yet not completed by Brunel himself.
- 4 The project had budget problem although built by a famous engineer.
- 5 Serious problem happened and delayed repeatedly.
- 6 The first one to cross Atlantic Ocean in mankind history.

Questions 7-9

The reading Passage has seven paragraphs A-G.

Which paragraph contains the following information?

Write the correct letter A-G, in boxes 7-9 on your answer sheet

NB You may use any letter more than once.

- 7 There was a great ship setting the criteria for journey of ocean.
- 8 An ambitious project which seemed to be applied in an unplanned service later.
- 9 Brunel showed his talent of inter-personal skills with landlords and finally project had been gone through.

Questions 10-13

Complete the following summary of the paragraphs of Reading Passage 1 using no more than two words from the Reading Passage for each answer.

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

The Great Eastern was specially designed with a 10..... for carrying more fuels and was to take long voyage to 11.....; However due to physical condition, Brunel couldn't be able to go with maiden voyage. Actually The Great Eastern was unprofitable and the great ship never crossed 12..... But soon after there was an ironic opportunity for the Great Eastern which was used to carry and to lay huge 13..... in Atlantic Ocean floor.

Answer keys:

- 1 A
- 2 C
- 3 B
- 4 G
- 5 G
- 6 E
- 7 F
- 8 G
- 9 C
- 10 the biggest size ship / bigger size ship / lager size ship
- 11 Australia
- 12 Suez canal
- 13 telegraphic cable / telegraphic cables



Volatility Kills

A

Despite gun battles in the capital of Chad, rioting in Kenya and galloping inflation in Zimbabwe, the economics of sub-Saharan Africa are, as a whole, in better shape than they were a few years ago. The World Bank has reported recently that this part of the continent experienced a respectable growth rate of 5.6 percent in 2006 and a higher rate from 1995 to 2005 than in previous decades. The bank has given a cautious assessment that the region may have reached a turning point. An overriding question for developmental economists remains whether the upswing will continue so Africans can grow their way out of a poverty that relegates some 40 percent of the nearly 744 million in that region to living on less than a dollar a day. The optimism, when inspected more closely, may be short-lived because of the persistence of a devastating pattern of economic volatility that has lingered for decades.

B

"In reality, African countries grow as fast as Asian countries and other developing countries during the good times, but afterward they see growth collapses," comments Jorge Arbache, a senior World Bank economist. "How to prevent collapses may be as important as promoting growth." If these collapses had not occurred, he observes, the level of gross domestic product for each citizen of the 48 nations of sub-Saharan Africa would have been a third higher.

C

The prerequisites to prevent the next crash are not in place, according to a World Bank study issued in January, *Is Africa's Recent Growth Robust?* The growth period that began in 1995, driven by a commodities boom spurred in particular by demand from China, may not be sustainable, because the economic fundamentals — new investment and the ability to stave off inflation, among other factors — are absent. The region lacks the necessary infrastructure that would encourage investors to look to Africa to find the next Bengaluru (Bangalore) or Shenzhen, a November report from the bank concludes. For sub-Saharan countries rich in oil and other resources, a boom period may even undermine efforts to institute sound economic practices. From 1996 to 2005, with growth accelerating, measures of governance — factors such as political stability, rule of law, and control of corruption — actually worsened, especially for countries endowed with abundant mineral resources, the January report notes.

D

Perhaps the most incisive analysis of the volatility question comes from Paul Collier, a longtime specialist in African economics at the University of Oxford and author of the recent book *The Bottom Billion*. He advocates a range of options that the U.S. and other nations could adopt when formulating policy toward African countries. They include revamped trade measures, better-apportioned aid and sustained military intervention in certain instances, to avert what he sees as a rapidly accelerating divergence of the world's poorest, primarily in Africa, from the rest of the world, even other developing nations such as India and China.

E

Collier find that bad governance is the main reason countries fail to take advantage of the

revenue bonanza that results from a boom. Moreover, a democratic government, he adds, often makes the aftermath of a boom worse. “Instead of democracy disciplining governments to manage these resource booms well, what happens is that the resource revenues corrupt the normal functioning of democracy — unless you stop (them from) corrupting the normal function of democracy with sufficient checks and balances,” he said at a talk in January at the Carnegie Council in New York City.

F

Collier advocates that African nations institute an array of standards and codes to bolster governments, one of which would substitute auctions for bribes in apportioning mineral rights and another of which would tax export revenues adequately. He cites the Democratic Republic of the Congo, which took in \$200 million from mineral exports in 2006 yet collected only \$86,000 in royalties for its treasury. “If a nation gets these points right,” he argues, “it’s going to develop. If it gets them wrong, it won’t.”

G

To encourage reform, Collier recommends that the G8 nations agree to accept these measures as voluntary guidelines for multinationals doing business in Africa — companies, for instance, would only enter new contracts through auctions monitored by an international verification group. Such an agreement would follow the examples of the so-called Kimberley Process, which has effectively undercut the trade in blood diamonds, and the Extractive Industries Transparency Initiative, in which a government must report to its citizens the revenues it receives from sales of natural resources.

H

These measures, he says, are more important than elevating aid levels, an approach emphasized by economist Jeffrey D. Sachs of Columbia University and celebrity activists such as Bono. Collier insists that first Angola receives tens of billions of dollars in oil revenue and whether it gets a few hundred million more or less in aid is really second-order.



Questions 1-4

Use the information in the passage to match the people (listed A-C) with opinions or deeds below. Write the appropriate letters A-C in boxes 1-4 on your answer sheet.

NB you may use any letter more than once

- | | |
|---|------------------|
| A | Jeffrey D. Sachs |
| B | Paul Collier |
| C | Jorge Arbache |

1. An unexpectedly opposite result
2. Estimated more productive outcomes if it were not for sudden economic downturns
3. A proposal for a range of recommended instructions for certain countries to narrow the widening economic gap
4. An advocate for a method used for a specific assessment

Questions 5-9

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

In boxes 5-9 on your answer sheet, write

TRUE if the statement is true

FALSE if the statement is false

NOT GIVEN if the information is not given in the passage

5. The instability in economy in some African countries might negatively impact their continuing growth after a certain level has been reached.
6. Collier is the most influential scholar on the study of volatility problem.
7. Certain African governments levy considerable taxes on people profiting greatly from exportation.
8. Some African nations' decisions on addressing specific existing problems are directly related to the future of their economic trends.
9. Collier regards Jeffrey D. Sachs' recommended way of evaluating of little importance.

Questions 10-13

Complete the following summary of the paragraphs of Reading Passage, using **No More than Three words** from the Reading Passage for each answer. Write your answers in boxes 10-13 on your answer sheet.

According to one research carried by the World Bank, some countries in Africa may suffer from 10..... due to the lack of according preconditions. They experienced a growth stimulated by 11..... but according to another study, they may not keep this trend stable because they don't have 12..... which would attract investors. To some countries with abundant resources this fast-growth period might even mean something devastating to their endeavor. During one specific decade accompanied by 13....., as a matter of fact, the governing saw a deterioration.

Answer Keys:

- 1 B
- 2 C
- 3 B
- 4 B
- 5 TRUE
- 6 NOT GIVEN
- 7 FALSE
- 8 TRUE
- 9 NOT GIVEN
- 10 the next crash
- 11 a commodities boom
- 12 necessary infrastructure
- 13 growth accelerating



Passage 2

Fossil files — The Paleobiology Database

A

Are we now living through the sixth extinction as our own activities destroy ecosystems and wipe out diversity? That's the doomsday scenario painted by many ecologists, and they may well be right. The trouble is we don't know for sure because we don't have a clear picture of how life changes between extinction events or what has happened in previous episodes. We don't even know how many species are alive today, let alone the rate at which they are becoming extinct. A new project aims to fill some of the gaps. The Paleobiology Database aspires to be an online repository of information about every fossil ever dug up. It is a huge undertaking that has been described as biodiversity's equivalent of the Human Genome Project. Its organizers hope that by recording the history of biodiversity they will gain an insight into how environmental changes have shaped life on Earth in the past and how they might do so in the future. The database may even indicate whether life can rebound no matter what we throw at it, or whether a human induced extinction could be without parallel, changing the rules that have applied throughout the rest of the planet's history.

B

But already the project is attracting harsh criticism. Some experts believe it to be seriously flawed. They point out that a database is only as good as the data fed into it, and that even if all the current fossil finds were catalogued, they would provide an incomplete inventory of life because we are far from discovering every fossilised species. They say that researchers should get up from their computers and get back into the dirt to dig up new fossils. Others are more sceptical still, arguing that we can never get the full picture because the fossil record is riddled with holes and biases.

C

Fans of the Paleobiology Database acknowledge that the fossil record will always be incomplete. But they see value in looking for global patterns that show relative changes in biodiversity. "The fossil record is the best tool we have for understanding how diversity and extinction work in normal times," says John Alroy from the National Center for Ecological Analysis and Synthesis in Santa Barbara. "Having a background extinction estimate gives us a benchmark for understanding the mass extinction that's currently under way. It allows us to say just how bad it is in relative terms."

D

To this end, the Paleobiology Database aims to be the most thorough attempt yet to come up with good global diversity curves. Every day between 10 and 15 scientists around the world add information about fossil finds to the database. Since it got up and running in 1998, scientists have entered almost 340,000 specimens, ranging from plants to whales to insects to dinosaurs to sea urchins. Overall totals are updated hourly at www.paleodb.org. Anyone can download data from the public part of the site and play with the numbers to their heart's content. Already, the database has thrown up some surprising results. Looking at the big picture, Alroy and his colleagues believe they have found evidence that biodiversity reached a plateau long ago, contrary to the received wisdom that species numbers have increased continuously between extinction events. "The traditional view is that diversity has gone up and up and up," he says. "Our research

is showing that diversity limits were approached many tens of millions of years before the dinosaurs evolved, much less suffered extinction.” This suggests that only a certain number of species can live on Earth at a time, filling a prescribed number of niches like spaces in a multi-storey car park. Once it’s full, no more new species can squeeze in, until extinctions free up new spaces or something rare and catastrophic adds a new floor to the car park.

E

Alroy has also used the database to reassess the accuracy of species names. His findings suggest that irregularities in classification inflate the overall number of species in the fossil record by between 32 and 44 per cent. Single species often end up with several names, he says, due to misidentification or poor communication between taxonomists in different countries. Repetition like this can distort diversity curves. “If you have really bad taxonomy in one short interval, it will look like a diversity spike — a big diversification followed by a big extinction — when all that has happened is a change in the quality of names,” says Alroy. For example, his statistical analysis indicates that of the 4861 North American fossil mammal species catalogued in the database, between 24 and 31 per cent will eventually prove to be duplicates.

F

Of course, the fossil record is undeniably patchy. Some places and times have left behind more fossil-filled rocks than others. Some have been sampled more thoroughly. And certain kinds of creatures — those with hard parts that lived in oceans, for example — are more likely to leave a record behind, while others, like jellyfish, will always remain a mystery. Alroy has also tried to account for this. He estimates, for example, that only 41 per cent of North American mammals that have ever lived are known from fossils, and he suspects that a similar proportion of fossils are missing from other groups, such as fungi and insects.

G

Not everyone is impressed with such mathematical wizardry. Jonathan Adrain from the University of Iowa in Iowa City points out that statistical wrangling has been known to create mass extinctions where none occurred. It is easy to misinterpret data. For example, changes in sea level or inconsistent sampling methods can mimic major changes in biodiversity. Indeed, a recent and thorough examination of the literature on marine bivalve fossils has convinced David Jablonsky from the University of Chicago and his colleagues that their diversity has increased steadily over the past 5 million years.

H

With an inventory of all living species, ecologists could start to put the current biodiversity crisis in historical perspective. Although creating such a list would be a task to rival even the Paleobiology Database, it is exactly what the San Francisco-based ALL Species Foundation hopes to achieve in the next 25 years. The effort is essential, says Harvard biologist Edward O. Wilson, who is alarmed by current rates of extinction. “There is a crisis. We’ve begun to measure it, and it’s very high,” Wilson says. “We need this kind of information in much more detail to protect all of biodiversity, not just the ones we know well.” Let the counting continue.

Questions 14-19

The reading passage has seven paragraphs, A-F

Choose the correct heading for paragraphs A-F from the list below.

Write the correct number, i-xi, in boxes 14-19 on your answer sheet.

List of Headings

- i Potential error exists in the database
- ii Supporter of database recleared its value
- iii The purpose of this paleobiology data
- iv Reason why some certain species were not included in it
- v Duplication of breed but with different names
- vi Achievement of Paleobiology Databasesince
- vii Criticism on the project which is waste of fund

- 14 Paragraph A
- 15 Paragraph B
- 16 Paragraph C
- 17 Paragraph D
- 18 Paragraph E
- 19 Paragraph F

Questions 20-22

Use the information in the passage to match the people (listed A-C) with opinions or deeds below. Write the appropriate letters A-C in boxes 20-22 on your answer sheet.

- A Jonathan Adrain
- B John Alroy
- C David Jablonsky
- D Edward O. Wilson

- 20 Creating the Database would help scientist to identify connections of all species.
- 21 Believed in contribution of detailed statistics should cover beyond the known species.
- 22 reached a contradictory finding to the tremendous species die-out.

Questions 23-24

Choose the **TWO** correct letter following

Write your answers in boxes 23-24 on your answer sheet.

Please choose **TWO** correct descriptions about the *The Paleobiology Database* in this passage:

- A almost all the experts welcome this project
- B intrigues both positive and negative opinions from various experts
- C all different creature in the database have unique name
- D aims to embrace all fossil information globally
- E get more information from record rather than the field

Questions 25-26

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

Write your answers in boxes 25-26 on your answer sheet.

25 According to the passage, jellyfish belongs to which category of *The Paleobiology Database*?

- A repetition breed
- B untraceable species
- C specifically detailed species
- D currently living creature

26 What is the author's suggestion according to the end of passage?

- A continue to complete counting the number of species in the Paleobiology Database
- B stop contributing The Paleobiology Database
- C try to create a database of living creature
- D study more in the field rather than in the book



Answer keys:

- 14 iii
- 15 i
- 16 ii
- 17 vi
- 18 v
- 19 iv
- 20 B
- 21 D
- 22 C
- 23 B
- 24 D
- 25 B
- 26 C



Finding Our Way

A

“Drive 200 yards, and then turn right,” says the ear’s computer voice. You relax in the driver’s seat, follow the directions and reach your destination without error. It’s certainly nice to have the Global Positioning System (GPS) to direct you to within a few yards of your goal. Yet if the satellite service’s digital maps become even slightly outdated, you can become lost. Then you have to rely on the ancient human skill of navigating in three-dimensional space. Luckily, your biological finder has an important advantage over GPS: it does not go awry if only one part of the guidance system goes wrong, because it works in various ways. You can ask questions of people on the sidewalk. Or follow a street that looks familiar. Or rely on a navigational rubric: “If I keep the East River on my left, I will eventually cross 34th Street.” The human positioning system is flexible and capable of learning. Anyone who knows the way from point A to point B — and from A to C — can probably figure out how to get from B to C, too.

B

But how does this complex cognitive system really work? Researchers are looking at several strategies people use to orient themselves in space: guidance, path integration and route following. We may use all three or combinations thereof. And as experts learn more about these navigational skills, they are making the case that our abilities may underlie our powers of memory and logical thinking. Grand Central, Please imagine that you have arrived in a place you have never visited — New York City. You get off the train at Grand Central Terminal in midtown Manhattan. You have a few hours to explore before you must return for your ride home. You head uptown to see popular spots you have been told about: Rockefeller Center, Central Park, the Metropolitan Museum of Art. You meander in and out of shops along the way. Suddenly, it is time to get back to the station. But how?

C

If you ask passersby for help, most likely you will receive information in many different forms. A person who orients herself by a prominent landmark would gesture southward. Look down there. See the tall, broad MetLife Building? Head for that — the station is right below it.” Neurologists call this navigational approach “guidance”, meaning that a landmark visible from a distance serves as the marker for one’s destination.

D

Another city dweller might say: “What places do you remember passing? ... Okay. Go toward the end of Central Park, then walk down to St. Patrick’s Cathedral. A few more blocks, and Grand Central will be off to your left.” In this case, you are pointed toward the most recent place you recall, and you aim for it. Once there you head for the next notable place and so on, retracing your path. Your brain is adding together the individual legs of your trek into a cumulative progress report. Researchers call this strategy “path integration”. Many animals rely primarily on path integration to get around, including insects, spiders, crabs and rodents. The desert ants of the genus *Cataglyphis* employ this method to return from foraging as far as 100 yards away. They note the general direction they came from and retrace their steps, using the polarization of sunlight to orient themselves even under overcast skies. On their way back they are faithful to this inner homing vector. Even when a scientist picks up an ant and puts it in a totally different

spot, the insect stubbornly proceeds in the originally determined direction until it has gone “back” all of the distance it wandered from its nest. Only then does the ant realize it has not succeeded, and it begins to walk in successively larger loops to find its way home.

E

Whether it is trying to get back to the anthill or the train station, any animal using path integration must keep track of its own movements so it knows, while returning, which segments it has already completed. As you move, your brain gathers data from your environment — sights, sounds, smells, lighting, muscle contractions, a sense of time passing — to determine which way your body has gone. The church spire, the sizzling sausages on that vendor’s grill, the open courtyard, and the train station — all represent snapshots of memorable junctures during your journey.

F

In addition to guidance and path integration, we use a third method for finding our way. An office worker you approach for help on a Manhattan street corner might say: “Walk straight down Fifth, turn left on 47th, turn right on Park, go through the walkway under the Helmsley Building, then cross the street to the MetLife Building into Grand Central.” This strategy, called route following, uses landmarks such as buildings and street names, plus directions — straight, turn, go through — for reaching intermediate points. Route following is more precise than guidance or path integration, but if you forget the details and take a wrong turn, the only way to recover is to backtrack until you reach a familiar spot, because you do not know the general direction or have a reference landmark for your goal. The route-following navigation strategy truly challenges the brain. We have to keep all the landmarks and intermediate directions in our head. It is the most detailed and therefore most reliable method, but it can be undone by routine memory lapses. With path integration, our cognitive memory is less burdened; it has to deal with only a few general instructions and the homing vector. Path integration works because it relies most fundamentally on our knowledge of our body’s general direction of movement, and we always have access to these inputs. Nevertheless, people often choose to give route-following directions, in part because saying “Go straight that way!” just does not work in our complex, man-made surroundings.

G

Road Map or Metaphor? On your next visit to Manhattan you will rely on your memory to get around. Most likely you will use guidance, path integration and route following in various combinations. But how exactly do these constructs deliver concrete directions? Do we humans have, as an image of the real world, a kind of road map in our heads — with symbols for cities, train stations and churches; thick lines for highways; narrow lines for local streets? Neurobiologists and cognitive psychologists do call the portion of our memory that controls navigation a “cognitive map”. The map metaphor is obviously seductive: maps are the easiest way to present geographic information for convenient visual inspection. In many cultures, maps were developed before writing, and today they are used in almost every society. It is even possible that maps derive from a universal way in which our spatial-memory networks are wired.

H

Yet the notion of a literal map in our heads may be misleading; a growing body of



research implies that the cognitive map is mostly a metaphor. It may be more like a hierarchical structure of relationships. To get back to Grand Central, you first envision the large scale — that is, you visualize the general direction of the station. Within that system you then imagine the route to the last place you remember. After that, you observe your nearby surroundings to pick out a recognizable storefront or street corner that will send you toward that place. In this hierarchical, or nested, scheme, positions and distances are relative, in contrast with a road map, where the same information is shown in a geometrically precise scale.



Questions 14-18

Use the information in the passage to match the category of each navigation method (listed A-C) with correct statement. Write the appropriate letters A-C in boxes 14-18 on your answer sheet.

NB you may use any letter more than once

- | | |
|---|------------------|
| A | Guidance |
| B | Path integration |
| C | Route following |

- 14 Using basic direction from starting point and light intensity to move on.
15 Using combination of place and direction heading for destination.
16 Using an iconic building near your destination as orientation.
17 Using a retrace method from a known place if a mistake happens.
18 Using a passed spot as reference for a new integration.

Questions 19-21

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

Write your answers in boxes 19-21 on your answer sheet.

- 19 What does the ant of Cataglyphis respond if it has been taken to another location according to the passage?
A Changes the orientation sensors improvingly
B Releases biological scent for help from others
C Continues to move by the original orientation
D Totally gets lost once disturbed
- 20 Which of the followings is true about "cognitive map" in this passage?
A There is not obvious difference contrast by real map
B It exists in our head and is always correct
C It only exists under some cultures
D It was managed by brain memory
- 21 Which of following description of way findings correctly reflects the function of cognitive map?
A It visualises a virtual route in a large scope
B It reproduces an exact details of every landmark
C Observation plays a more important role
D Store or supermarket is a must in the map

Since 1999

Questions 22-26

Do the following statements agree with the information given in Reading Passage 2?

In boxes 22-26 on your answer sheet, write

TRUE if the statement is true

FALSE if the statement is false

NOT GIVEN if the information is not given in the passage

22 Biological navigation has a state of flexibility.

23 You will always receive good reaction when you ask direction.

24 When someone follows a route, he or she collects comprehensive perceptual information in mind on the way.

25 Path integration requires more thought from brain compared with route following.

26 In a familiar surrounding, an exact map of where you are will automatically emerge in your head.

朗阁海外考试研究中心

RAFLE

FOUNDED

Since 1999

Answer keys:

- 14 B
- 15 C
- 16 A
- 17 C
- 18 B
- 19 C
- 20 D
- 21 A
- 22 TRUE
- 23 NOT GIVEN
- 24 TRUE
- 25 FALSE
- 26 FALSE



Passage 3

Communication in science

A

Science plays an increasingly significant role in people's lives, making the faithful communication of scientific developments more important than ever. Yet such communication is fraught with challenges that can easily distort discussions, leading to unnecessary confusion and misunderstandings.

B

Some problems stem from the esoteric nature of current research and the associated difficulty of finding sufficiently faithful terminology. Abstraction and complexity are not signs that a given scientific direction is wrong, as some commentators have suggested, but are instead a tribute to the success of human ingenuity in meeting the increasingly complex challenges that nature presents. They can, however, make communication more difficult. But many of the biggest challenges for science reporting arise because in areas of evolving research, scientists themselves often only partly understand the full implications of any particular advance or development. Since that dynamic applies to most of the scientific developments that directly affect people's lives (global warming, cancer research, diet studies — learning how to overcome it is critical to spurring a more informed scientific debate among the broader public.

C

Ambiguous word choices are the source of some misunderstandings. Scientists often employ colloquial terminology, which they then assign a specific meaning that is impossible to fathom without proper training. The term “relativity”, for example, is intrinsically misleading. Many interpret the theory to mean that everything is relative and there are no absolutes. Yet although the measurements any observer makes depend on his coordinates and reference frame, the physical phenomena he measures have an invariant description that transcends that observer's particular coordinates. Einstein's theory of relativity is really about finding an invariant description of physical phenomena. True, Einstein agreed with the idea that his theory would have been better named “invarianten theorie”. But the term “relativity” was already entrenched at the time for him to change.

D

“The uncertainty principle” is another frequently abused term. It is sometimes interpreted as a limitation on observers and their ability to make measurements.

E

But it is not about intrinsic limitations on any one particular measurement; it is about the inability to precisely measure particular pairs of quantities simultaneously? The first interpretation is perhaps more engaging from a philosophical or political perspective. It's just not what the science is about.

F

Even the word “theory” can be a problem. Unlike most people, who use the word to describe a passing conjecture that they often regard as suspect, physicists have very specific ideas in mind when they talk about theories. For physicists, theories entail a

definite physical framework embodied in a set of fundamental assumptions about the world that lead to a specific set of equations and predictions — ones that are borne out by successful predictions. Theories aren't necessarily shown to be correct or complete immediately. Even Einstein took the better part of a decade to develop the correct version of his theory of general relativity. But eventually both the ideas and the measurements settle down and theories are either proven correct, abandoned or absorbed into other, more encompassing theories.

G

“Global warming” is another example of problematic terminology. Climatologists predict more drastic fluctuations in temperature and rainfall — not necessarily that every place will be warmer. The name sometimes subverts the debate, since it lets people argue that their winter was worse, so how could there be global warming? Clearly “global climate change” would have been a better name. But not all problems stem solely from poor word choices. Some stem from the intrinsically complex nature of much of modern science. Science sometimes transcends this limitation: remarkably, chemists were able to detail the precise chemical processes involved in the destruction of the ozone layer, making the evidence that chlorofluorocarbon gases (Freon, for example) were destroying the ozone layer indisputable.

H

A better understanding of the mathematical significance of results and less insistence on a simple story would help to clarify many scientific discussions. For several months, Harvard was tortured by empty debates over the relative intrinsic scientific abilities of men and women. One of the more amusing aspects of the discussion was that those who believed in the differences and those who didn't used the same evidence about gender-specific special ability. How could that be? The answer is that the data shows no substantial effects. Social factors might account for these tiny differences, which in any case have an unclear connection to scientific ability. Not much of a headline when phrased that way, is it? Each type of science has its own source of complexity and potential for miscommunication. Yet there are steps we can take to improve public understanding in all cases. The first would be to inculcate greater understanding and acceptance of indirect scientific evidence. The information from an unmanned space mission is no less legitimate than the information from one in which people are on board.

I

This doesn't mean never questioning an interpretation, but it also doesn't mean equating indirect evidence with blind belief, as people sometimes suggest. Second, we might need different standards for evaluating science with urgent policy implications than research with purely theoretical value. When scientists say they are not certain about their predictions, it doesn't necessarily mean they've found nothing substantial. It would be better if scientists were more open about the mathematical significance of their results and if the public didn't treat math as quite so scary; statistics and errors, which tell us the uncertainty in a measurement, give us the tools to evaluate new developments fairly.

J

But most important, people have to recognize that science can be complex. If we accept only simple stories, the description will necessarily be distorted. When advances are



subtle or complicated, scientists should be willing to go the extra distance to give proper explanations and the public should be more patient about the truth. Even so, some difficulties are unavoidable. Most developments reflect work in progress, so the story is complex because no one yet knows the big picture.



Questions 27-31

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

Write your answers in boxes 27-31 on your answer sheet.

- 27 Why is faithful science communication important?
- A Science plays an increasingly significant role in people's lives.
 - B Science is fraught with challenges public are interested in.
 - C The nature of complexity in science communication leads to confusion.
 - D Scientific inventions are more important than ever before.
- 28 What is the reason that the author believes for the biggest challenges for science reporting?
- A phenomenon such as global warming, cancer research, diet studies are too complex
 - B Scientists themselves often only partly understand the Theory of Evolution
 - C Scientists do not totally comprehend the meaning of certain scientific evolution
 - D Scientists themselves often partly understand the esoteric communication nature
- 29 According to the 3rd paragraph, the reference to the term and example of "theory of relativity" is to demonstrate
- A theory of relativity is about an invariant physical phenomenon
 - B common people may be misled by the inaccurate choice of scientific phrase
 - C the term "relativity", is designed to be misleading public
 - D everything is relative and there is no absolute existence
- 30 Which one is a good example of appropriate word choice?
- A Scientific theory for uncertainty principle
 - B phenomenon of Global warming
 - C the importance of ozone layer
 - D Freon's destructive process on environmental
- 31 What is surprising finding of the Harvard debates in the passage?
- A There are equal intrinsic scientific abilities of men and women.
 - B The proof applied by both sides seemed to be of no big difference.
 - C The scientific data usually shows no substantial figures to support a debated idea.
 - D Social factors might have a clear connection to scientific ability.

Since 1999

Questions 32-35

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

In boxes 32-35 on your answer sheet, write

TRUE if the statement is true

FALSE if the statement is false

NOT GIVEN if the information is not given in the passage

32 “Global warming” scientifically refers to greater fluctuations in temperature and rainfall rather than a universal temperature rise.

33 More media coverage of “global warming” would help public to recognize the phenomenon.

34 Harvard debates should focus more on female scientist and male scientists.

35 Public understanding and acceptance of indirect scientific evidence in all cases would lead to confusion.

Questions 36-40

Complete the following summary of the paragraphs of Reading Passage, using no more than two words from the Reading Passage for each answer. Write your answers in boxes 36-40 on your answer sheet.

Science Communication is fraught with challenges that can easily distort discussions, leading to unnecessary confusion and misunderstandings. Firstly, Ambiguous 36..... are the source of some misunderstandings. Common people without proper training do not understand clearly or deeply a specific scientific meaning via the 37..... scientists often employed. Besides, the measurements any 38..... makes cannot be confined to describe in a constant 39..... yet the phenomenon can be. What's more, even the word “theory” can be a problem. Theories aren't necessarily shown to be correct or complete. Immediately since scientists often evolved better versions of specific theories, a good example can be the theory of 40..... Thus, most importantly people have to recognize that science can be complex.



Since 1999

Answer keys:

- 27 A
- 28 C
- 29 B
- 30 D
- 31 B
- 32 YES
- 33 NOT GIVEN
- 34 NOT GIVEN
- 35 NO
- 36 word choices
- 37 colloquial terminology
- 38 observer
- 39 invariant description
- 40 general relativity



Mystery in Easter Island!

A

One of the world's most famous yet least visited archaeological sites, Easter Island is a small, hilly, now treeless island of volcanic origin. Located in the Pacific Ocean at 27 degrees south of the equator and some 2200 miles (3600 kilometers) off the coast of Chile, it is considered to be the world's most remote inhabited island. The island is, technically speaking, a single massive volcano rising over ten thousand feet from the Pacific Ocean floor. The island received its most well-known current name, Easter Island, from the Dutch sea captain Jacob Roggeveen who became the first European to visit Easter Sunday, April 5, 1722.

B

In the early 1950s, the Norwegian explorer Thor Heyerdahl popularized the idea that the island had been originally settled by advanced societies of Indians from the coast of South America. Extensive archaeological, ethnographic and linguistic research has conclusively shown this hypothesis to be inaccurate. It is now recognized that the original inhabitants of Easter Island are of Polynesian stock (DNA extracts from skeletons have confirmed this, that they most probably came from the Marquesas or Society Islands, and that they arrived as early as 318 AD (carbon dating of reeds from a grave confirms this). At the time of their arrival, much of the island was forested, was teeming with land birds, and was perhaps the most productive breeding site for seabirds in the Polynesia region. Because of the plentiful bird, fish and plant food sources, the human population grew and gave rise to a rich religious and artistic culture.

C

That culture's most famous features are its enormous stone statues called moai, at least 288 of which once stood upon massive stone platforms called ahu. There are some 250 of these ahu platforms spaced approximately one half mile apart and creating an almost unbroken line around the perimeter of the island. Another 600 moai statues, in various stages of completion, are scattered around the island, either in quarries or along ancient roads between the quarries and the coastal areas where the statues were most often erected. Nearly all the moai are carved from the tough stone of the Rano Raraku volcano. The average statue is 14 feet and 6 inches tall and weighs 14 tons. Some moai were as large as 33 feet and weighed more than 80 tons. Depending upon the size of the statues, it has been estimated that between 50 and 150 people were needed to drag them across the countryside on sleds and rollers made from the island's trees.

D

Scholars are unable to definitively explain the function and use of the moai statues. It is assumed that their carving and erection derived from an idea rooted in similar practices found elsewhere in Polynesia but which evolved in a unique way on Easter Island. Archaeological and iconographic analysis indicates that the statue cult was based on an ideology of male, lineage-based authority incorporating anthropomorphic symbolism. The statues were thus symbols of authority and power, both religious and political. But they

were not only symbols. To the people who erected and used them, they were actual repositories of sacred spirit. Carved stone and wooden objects in ancient Polynesian religions, when properly fashioned and ritually prepared, were believed to be charged by a magical spiritual essence called mana. The ahu platforms of Easter Island were the sanctuaries of the people, and the moai statues were the ritually charged sacred objects of those sanctuaries.

E

Besides its more well-known name, Easter Island is also known as Te-Pito-O-Te-Henua, meaning 'The Navel of the World', and as Mata-Ki-Te-Rani, meaning 'Eyes Looking at Heaven'. These ancient name and a host of mythological details ignored by mainstream archaeologists, point to the possibility that the remote island may once have been a geodetic marker and the site of an astronomical observatory of a long forgotten civilization. In his book, *Heaven's Mirror*, Graham Hancock suggests that Easter Island may once have been a significant scientific outpost of this antediluvian civilization and that its location had extreme importance in a planet-spanning, mathematically precise grid of sacred sites. Two other alternative scholars, Christopher Knight and Robert Lomas, have extensively studied the location and possible function of these geodetic markers. In their fascinating book, *Uriel's Machine*, they suggest that one purpose of the geodetic markers was as part of global network of sophisticated astronomical observatories dedicated to predicting and preparing for future commentary impacts and crystal displacement cataclysms.

F

In the latter years of the 20th century and the first years of the 21st century various writers and scientists have advanced theories regarding the rapid decline of Easter Island's magnificent civilization around the time of the first European contact. Principal among these theories, and now shown to be inaccurate, is that postulated by Jared Diamond in his book *Collapse: How Societies Choose to Fail or Survive*. Basically these theories state that a few centuries after Easter Island's initial colonization the resource needs of the growing population had begun to outpace the island's capacity to renew itself ecologically. By the 1400s the forests had been entirely cut, the rich ground cover had eroded away, the springs had dried up, and the vast flocks of birds coming to roost on the island had disappeared. With no logs to build canoes for offshore fishing, with depleted bird and wildlife food sources, and with declining crop yields because of the erosion of good soil, the nutritional intake of the people plummeted. First famine, then cannibalism, set in. Because the island could no longer feed the chiefs, bureaucrats and priests who kept the complex society running, the resulting chaos triggered a social and cultural collapse. By 1700 the population dropped to between one-quarter and one-tenth of its former number, and many of the statues were toppled during supposed "clan wars" of the 1600 and 1700s.

G

The faulty notions presented in these theories began with the racist assumptions of Thor Heyerdahl and have been perpetuated by writers, such as Jared Diamond, who do not



have sufficient archaeological and historical understanding of the actual events which occurred on Easter Island. The real truth regarding the tremendous social devastation which occurred on Easter Island is that it was a direct consequence of the inhumane behavior of many of the first European visitors, particularly the slavers who raped and murdered the islanders, introduced small pox and other diseases, and brutally removed the natives to mainland South America.



Questions 27-30

Choose the correct heading for paragraphs A-G from the list below.

Write the correct number, i-xi, in boxes 27-30 on your answer sheet.

List of Headings

- i The famous moai
- ii The status represented symbols of combined purposes
- iii The ancient spots which indicates scientific application
- iv The story of the name
- v Early immigrants, rise and prosperity
- vi The geology of Easter Island
- vii The begin of Thor Heyerdahl's discovery
- viii The countering explanation to the misconceptions politically manipulated
- ix Symbols of authority and power
- x The Navel of the World
- xi The norweigan invaders' legacy

Example

- Paragraph A
- 27 Paragraph B
- Paragraph C
- 28 Paragraph D
- 29 Paragraph E
- 30 Paragraph F

Answer

- iv
- i

Questions 31-36

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

In boxes 31-36 on your answer sheet write

- TRUE** if the statement is true
- FALSE** if the statement is false
- NOT GIVEN** if the information is not given in the passage

- 31 The first inhabitants of Easter Island are Polynesian, from the Marquesas or Society islands.
- 32 Construction of some moai statues on the island was not finished.
- 33 The Moai can be found not only on Easter Island but also elsewhere in Polynesia.
- 34 Most archeologists recognized the religious and astronomical functions for an ancient society.
- 35 The structures on Easter Island work as an astronomical outpost for extraterrestrial visitors.
- 36 The theory that depleted natural resources leading to the fail of Easter Island actual has a distorted perspective.

Questions 37-40

Complete the following summary of the paragraphs of Reading Passage, using **NO MORE THAN THREE WORDS** from the Reading Passage for each answer. Write your answers in boxes 37-40 on your answer sheet.

Many theories speculated that Easter Island's fall around the era of the initial European contact. Some say the resources are depleted by a 37.....; The erroneous theories began with a root of the 38..... advanced by some scholars. Early writers did not have adequate 39..... understandings to comprehend the true nature of events on the island. The social devastation was in fact a direct result of 40..... of the first European settlers.



Answer keys:

- 27 v
- 28 ii
- 27 iii
- 30 viii
- 31 NOT GIVEN
- 32 TRUE
- 33 FALSE
- 34 FALSE
- 35 NOT GIVEN
- 36 TRUE
- 37 growing population
- 38 racist assumption
- 39 archeological and historical
- 40 inhuman behavior

