READING PASSAGE 1

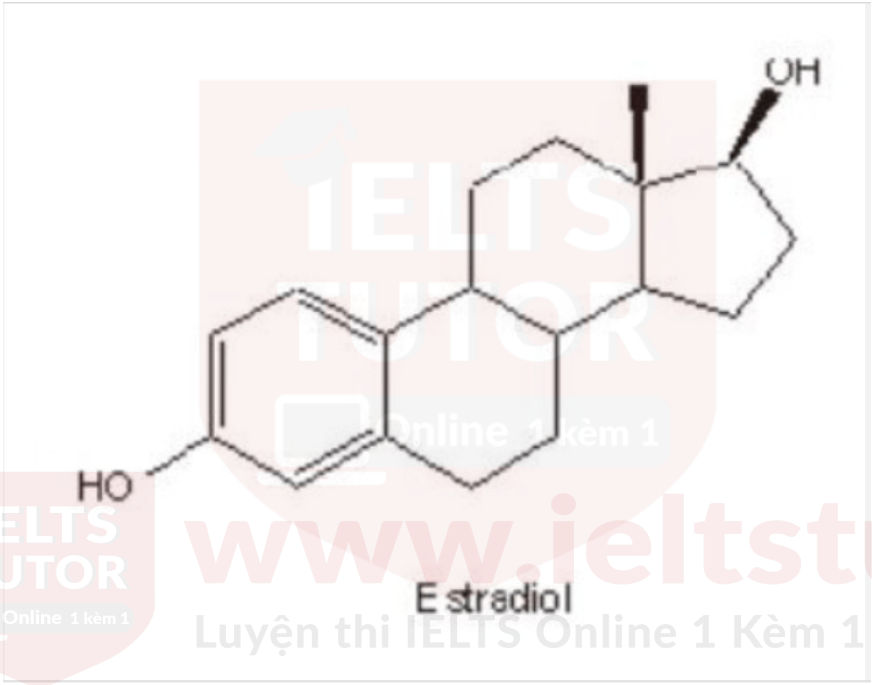
Serendipity: The Accidental Scientists (Đề thi IELTS READING 23/9/2023)

A. A paradox lies close to the heart of scientific discovery. If you know just what you are looking for, finding it can hardly count as a discovery, since it was fully anticipated. But if, on the other hand, you have no notion of what you are looking for, you cannot know when you have found it, and discovery, as such, is out of the question. In the philosophy of science, these extremes map onto the purist forms of deductivism and inductivism: In the former, the outcome is supposed to be logically contained in the premises you start with; in the latter, you are recommended to start with no expectations whatsoever and see what turns up.

B. As in so many things, the ideal position is widely supposed to reside somewhere in between these two impossible to-realize extremes. You want to have a good enough idea of what you are looking for to be surprised when you find something else of value, and you want to be ignorant enough of your end point that you can entertain alternative outcomes. Scientific discovery should, therefore, have an accidental aspect, but not too much of one. Serendipity is a word that expresses a position something like that. It's a fascinating word, and the late Robert King Merton—'the father of the sociology of science'—liked it well enough to compose its biography, assisted by the French cultural historian Elinor Barber.

C. Serendipity means a 'happy accident' or 'pleasant surprise'; specifically, the accident of finding something good or useful without looking for it. The first noted use of 'serendipity' in the English language was by Horace Walpole (1717-1792). In a letter to Horace Mann (dated 28 January 1754) he said he formed it from the Persian fairy tale The Three Princes of Serendip, whose heroes 'were always making

discoveries, by accidents and sagacity, of things they were not in quest of'. The name stems from Serendip, an old name for Sri Lanka.



Estradiol

D. Besides antiquarians, the other community that came to dwell on serendipity to say something important about their practice was that of scientists. Many scientists, including the Harvard physiologist Walter Cannon and, later, the British immunologist Peter Medawar, liked to emphasize how much of scientific discovery was unplanned and even accidental. One of Cannon's favorite examples of such serendipity is Luigi Galvani's observation of the twitching of dissected frogs' legs, hanging from a copper wire, when they accidentally touched an iron railing, leading to the discovery of 'galvanism'; another is Hans Christian Orsted's discovery of electromagnetism when he unintentionally brought a current-carrying wire parallel to a magnetic needle.

The context in which scientific serendipity was most contested and had its greatest resonance was that connected with the idea of planned science. The serendipitists were not all inhabitants of academic ivory towers. Two of the great early-20th-century American pioneers of industrial research—Willis Whitney and Irving Langmuir, both of General Electric—made much play of serendipity, in the course of arguing against overly rigid research planning.

E. Yet what Cannon and Medawar took as a benign method, other scientists found incendiary. To say that science had a significant serendipitous aspect was taken by some as dangerous denigration. If scientific discovery were really accidental, then what was the special basis of expert authority?

F. In this connection, the aphorism of choice came from no less an authority on scientific discovery than Louis Pasteur: “Chance favors the prepared mind.” Accidents may happen, and things may turn up unplanned and unforeseen, as one is looking for something else, but the ability to notice such events, to see their potential bearing and meaning, to exploit then occurrence and make constructive use of them these are the results of systematic mental preparation. What seems like an accident is just another form of expertise. On closer inspection, it is insisted, accident dissolves into sagacity.

G. In 1936, as a very young man, Merton wrote a seminal essay on “The Unanticipated Consequences of Purposive Social Action.” It is, he argued, the nature of social action that what one intends is rarely what one gets: Intending to provide resources for buttressing Christian religion, the natural philosophers of the Scientific Revolution laid the groundwork for secularism; people wanting to be alone with nature in Yosemite Valley wind up crowding one another. We just don’t know enough—and we can never know enough— to ensure that the past is an adequate guide to the future: Uncertainty

about outcomes, even of our best-laid plans, is endemic. All social action, including that undertaken with the best evidence and formulated according to the most rational criteria, is uncertain in its consequences.

Questions 28-33

Reading passage has seven paragraphs, A-G

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

Write the correct number, i-x, in boxes **28-33** on your answer sheet.

List of headings

i The origin of serendipity

ii Horace Walpole's fairy tale

iii Arguments against serendipity

iv Two basic knowledge in the paradox of scientific discovery

v The accidental evidences in and beyond science

vi organization's movement Opposing against the authority

vii Accident and mental preparation

viii Planned research and anticipated outcome

ix The optimum balance between the two extremes

28 Paragraph A

29 Paragraph B

30 Paragraph c

31 Paragraph D

32 Paragraph E

33 Paragraph F

Questions 34-36

Complete the summary below, using **NO MORE THAN TWO WORDS** from the Reading Passage for each answer.

Write your answers in boxes **34-36** on your answer sheet.

The word 'serendipity' was coined in the writing of **34**……to Horace Mann. He derived it from a **35…**……., the characters of which were always making fortunate discoveries by accident. The stem Serendip was a former name for **36**……..

Questions 37-40

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

Write the correct letter in boxes **37-40** on your answer sheet.

37 What does 'inductivism' mean in paragraph A?

A. observation without anticipation at the beginning

B. Looking for what you want in the premise

C. The expected discovery

D. The map we pursued

38 Scientific discovery should

A be much of accidental aspect

B be full of value

C. be between the two exhemes

D be skeptical

39 The writer mentions Luigi Galvani's observation to illustrate

A the cruelty of frog's dissection

B the happy accident in scientific discovery

c the practice of scientists

D the rigid research planning

40 Why does the writer mention the example in Yosemite Valley in paragraph G?

A To illustrate the importance of a systematic plan

B To illustrate there is an unpredictable reality towards expectation

C To illustrate the original anticipation

D To illustrate that intention of social action is totally meaningless

2 READING PASSAGE 2

Đề thi IELTS READING: New Zealand's early crafts and traditions (thi ngày 20/02/2023)

The first groups of people to discover New Zealand came from Polynesia. Exactly when these explorers arrived has often been a matter of debate, but today the general understanding is that it was during the 13th century that their canoes eventually landed on New Zealand's shores. In some ways the new country must have seemed like an ideal place to settle: the land was fertile, and thick forests provided firewood, shelter and building materials. Still, life would have been challenging for the different Polynesian tribes, who had to adapt to a new environment. The tribes only began to refer to themselves as Maori, meaning 'ordinary people', when Europeans in search of new opportunities began arriving in the 18th century. To the Maori, of course, the European settlers and sailors were not 'ordinary', but very strange.

It was not only a knowledge of canoe-building and navigation that the Polynesians brought to New Zealand. They were also skilled craftsmen. There is archaeological evidence that the tools they produced were of high quality and would have enabled tribes to plant and harvest crops. Craftsmen were also occupied with making weapons such as knives and axes, which were used for both construction and fighting. Interestingly, some crafts that had once been popular in Polynesian islands were no longer done in New Zealand, although researchers are unsure why. Pottery is an

example of this, despite the fact that the clay needed to make pots and bowls could easily be found in the new country.

The Maori word whakairo can be translated as 'decorative work' — this can refer to bone, wood and greenstone carving. Although Maori carvers were influenced by their Polynesian heritage, they developed their own style, including the curved patterns and spirals inspired by New Zealand plants. The same term can also apply to weaving; the crafting of, for example, woven baskets and mats all required knowledge and skill. Carving greenstone, or pounamu as it is called in Maori, was a long process, requiring great patience. Further, because of this mineral's rarity, any greenstone object, such as a piece of jewellery or cutting blade, was a prized possession. For that reason, it was the few people of high status rather than low-ranking members of a tribe who would possess such objects.

As New Zealand had no native mammals except for bats, dolphins and whales, Maori largely had to depend on plants to provide material for their clothing, including their cloaks. Weavers experimented with the inner bark of the houhere, the lacebark tree, but found it unsuitable. But the dried-out leaves and fibres of the flax plant provided a solution. Once a cloak had been woven from flax, it could be decorated. Borders might be dyed black or red, for example. In the case of superior ones made for chiefs or the more important members of a tribe, feathers from kiwi, pigeons or other native birds might be attached. All flax cloaks were rectangular in shape, so had no sleeves, and neither was a hood a feature of this garment. Short cloaks were fastened around a person's neck, and came only to the waist.

Pins made of bone, wood or greenstone allowed longer cloaks to be secured at the shoulder; these were a type that were often used for ceremonial occasions. Of course, the construction of the cloaks was influenced by the plant material available to Maori weavers. This meant that cloaks were loose-fitting, and while they protected wearers from New Zealand's strong sunshine, they were not useful during the winter months. A

cloak made from fur or wool could provide insulation from the cold, but not so a cloak made of flax.

The warriors of a tribe required a different kind of cloak to help protect them. To create these special cloaks, the tough fibres of the mountain cabbage tree were used instead. It is not clear to researchers what the entire process involved, but they believe the fibres were left to soak in water over a period of time in order to soften them and make them easier to weave together. Later, once the whole cloak had been constructed, it would be dyed black. To do this, Maori weavers covered it in a special kind of mud they had collected from riverbeds. This was rich in iron due to New Zealand's volcanic landscape. The particular advantage of these cloaks was that the tough cabbage tree fibres they were woven from could reduce the impact of spear tips during a fight with enemy tribes. It is fortunate that some cloaks from the 1800s still survive and can provide us with further insight into the materials and construction techniques that Maori craftsmen used.

Questions 1-6

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

In boxes 1-6 on your answer sheet, write:

TRUE If the statement agrees with the information

FALSE If the statement contradicts the information

NOT GIVEN If there is no information on this

1. It is now widely thought that humans reached New Zealand in the 13th century.
2. The first Europeans to come to New Zealand were keen to trade with Maori.
3. Members of Maori tribes were responsible for either tool- or weapon-making.
4. A craft that the Maori once practiced in New Zealand was making pottery.
5. Weaving baskets and mats was seen as a form of decorative.
6. It used to be common for everyone in a Maori tribe to wear greenstone jewellery.

Questions 7-13

Complete the notes below.

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

Write your answers in boxes 7-13 on your answer sheet.

Maori cloaks

	flax cloaks	**warrior cloaks**
methods of construction	Maori made flax cloaks by – weaving leaves and fibres – sometimes adding **7** ..... to the better cloaks	Weavers had to use **11** ..... to make cabbage tree fibres less stiff
appearance	Flax cloaks were	Mud containing **12** .....
	– rectangular in shape – designed without a **8** ..... – tied at either the wearer's neck or their **9**	was used to make the cloaks look black
good/bad points	Flax cloaks offered no **10** ..... during winter.	**13** ..... could not easily go through the cloaks tough fibres

3 READING PASSAGE 3

Đề thi IELTS READING: The Origins Of Laughter (thi ngày 23/06/2023)

A. We like to think that laughing is the height of human sophistication. Our big brains let us see the humour in a strategically positioned pun, an unexpected plot twist or a clever piece of wordplay. But while joking and wit are uniquely human inventions, laughter certainly is not. Other creatures, including chimpanzees, gorillas, and even rats, chuckle. Obviously, they don't crack up at Homer Simpson or titter at the boss's dreadful jokes, but the fact that they laugh in the first place suggests that sniggers and chortles have been around for a lot longer than we have. It points the way to the origins of laughter, suggesting a much more practical purpose than you might think.

B. There is no doubt that laughing typically involves groups of people. 'Laughter evolved as a signal to others – it almost disappears when we are alone,' says Robert Provine, a neuroscientist at the University of Maryland. Provine found that most laughter comes as a polite reaction to everyday remarks such as 'see you later', rather than anything particularly funny. And the way we laugh depends on the company we're keeping. Men tend to laugh longer and harder when they are with other men, perhaps as a way of bonding. Women tend to laugh more and at a higher pitch when men are present, possibly indicating flirtation or even submission.

C. To find the origins of laughter, Provine believes we need to look at the play. He points out that the masters of laughing are children, and nowhere is their talent more obvious than in the boisterous antics, and the original context plays,' he says. Well-known primate watchers, including Dian Fossey and Jane Goodall, have long argued that chimps laugh while at play. The sound they produce is known as a panting laugh. It seems obvious when you watch their behaviour – they even have the same ticklish spots as we do. But remove the context, and the parallel between

human laughter and a chimp's characteristic pant laugh is not so clear. When Provine played a tape of the pant laughs to 119 of his students, for example, only two guessed correctly what it was.

D. These findings underline how chimp and human laughter vary. When we laugh the sound is usually produced by chopping up a single exhalation into a series of shorter with one sound produced on each inward and outward breath. The question is: does this pant laughter have the same source as our own laughter? New research lends weight to the idea that it does. The findings come from Elke Zimmerman, head of the Institute for Zoology in Germany, who compared the sounds made by babies and chimpanzees in response to tickling during the first year of their life. Using sound spectrographs to reveal the pitch and intensity of vocalizations, she discovered that chimp and human baby laughter follow broadly the same pattern. Zimmerman believes the closeness of baby laughter to chimp laughter supports the idea that laughter was around long before humans arrived on the scene. What started simply as a modification of breathing associated with enjoyable and playful interactions has acquired a symbolic meaning as an indicator of pleasure.

E. Pinpointing when laughter developed is another matter. Humans and chimps share a common ancestor that lived perhaps 8 million years ago, but animals might have been laughing long before that. More distantly related primates, including gorillas, laugh, and anecdotal evidence suggests that other social mammals may do too. Scientists are currently testing such stories with a comparative analysis of just how common, laughter is, among animals. So far, though, the most compelling evidence for laughter beyond primates comes from research done by Jaak Panksepp from Bowling Green State University, Ohio, into the ultrasonic chirps produced by rats during play and in response to tickling.

F. All this still doesn't answer the question of why we laugh at all. One idea is that if laughter and tickling originated as a way of sealing the relationship between mother and child. Another is that the reflex response to tickling is protective, alerting us to the presence of crawling creatures that might harm us or compelling us to defend the parts of our bodies that are most vulnerable in hand-to-hand combat. But the idea that has gained most popular in recent years is that laughter in response to tickling is a way for two individuals to signal and test their trust in one another. This hypothesis starts from the observation that although a little tickle can be enjoyable if it goes on too long it can be torture. By engaging in a bout of tickling, we put ourselves at the mercy of another individual, and laughing is a signal that our laughter is what makes it a reliable signal of trust according to Tom Flamson, a laughter researcher at the University of California, Los Angeles. 'Even in rats, laughter, tickle, play, and trust are linked. Rats chirp a lot when they play, 'says Flamson. 'These chirps can be aroused by tickling. And they get bonded to us as a result, which certainly seems like a show of trust.'

G. We'll never know which animal laughed the first laugh, or why. But we can be sure it wasn't in response to a prehistoric joke. The funny thing is that while the origins of laughter are probably quite serious, we owe human laughter and our language-based humour to the same unique skill. While other animals pant, we alone can control our breath well enough to produce the sound of laughter. Without that control, there would also be no speech – and no jokes to endure.

Questions 1-6

Look at the following research findings (questions 1-6) and the list of people below. Match each finding with the correct person A, B, C or D. Write the correct letter, A, B, C or D, in boxes 1-6 on your answer sheet.

NB You may use any letter more than once.

A. Tom Flamson

B. Elke Zimmerman

C. Robert Provine

D. Jaak Panksepp

1. Similar sounds of laughter are produced by Babies and chimps.

2. Laughter Pan is not produced by primates as the only animal.

3. Laughter means that we feel safe and easy with others.

4. Instead of humor laughter is a response to a polite situation.

5. Animal laughter evolved before human laughter

6. Laughter can be defined as a social activity.

Questions 7-10

Complete the summary using the list of words, A-K, below. Write the correct letter, A-K, in boxes 7-10 on your answer sheet.

Some researchers believe that laughter first evolved out of 7_____ The investigation has revealed that human and chimp laughter may have the same 8_____ Besides, scientists have been aware that 9_____ laugh, however, it now seems that laughter might be more widespread than once we thought. Although the reasons why humans started to laugh are still unknown, it seems that laughter may result from the 10_____ we feel with another person.

A. evolution

B. chirps

C. origins

D. voice

E. confidence

F. rats

G. primates

H. response

I. play

J. children

K. tickling

Questions 11-13

Do the following statements agree with the information given in Reading Passage 1? In boxes 11-13 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

11. Both men and women laugh more when they are with members of the same sex.

12. Primates lack sufficient breath control to be able to produce laughs the way humans do.

13. Chimpanzees produce laughter in a wider range of situations than rats do.

4. Passage 4

Đề thi IELTS READING: Learning by Examples (thi ngày 24/06/2023)

A. Learning Theory is rooted in the work of Ivan Pavlov, the famous scientist who discovered and documented the principles governing how animals (humans included) learn in the 1900s. Two basic kinds of learning or conditioning occur, one of which is famously known as the classical conditioning. Classical conditioning happens when an animal learns to associate a neutral stimulus (signal) with a stimulus that has intrinsic

meaning based on how closely in time the two stimuli are presented. The classic example of classical conditioning is a dog's ability to associate the sound of a bell (something that originally has no meaning to the dog) with the presentation of food (something that has a lot of meaning to the dog) a few moments later. Dogs are able to learn the association between bell and food, and will salivate immediately after hearing the bell once this connection has been made. Years of learning research have led to the creation of a highly precise learning theory that can be used to understand and predict how and under what circumstances most any animal will learn, including human beings, and eventually help people figure out how to change their behaviours.

B. Role models are a popular notion for guiding child development, but in recent years very interesting research has been done on learning by examples in other animals. If the subject of animal learning is taught very much in terms of classical or operant conditioning, it places too much emphasis on how we allow animals to learn and not enough on how they are equipped to learn. To teach a course of mine, I have been dipping profitably into a very interesting and accessible compilation of papers on social learning in mammals, including chimps and human children, edited by Heyes and Galef (1996).

C. The research reported in one paper started with a school field trip to Israel to a pine forest where many pine cones were discovered, stripped to the central core. So the investigation started with no weighty theoretical intent, but was directed at finding out what was eating the nutritious pine seeds and how they managed to get them out of the cones. The culprit proved to be the versatile and athletic black rat,(Rattus rattus), and the technique was to bite each cone scale off at its base, in sequence from base to tip following the spiral growth pattern of the cone.

D. Urban black rats were found to lack the skill and were unable to learn it even if housed with experienced cone strippers. However, infants of urban mothers cross-fostered by stripper mothers acquired the skill, whereas infants of stripper

mothers fostered by an urban mother could not. Clearly the skill had to be learned from the mother. Further elegant experiments showed that naive adults could develop the skill if they were provided with cones from which the first complete spiral of scales had been removed; rather like our new photocopier which you can work out how to use once someone has shown you how to switch it on. In the case of rats, the youngsters take cones away from the mother when she is still feeding on them, allowing them to acquire the complete stripping skill.

E. A good example of adaptive bearing we might conclude, but let's see the economies. This was determined by measuring oxygen uptake of a rat stripping a cone in a metabolic chamber to calculate energetic cost and comparing it with the benefit of the pine seeds measured by calorimeter. The cost proved to be less than 10% of the energetic value of the cone. An acceptable profit margin.

F. A paper in 1996, Animal Behaviour by Bednekoff and Baida, provides a different view of the adaptiveness of social learning. It concerns the seed caching behaviour of Clark's Nutcracker (Nucifraga columbiana) and the Mexican Jay (Aphelocoma ultramarina). The former is a specialist, caching 30,000 or so seeds in scattered locations that it will recover over the months of winter; the Mexican Jay will also cache food but is much less dependent upon this than the Nutcracker. The two species also differ in their social structure: the Nutcracker being rather solitary while the Jay forages in social groups.

G. The experiment is to discover not just whether a bird can remember where it hid a seed but also if it can remember where it saw another bird hide a seed. The design is slightly comical with a cacher bird wandering about a room with lots of holes in the floor hiding food in some of the holes, while watched by an observer bird perched in a cage. Two days later, cachers and observers are tested for their discovery rate against an estimated random performance. In the role of cacher, not only the Nutcracker but also the less specialised Jay performed above chance; more surprisingly, however, jay observers were as successful as jay cachers whereas nutcracker observers did no

better than chance. It seems that, whereas the Nutcracker is highly adapted at remembering where it hid its own seeds, the social living Mexican Jay is more adept at remembering, and so exploiting, the caches of others.

Questions 1-4

Reading Passage 1 has seven paragraphs A-G.

Which paragraph contains the following information?

Write the correct letter A-G in boxes 1-4 on your answer sheet.

1. A comparison between rats' learning and human learning
2. A reference to the earliest study in animal learning
3. The discovery of who stripped the pine cone
4. A description of a cost-effectiveness experiment

Questions 5-8

Do the following statements agree with the information given in Reading Passage? In boxes 5-8 on your answer sheet, write:

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

5. The field trip to Israel was to investigate how black rats learn to strip pine cones.
6. The pine cones were stripped from bottom to top by black rats.
7. It can be learned from other relevant experiences to use a photocopier.
8. Stripping the pine cones is an instinct of the black rats.

Questions 9-13

Complete the summary below using words from the box. Write your answers in boxes 9-13 on your answer sheet.

While the Nutcracker is more able to cache seeds, the Jay relies 9 ..... on caching food and is thus less specialised in this ability, but more 10 ..... To study their

behaviour of caching and finding their caches, an experiment was designed and carried out to test these two birds for their ability to remember where they hid the seeds.

In the experiment, the cacher bird hid seeds in the ground while the other 11 ..... As a result, the Nutcracker and the Mexican Jay showed different performance in the role of 12 ..... at finding the seeds - the observing 13 ..... didn't do as well as its counterpart.

less

social

remembered

Nutcracker

more

cacher

watched

solitary

observer

Jay

5. Passage 5

Đề thi IELTS READING: Classifying Societies (thi ngày 24/06/2023)

A. Although humans have established many types of societies throughout history sociologists and anthropologists tend to classify different societies according to the degree to which different groups within a society have unequal access to advantages such as resources, prestige or power, and usually refer to four basic types of societies. From least to most socially complex they are clans, tribes, chiefdoms and states.

Clan

B. These are small-scale societies of hunters and gatherers, generally of fewer than 100 people, who move seasonally to exploit wild (undomesticated) food resources. Most surviving hunter-gatherer groups are of this kind, such as the Hadza of Tanzania of the San of southern Africa. Clan members are generally kinsfolk, related by descent or marriage. Clans lack formal leaders, so there are no marked economic differences or disparities in status among their members.

C. Because clans are composed of mobile groups of hunter-gatherers, their sites consist mainly of seasonally occupied camps, and other smaller and more specialised sites. Among the latter are kill or butchery sites – locations where large mammals are killed and sometimes butchered-and work sites, where tools are made or other specific activities carried out. The base camp of such a group may give evidence of rather insubstantial dwellings or temporary shelters, along with the debris of residential occupation.

Tribe

D. These are generally larger than mobile hunter-gatherer groups, but rarely number more than a few thousand, and their diet or subsistence is based largely on cultivated plants and domesticated animals. Typically, they have settled farmers, but they may be nomadic with a very different, mobile economy based on the intensive exploitation of livestock. These are generally multi-community societies, with the individual communities integrated into the large society through kinship ties. Although some tribes have officials and even a “capital” or seat of government, such officials lack the economic base necessary for effective use of power.

E. The typical settlement pattern for tribes is one of settled agricultural homesteads or villages. Characteristically, no one settlement dominates any of the others in the region. Instead, the archaeologist finds evidence for isolated, permanently occupied houses or for permanent villages. Such villages may be made up of a collection of free-standing houses, like those of the first farms of the Danube valley in Europe. Or they may be

clusters of buildings grouped together, for example, the pueblos of the American Southwest, and the early farming village or the small town of Catalhoyuk in modern Turkey.

Chiefdom

F. These operate on the principle of ranking-differences in social status between people. Different lineages (a lineage is a group claiming descent from a common ancestor) are graded on a scale of prestige, and the senior lineage, and hence the society as a whole, is governed by a chief. Prestige and rank are determined by how closely related one is to the chief, and there is no true stratification into classes. The role of the chief is crucial.

G. Often, there is local specialization in craft products, and surpluses of these and of foodstuffs are periodically paid as an obligation to the chief. He uses these to maintain his retainers and may use them for redistribution to his subjects. The chiefdom generally has a center of power, often with temples, residences of the chief and his retainers, and craft specialists. Chiefdoms vary greatly in size, but the range is generally between about 5000 and 20,000 persons.

Early State

H. These preserve many of the features of chiefdoms, but the ruler (perhaps a king or sometimes a queen) has explicit authority to establish laws and also to enforce them by the use of a standing army. Society no longer depends totally upon kin relationships: it is now stratified into different classes. Agricultural workers and the poorer urban dwellers form the lowest classes, with the craft specialists above, and the priests and kinsfolk of the ruler higher still. The functions of the ruler are often separated from those of the priest: the palace is distinguished from the temple. The society is viewed as a territory owned by the ruling lineage and populated by tenants who have an obligation to pay taxes. The central capital houses a bureaucratic administration of officials; one of their principal purposes is to collect revenue (often in the form of taxes and tolls) and

distribute it to government, army and craft specialists. Many early states developed complex redistribution systems to support these essential services.

I. This rather simple social typology, set out by Elman Service and elaborated by William Sanders and Joseph Marino, can be criticised, and it should not be used unthinkingly. Nevertheless, if we are seeking to talk about early societies, we must use words and hence concepts to do so. Service's categories provide a good framework to help organise our thoughts.

Questions 1-7

Do the following statements agree with the information given in Reading Passage 1? In boxes 1-7 on your answer sheet, write:

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

1. There's little economic difference between members of a clan.
2. The farmers of a tribe grow a wide range of plants.
3. One settlement is more important than any other settlements in a tribe.
4. A member's status in a chiefdom is determined by how much land he owns.
5. There are people who craft goods in chiefdoms.
6. The king keeps the order of a state by keeping a military.
7. Bureaucratic officers receive higher salaries than other members.

Questions 8-13

Answer the questions below. Choose NO MORE THAN TWO WORDS from the passage for each answer. Write your answers in boxes 8-13 on your answer sheet.

8. What is made at the clan work sites?
9. What is the other way of life tribes besides settled farming?
10. How are Catalhoyuk's housing units arranged?

11. What does a chief give to his subjects as rewards besides crafted goods?

12. What is the largest possible population of a chiefdom?

13. Which group of people is at the bottom of an early state but higher than the farmers?

6. Passage 6

Đề thi IELTS READING: The Pursuit Of Happiness (thi ngày 20/06/2023)

A. In the late 1990s, psychologist Martin Seligman of the University of Pennsylvania urged colleagues to observe optimal moods with the same kind of focus with which they had for so long studied illnesses: we would never learn about the full range of human functions unless we knew as much about mental wellness as we do about mental illness. A new generation of psychologists built up a respectable body of research on positive character traits and happiness-boosting practices. At the same time, developments in neuroscience provided new clues to what makes us happy and what that looks like in the brain. Self-appointed experts took advantage of the trend with guarantees to eliminate worry, stress, dejection and even boredom. This happiness movement has provoked a great deal of opposition among psychologists who observe that the preoccupation with happiness has come at the cost of sadness, an important feeling that people have tried to banish from their emotional repertoire. Allan Horwitz of Rutgers laments that young people who are naturally weepy after breakups are often urged to medicate themselves instead of working through their sadness. Wake Forest University's Eric Wilson fumes that the obsession with happiness amounts to a "craven disregard" for the melancholic perspective that has given rise to the greatest works of art. "The happy man," he writes, "is a hollow man."

B. After all, people are remarkably adaptable. Following a variable period of adjustment, we bounce back to our previous level of happiness, no matter what happens to us. (There are some scientifically proven exceptions, notably suffering the unexpected loss of a job or the loss of a spouse. Both events tend to permanently knock people back a step.) Our adaptability works in two directions. Because we are so adaptable, points out Professor Sonja Lyubomirsky of the University of California, we quickly get used to

many of the accomplishments we strive for in life, such as landing the big job or getting married. Soon after we reach a milestone, we start to feel that something is missing. We begin coveting another worldly possession or eyeing a social advancement. But such an approach keeps us tethered to a treadmill where happiness is always just out of reach, one toy or one step away. It's possible to get off the treadmill entirely by focusing on activities that are dynamic surprising, and attention-absorbing, and thus less likely to bore us than, say, acquiring shiny new toys.

C. Moreover, happiness is not a reward for escaping pain. Russ Harris, the author of The Happiness Trap, calls popular conceptions of happiness dangerous because they set people up for a "struggle against reality". They don't acknowledge that real life is full of disappointments, loss, and inconveniences. "If you're going to live a rich and meaningful life," Harris says, "you're going to feel a full range of emotions." Action toward goals other than happiness makes people happy. It is not crossing the finish line that is most rewarding, it is anticipating achieving the goal. University of Wisconsin neuroscientist Richard Davidson has found that working hard toward a goal, and making progress to the point of expecting a goal to be realised, not only activates positive feelings but also suppresses negative emotions such as fear and depression.

D. We are constantly making decisions, ranging from what clothes to put on, to whom we should marry, not to mention all those flavors of ice cream. We base many of our decisions on whether we think a particular preference will increase our well-being. Intuitively, we seem convinced that the more choices we have, the better off we will ultimately be. But our world of unlimited opportunity imprisons us more than it makes us happy. In what Swarthmore psychologist Barry Schwartz calls "the paradox of choice," facing many possibilities leaves us stressed out – and less satisfied with whatever we do decide. Having too many choices keeps us wondering about all the opportunities missed.

E. Besides, not everyone can put on a happy face. Barbara Held, a professor of psychology at Bowdoin College, rails against "the tyranny of the positive attitude". "Looking on the bright side isn't possible for some people and is even counterproductive" she insists. "When you put pressure on people to cope in a way that doesn't fit them, it not only doesn't work, it makes them feel like a failure on top of already feeling bad." The one-size-fits-all approach to managing emotional life is misguided, agrees Professor Julie Norem, author of The Positive Power of Negative Thinking. In her research, she has shown that the defensive pessimism that anxious people feel can be harnessed to help them get things done, which in turn makes them happier. A naturally pessimistic architect, for example, can set low expectations for an upcoming presentation and review all of the bad outcomes that she's imagining, so that she can prepare carefully and increase her chances of success.

F. By contrast, an individual who is not living according to their values, will not be happy, no matter how much they achieve. Some people, however, are not sure what their values are. In that case, Harris has a great question: "Imagine I could wave a magic wand to ensure that you would have the approval and admiration of everyone on the planet, forever. What, in that case, would you choose to do with your life?" Once this has been answered honestly, you can start taking steps toward your ideal vision of yourself. The actual answer is unimportant, as long as you're living consciously. The state of happiness is not really a state at all. It's an ongoing personal experiment.

Questions 1-6

Reading Passage 1 has six paragraphs, A-F.

Which paragraph mentions the following?

Write the correct letter, A-F, in boxes 1-6 on your answer sheet

NB You may use any letter more than once.

1. the need for individuals to understand what really matters to them

2. tension resulting from a wide variety of alternatives

3. the hope of success as a means of overcoming unhappy feelings.

4. people who call themselves specialists.

5. human beings' capacity for coping with change

6. doing things which are interesting in themselves

Questions 7-8

Choose TWO letters, A-E. Write the correct letters in boxes 7 and 8 on your answer sheet.

Which TWO of the following people argue against aiming for constant happiness?

A. Martin Seligman

B. Eric Wilson

C. Sonja Lyubomirsky

D. Russ Harris

E. Barry Schwartz

Questions 9-10

Choose TWO letters, A-E. Write the correct letters in boxes 9 and 10 on your answer sheet.

Which TWO of the following beliefs are identified as mistaken in the text?

A. Inherited wealth brings less happiness than earned wealth.

B. Social status affects our perception of how happy we are.

C. An optimistic outlook ensures success.

D. Unhappiness can and should be avoided.

E. Extremes of emotion are normal in the young.

Questions 11-13

Complete the sentences below. Choose NO MORE THAN ONE WORD from the passage for each answer. Write your answers in boxes 11-13 on your answer sheet

11. In order to have a complete understanding of how people's minds work, Martin Seligman suggested that research should examine our most positive …… as closely as it does our psychological problems.

12. Soon after arriving at a …….. in their lives, people become accustomed to what they have achieved and have a sense that they are lacking something.

13. People who are …… by nature are more likely to succeed if they make a thorough preparation for a presentation.

7. Passage 7

Đề thi IELTS READING: Australia's Megafauna Controversy (thi ngày 20/06/2023)

Just how long did humans live side by side with megafauna in Australia? Barry Brook, Richard Gillespie and Paul Martin dispute previous claims of a lengthy coexistence.

Over the past 50 millennia, Australia has witnessed the extinction of many species of large animals, including a rhinoceros-sized wombat and goannas the size of crocodiles. Debate about the possible cause of these extinctions has continued for more than 150 years and one the crucial questions raised is how long humans and megafauna coexisted in Australia. We need to know the overlap of time to make an informed choice between the two main theories regarding the causes of these extinctions. If humans and megafauna coexisted for a protracted period then climate change is the more likely cause. However, if the megafauna became extinct shortly after the arrival of humans, then humans are the likely culprits

The archaeological site at Cuddie Springs in eastern Australia appears to be well preserved. This dusty claypan holds within its sediments a rich cache of flaked stone and seed-grinding tools, and side by side with these clear signals of human culture are the bones of a dozen or more species of megafauna. Drs Judith Field and Stephen Wroe of the University of Sydney, who excavated the site, claim that it provides unequivocal evidence of a long overlap of humans and megafauna, and conclude that aridity leading up to the last Ice Age brought about their eventual demise. In the long-standing explanation of this site, artefacts such as stone tools and extinct animals remain were deposited over many thousands of years in an ephemeral lake- a body of water existing for a relatively short time - and remained in place and undisturbed until the present day.

There is no disputing the close association of bones and stones at Cuddie Springs, as both are found 1 to 1.7 metres below the modern surface. The dating of these layers is accurate: ages for the sediments were obtained through radiocarbon dating of charcoal fragments and luminescence dating of sand grains from the same levels (revealing when a sample was last exposed to sunlight). Intriguingly, some of the stone show surface features indicating their use for processing plants, and a few even have well-preserved blood and hair residues suggesting they were used in butchering animals.

But is the case proposed by Field aside Wroe clear-cut? We carried out a reanalyse of the scientific data from Cuddie Springs that brings into question their conclusions. The amount of anthropological evidence found at the site is remarkable: we estimate there are more than 3 tonnes of charcoal and more than 300 tonnes of stone buried there. Field and Wroe estimate that there are approximately 20 million artefacts. This plethora of tools is hard to reconcile with a site that was only available for occupation when the lake was dry. Furthermore, no cultural features such as oven pits have been discovered. If the sediment layers have remained undisturbed since being laid down, as Field and Wroe contend, then the ages of those sediments should increase with depth. However, our analysis revealed a number of inconsistencies.

First, the charcoal samples are all roughly 36,000 years old. Second, sand in the two upper levels is considerably younger than charcoal from the same levels. Third, Field and Wroe say that the tools and seed-grinding stones used for plant and animal processing are accient, yet they are very similar to implements found elsewhere that were in use only a few thousand years ago. Also interest is the fact that a deep drill core made a mere 60 metres from the site recovered no stone artefact or fossil bones whatsoever. These points suggests strongly that the sediments have been

moved about and some of the old charcoal has been re-deposited in younger layers. Indeed, one sample of cow bone found I metre below the surface came from sediments where charcoal dated at 6,000 and 23,000 years old is mixed with 17,000-year-old sand. The megafauna bones themselves have not yet dated, although new technological developments make this a possibility in the near future.

We propose that the archaeologists have actually been sampling the debris carried by ancient flood channels beneath the site, including charcoal transported from bushfires that intermittently occurred within the catchment. Flood events more likely explain the accumulation of megafauna remains, and could have mixed old bones With fresh deposits. European graziers also disturbed the site in 1876 by constructing a well to provide water their cattle. Given the expense of well-digging, we speculate that the graziers made sure it was protected from the damage caused by cattle hooves by lining the surface with small stones collected from further afield, including prehistoric quarries. This Idea Is consistent with the thin layer of stones spread over a large area, with cattle occasionally breaking through the gravel surface and forcing the stone and even cattle bones deeper into the waterlogged soil.

The lack of conclusive evidence that humans and megafauna coexisted for a lengthy period casts doubt on Field and Wroe's assertion that climate change was responsible for the extinction of Australia's megafauna. However, we do not suggest that newly arrived, well-armed hunters systematically slaughtered all the large beasts they encountered. Recent studies based on the biology of modern-day large

Mammals, combined with observations of people who still practise a traditional huntergatherer lifestyle, reveal an unexpected paradox and suggest a further

possible explanation as to what happened. Using a mathematical model, It was found that a group of 10 people killing only one juvenile Diprotodon each year would be sufficient to bring about the extinction of that spaces within 1,000 years. This suggests that here, as in other parts of the word, the arrival of humans in lands previously inhabited only by animals created a volatile combination in which large animals fared badly.

Note: The Diprotodon (a rhinoceros-sized wombat), an example of Australia's now extinct megafauna

Questions 1-4

Do the following statements agree with the claims of the writer in Reading Passage? In boxes 1-4 on your answer sheet, write

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

1. Field and Wroe argue that findings at the Cuddie Springs site show that people lived in this area at the same time as megafauna.

2. Field and Wroe believe it is likely that smaller megafauna species survived the last Ice Age

3. The writers believe that the dating of earth up to 1.7m below the present surface at Cuddie Springs is unreliable.

4. Some artefacts found at Cuddie Springs were preserved well enough to reveal their function

Questions 5-9

Complete the summary using the list of words, A-I, below. Write the correct letter, A-I in boxes 5-9 on your answer sheet.

The writers' arguments against Field and Wroe's analysis of the scientific data from Cuddie Springs.

One objection to Field and Wroe's interpretation is the large quantity of charcoal, 5 ..... and artefacts found at Cuddie Springs. Such large numbers of artefacts would impossible if the area had been covered with 6 .....for a period. There is also a complete lack of man-made structures, for instance those used for 7 .....

Other evidence that doubt on Field and Wroe's claim is the fact that while some material in the highest levels of sediment is 36,000 years old, the 8 .....in the same levels is much more recent. The tools used to process plants and animals may also be newer than Field and Wroe believe. Further evidence against human occupation of the area is the absence of tools and 9 .....a short distance away.

A. seeds

B. stone

C. sand

D. cooking

E. deep drill core

F. water

G. fossil bones

H. sediment

I. storage

Questions 10-14

Choose the letter, A, B, c or D. Write the correct letter in boxes 10-14 on your answer sheet.

10. What conclusions did the writers reach about the inconsistencies in the data from Cuddie Springs?

A. The different layers of sediment have been mixed over time.

B. The sand evidence is unhelpful and should be disregarded.

C. The area needs to be re-examined when technology improves.

D. The charcoal found in the area cannot be dated.

11. According to the writers, what impact could a natural phenomenon have had on this site?

A. Floods could have caused the death of the megafauna.

B. Floods could have disturbed the archaeological evidence.

C. Bushfires could have prevented humans from settling in the area for any length of time

D. Bushfires could have destroyed much of the evidence left by megafauna and humans.

12. What did the writers speculate about the people who lived at this site in 1876?

A. They bred cattle whose bones could have been confused with megafauna

B. They found that the soil was too waterlogged for farming

C. They allowed cattle to move around freely at the site

D. They brought stones there from another area

13. In the final paragraph what suggestion do the writers hide about Australia's megafauna?

A. A rapid change in climate may have been responsible for the extinction of the megafauna.

B. Megafauna could have died out as a result of small numbers being killed year after year.

C. The population of humans at that time was probably insufficient to cause the extinction of the megafauna.

D. The extinction of ancient animals should not be compared to that of modern-day species.

14. Which of the following best represents the writers' criticism of Field and Wroe?

A. Their methods were not well thought out

B. Their excavations did not go deep enough.

C. Their technology failed to obtain precise data.

D. Their conclusions were based on inconsistent data.

8. Passage 8

Đề thi IELTS READING: A song on the brain (thi ngày 05/06/2023)

Some songs just won't leave you alone. But this may give us clues about how our brain works

A. Everyone knows the situation where you can't get a song out of your head. You hear a pop song on the radio - or even just read the song's title and it haunts you for hours, playing over and over in your mind until you're heartily sick of it. The condition now even has a medical name 'song-in-head syndrome'.

B. But why does the mind annoy us like this? No one knows for sure, but it's probably because the brain is better at holding onto information than it is at knowing what information is important. Roger Chaffin, a psychologist at the University of Connecticut says, 'It's a manifestation of an aspect of memory which is normally an asset to us, but in this instance it can be a nuisance.'

C. This eager acquisitiveness of the brain may have helped our ancestors remember important information in the past. Today, students use it to learn new material, and musicians rely on it to memorise complicated pieces. But when this useful function goes awry it can get you stuck on a tune. Unfortunately, superficial, repetitive pop tunes are, by their very nature, more likely to stick than something more inventive.

D. The annoying playback probably originates in the auditory cortex. Located at the front of the brain, this region handles both listening and playback of music and other sounds. Neuroscientist Robert Zatorre of McGill University in Montreal proved this some years ago when he asked volunteers to replay the theme from the TV show

Dallas in their heads. Brain imaging studies showed that this activated the same region of the auditory cortex as when the people actually heard the song.

E. Not every stored musical memory emerges into consciousness, however. The frontal lobe of the brain gets to decide which thoughts become conscious and which ones are simply stored away. But it can become fatigued or depressed, which is when people most commonly suffer from song-in-head syndrome and other intrusive thoughts, says Susan Ball, a clinical psychologist at Indiana University School of Medicine in Indianapolis. And once the unwanted song surfaces, it's hard to stuff it back down into the subconscious. 'The more you try to suppress a thought, the more you get it,' says Ball. 'We call this the pink elephant phenomenon. Tell the brain not to think about pink elephants, and it's guaranteed to do so,' she says.

F. For those not severely afflicted, simply avoiding certain kinds of music can help. 'I know certain pieces that are kind of "sticky" to me, so I will not play them in the early morning for fear that they will run around in my head all day,' says Steven Brown, who trained as a classical pianist but is now a neuroscientist at the University of Texas Health Science Center at San Antonio. He says he always has a song in his head and, even more annoying, his mind never seems to make it all the way through. 'It tends to involve short fragments between, say, 5 or 15 seconds. They seem to get looped, for hours sometimes,' he says.

G. Brown's experience of repeated musical loops may represent a phenomenon called 'chunking', in which people remember musical phrases as a single unit of memory, says Caroline Palmer, a psychologist at Ohio State University in Columbus. Most listeners have little choice about what chunks they remember. Particular chunks may be especially 'sticky' if you hear them often or if they follow certain

predictable patterns, such as the chord progression of rock 'n' roll music. Palmer's research shows that the more a piece of music conforms to these patterns, the easier it is to remember. That's why you're more likely to be haunted by the tunes of pop music than by those of a classical composer such as J. S. Bach.

H. But this ability can be used for good as well as annoyance. Teachers can tap into memory reinforcement by setting their lessons to music. For example, in one experiment students who heard a history text set as the lyrics to a catchy song remembered the words better than those who simply read them, says Sandra Calvert, a psychologist at Georgetown University in Washington DC.

I. This sort of memory enhancement may even explain the origin of music. Before the written word could be used to record history, people memorised it in songs, says Leon James, a psychologist at the University of Hawaii. And music may have had an even more important role. 'All music has a message.' he says. 'This message functions to unite society and to standardise the thought processes of people in society.'

Questions 1-3

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

Write your answers in boxes 1-3 on your answer sheet.

1. The writer says that song-in-head syndrome' may occur because the brain

A. confuses two different types of memory.

B. cannot decide what information it needs to retain.

C. has been damaged by harmful input.

D. cannot hold onto all the information it processes.

2. A tune is more likely to stay in your head if

A. it is simple and unoriginal.

B. you have musical training.

C. it is part of your culture.

D. you have a good memory.

3. Robert Zatorre found that a part of the auditory cortex was activated when volunteers

A. listened to certain types of music.

B. learned to play a tune on an instrument.

C. replayed a piece of music after several years.

D. remembered a tune they had heard previously.

Questions 4-7

Look at the following theories (Questions 4-7) and the list of people below.

Match each theory with the person it is credited to.

Write the correct letter A-F in boxes 4-7 on your answer sheet.

4. The memorable nature of some tunes can help other learning processes.

5. Music may not always be stored in the memory in the form of separate notes.

6. People may have started to make music because of their need to remember things.

7. Having a song going round your head may happen to you more often when one part of the brain is tired.

List of people

A. Roger Chaffin

B. Susan Ball

C. Steven Brown

D. Caroline Palmer

E. Sandra Calvert

F. Leon James

Questions 8-13

Reading Passage 321 has nine paragraphs labelled A-I.

Which paragraph contains the following information?

Write the correct letter A-I in boxes 8-13 on your answer sheet.

NB. You may use any letter more than once.

8. a claim that music strengthens social bonds

9. two reasons why some bits of music tend to stick in your mind more than others

10. an example of how the brain may respond in opposition to your wishes
11. the name of the part of the brain where song-in-head syndrome begins
12. examples of two everyday events that can set off song-in-head syndrome
13. a description of what one person does to prevent song-in-head syndrome

9. Passage 9

Đề thi IELTS READING: The Tuatara of New Zealand (thi ngày 05/06/2023)

Tuatara are lizard-like reptiles, found only in New Zealand. They are representative of ancient life forms Tuatara are the only living representatives of an ancient lineage of reptiles called Sphenodontia, which is over 250 million years old. Because tuatara still look like fossils of reptiles that lived during the age of dinosaurs, they are often called living fossils. Now just two species of tuatara survive, and only in New Zealand. One is the Brothers Island tuatara which, until recent re-introductions to sanctuaries (safe places for wildlife), only survived on North Brother Island. The other species is the common tuatara, which survives on many other offshore islands. Although the tuatara species appear similar, they have genetic differences. Tuatara bones have been found in many parts of New Zealand. Where dated, they are usually a few hundred to 5,000 years old. It is not known whether these bones are from the two living species or other species that are now extinct.

Many anatomical features distinguish tuatara from other living reptiles - for example, they have a defining pattern of openings in the skull and a unique type of haemoglobin in the blood, and males have no external reproductive organ. Adults are between 30 and 75 centimetres long, and weigh between 250 and 1.200 grams. Males are larger than females, and have more developed spines in the crest along the neck, back and tail.

The male tuatara courts the female by approaching her with a proud walk. Tuatara mate in late summer, and the female usually lays 6-10 eggs the following spring, in a shallow nest at ground level. She may guard the nest for a few nights, then return to her burrow underground. The eggs incubate for about a year, so hatchlings emerge about the time that eggs are being laid the following season. Evidence indicates the gender of tuatara hatchlings is determined by both genetic and environmental factors. It is said that it is more likely for warmer eggs to produce male tuatara, and cooler eggs to produce females. The hatchlings receive no parental care and need to find their own food.

Tuatara live for a relatively long time, reaching reproductive maturity at about 15 years, and may breed for many decades. Their maximum lifespan is not known for certain, but many tuatara have reached 80 years still looking vigorous and healthy. Tuatara live in underground burrows and are more active at night, but will come out during the day to bask in the sun. Both sexes are territorial, and males aggressively defend their territory by posing and fighting if necessary. Teeth are their main weapons, and a bite can cause serious injury. Tuatara are carnivorous, eating invertebrates, lizards and the baby seabirds with which they often share burrows.

Tuatara were once widespread and abundant on the New Zealand mainland, but when Polynesian settlers arrived in New Zealand, in about 1250-1300 AD, they brought with them Pacific rats which killed tuatara. By the time of European settlement, in the 1840s, tuatara were almost extinct on the New Zealand mainland. Some islands provided temporary havens, but soon these too began to be invaded by rats and other mammalian predators.

Gradually tuatara became restricted to 32 nearshore islands. Many of these islands were tiny, some as small as only one hectare. A few, such as the Poor Knights common tuatara lives on islands off the north-eastern coast of New Zealand, and on some islands in Cook Strait. The Brothers Island tuatara survived only on the of the Brothers Island tuatara have been created on Titi Island in the Marlborough Sounds, and on Somes Island in Wellington Harbour.

Tuatara can live in remarkably dense populations. Most tuatara islands have 50- 100 tuatara per square hectare - so an island of only 10 hectares may have a population of hundreds. Larger islands with many seabirds and invertebrates, which tuatara eat, may have greater densities. The largest population is on Stephens Island, where there are estimated to be as many as 2,500 per hectare in some places, and a total of at least 30,000. The total number of tuatara on all the islands is estimated to be between 50,000 and 100,000.

Legal protection, was granted to tuatara and the islands they occupied in 1895, but the reptiles continued to decline. Since then, active conservation management has reversed the decline, and new populations have become established on predator-free islands. In the mid-1980s the New Zealand Wildlife Service and its successor, the Department of Conservation, developed ways to eradicate rats from islands. Rats have now gone from almost all of the tuatara islands, making them safe for many threatened native species. In addition, the collection by conservationists of eggs for incubation in captivity, breeding in captivity, and moving tuatara to ratislands off the Northland coast, or Stephens Island in Cook Strait, were never invaded by rats, and had few of the other mammals that threaten native animals. The tiny, 4 hectare North Brother Island, in Cook Strait. However, two new populations free islands, have increased the number of islands that are inhabited by tuatara to 37.

Many new tuatara populations are planned for islands and mainland reserves that have been freed of predators.

Questions 1 - 6

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

In boxes 1-6 on your answer sheet, write:

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

1. The two living species of tuatara look alike
2. Many of the tuatara bones that have been found are millions of years old.
3. The tails of male tuatara are a different colour from the tails of female tuatara.
4. The female tuatara lays eggs in a burrow.
5. There are higher numbers of female hatchlings than males.
6. Once they have hatched, young tuatara have to look after themselves.

Questions 7 -13

Complete the notes below. Choose ONE WORD AND/OR A NUMBER from the passage for each answer. Write your answers in boxes 7-13 on your answer sheet.

The tuatara

Lifespan

- maximum lifespan unknown
- many live to at least 7.....years old

Behaviour

- attack other creatures with their 8 .....
- eat young 9 ..... that live in the same burrows, invertebrates and reptiles

Population

- abundant until rats were introduced by 10 ..... people
- by the 1840s, hardly any tuatara found on the 11 .....
- islands off the north-eastern coast and in Cook Strait now home to the 12..... tuatara
- Brothers Island tuatara found on North Brother Island
- density of tuatara on Stephens Island is up to 13 ..... tuatara for every hectare

Protection of the species

- tuatara population dropped until rats eradicated from islands
- eggs were gathered by the Department of Conservation

10. Passage 10

Đề thi IELTS READING: Crop-growing skyscrapers (thi ngày 31/05/2023)

By the year 2050, nearly 80% of the Earth's population will live in urban centres. Applying the most conservative estimates to current demographic trends, the human population will increase by about three billion people by then. An estimated 109 hectares of new land (about 20% larger than Brazil) will be needed to grow enough food to feed them, if traditional farming methods continue as they are practised today.

At present, throughout the world, over 80% of the land that is suitable for raising crops is in use. Historically, some 15% of that has been laid waste by poor management practices. What can be done to ensure enough food for the world's population to live on ?

The concept of indoor farming is not new, since hothouse production of tomatoes and other produce has been in vogue for some time. What is new is the urgent need to scale up this technology to accommodate another three billion people. Many believe an entirely new approach to indoor farming is required, employing cutting-edge technologies. One such proposal is for the 'Vertical Farm'. The concept is of multi-storey buildings in which food crops are grown in environmentally controlled conditions. Situated in the heart of urban centres, they would drastically reduce the amount of transportation required to bring food to consumers. Vertical farms would need to be efficient, cheap to construct and safe to operate. If successfully implemented, proponents claim, vertical farms offer the promise of urban renewal, sustainable production of a safe and varied food supply (through year-round production of all crops), and the eventual repair of ecosystems that have been sacrificed for horizontal farming.

It took humans 10,000 years to learn how to grow most of the crops we now take for granted. Along the way, we despoiled most of the land we worked, often turning verdant, natural ecozones into semi-arid deserts. Within that same time frame, we evolved into an urban species, in which 60% of the human population now lives vertically in cities. This means that, for the majority, we humans have shelter from the elements, yet we subject our food-bearing plants to the rigours of the great outdoors and can do no more than hope for a good weather year. However, more often than not now, due to a rapidly changing climate, that is not what happens. Massive floods, long droughts, hurricanes and severe monsoons take their toll each year, destroying millions of tons of valuable crops.

The supporters of vertical farming claim many potential advantages for the system. For instance, crops would be produced all year round, as they would be kept in artificially controlled, optimum growing conditions. There would be no weather-related crop failures due to droughts, floods or pests. All the food could be grown organically, eliminating the need for herbicides, pesticides and fertilisers. The system would greatly

reduce the incidence of many infectious diseases that are acquired at the agricultural interface. Although the system would consume energy, it would return energy to the grid via methane generation from composting nonedible parts of plants. It would also dramatically reduce fossil fuel use, by cutting out the need for tractors, ploughs and shipping.

A major drawback of vertical farming, however, is that the plants would require artificial light. Without it, those plants nearest the windows would be exposed to more sunlight and grow more quickly, reducing the efficiency of the system. Single-storey greenhouses have the benefit of natural overhead light; even so, many still need artificial lighting.

A multi-storey facility with no natural overhead light would require far more. Generating enough light could be prohibitively expensive, unless cheap, renewable energy is available, and this appears to be rather a future aspiration than a likelihood for the near future.

One variation on vertical farming that has been developed is to grow plants in stacked trays that move on rails. Moving the trays allows the plants to get enough sunlight. This system is already in operation, and works well within a single-storey greenhouse with light reaching it from above: it Is not certain, however, that it can be made to work without that overhead natural light.

Vertical farming is an attempt to address the undoubted problems that we face in producing enough food for a growing population. At the moment, though, more needs to be done to reduce the detrimental impact it would have on the environment, particularly as regards the use of energy. While it is possible that much of our food will be grown in skyscrapers in future, most experts currently believe it is far more likely that we will simply use the space available on urban rooftops.

Questions 1-7

Complete the sentences below. Choose NO MORE THAN TWO WORDS from the passage for each answer. Write your answers in boxes 1-7 on your answer sheet.

Indoor farming

1. Some food plants, including .....are already grown indoors.

2. Vertical farms would be located in ..... meaning that there would be less need to take them long distances to customers.

3. Vertical farms could use methane from plants and animals to produce .....

4. The consumption of .....would be cut because agricultural vehicles would be unnecessary.

5. The fact that vertical farms would need ..... light is a disadvantage.

6. One form of vertical farming involves planting in ..... which are not fixed.

7. The most probable development is that food will be grown on .....in towns and cities.

Questions 8-13

Do the following statements agree with the information given in Reading Passage? In boxes 8-13 on your answer sheet, write:

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

8. Methods for predicting the Earth's population have recently changed.

9. Human beings are responsible for some of the destruction to food-producing land.

10. The crops produced in vertical farms will depend on the season.

11. Some damage to food crops is caused by climate change.

12. Fertilisers will be needed for certain crops in vertical farms.

13. Vertical farming will make plants less likely to be affected by infectious diseases.