# IELTSFever Academic IELTS Reading Test 127

## Reading Passage 1

*You should spend about 20 minutes on Questions 1-13, which are based on the IELTSFever Academic IELTS Reading Test 127 Reading Passage Rainwater Harvesting below.*

### Rainwater Harvesting

*For two years southern Sri Lanka suffered a prolonged drought, described by locals as "the worst in 50 years". Some areas didn't see a successful crop for four or five consecutive seasons. Livestock died, water in wells dropped to dangerously low levels, children were increasingly malnourished and school attendance has fallen. An estimated 1.6 million people were affected.*

**{A}** Muthukandiya is a village in Monaragala district, one of the drought-stricken areas in the "dry zone" of southern Sri Lanka , where half the country's population of 18 million lives. Rainfall in the area varies greatly from year to year, often bringing extreme dry spells in between monsoons. But this drought was much worse than usual. Despite some rain in November, only half of Moneragala's 1,400 tube wells were in working order by March. The drought devastated supplies of rice and freshwater fish, the staple diet of inland villages. Many local industries closed down and villagers headed for the towns in search of work.

**{B}** The villagers of Muthukandiya arrived in the 1970s as part of a government resettlement scheme. Each family was given six acres of land, with no irrigation system. Because crop production, which relies entirely on rainfall, is insufficient to support most families, the village economy relies on men and women working as day-labourers in nearby sugar-cane plantations. Three wells have been dug to provide domestic water, but these run dry for much of the year. Women and children may spend several hours each day walking up to three miles (five kilometres) to fetch water for drinking, washing and cooking.

**{C}** In 1998, communities in the district discussed water problems with Practical Action South Asia. What followed was a drought mitigation initiative based on a low-cost "rainwater harvesting" technology already used in Sri Lanka and elsewhere in the region. It uses tanks to collect and store rain channelled by gutters and pipes as it runs off the roofs of houses. Despite an indigenous tradition of rain-water harvesting and irrigation systems going back to the third century BC, policy-makers in modern times have often overlooked the value of such technologies, and it is only recently that officials have taken much interest in household-level structures. Government and other programmes have, however, been top-down in their conception and application, installing tanks free of charge without providing training in the skills needed to build and maintain them properly. Practical Action South Asia's project deliberately took a different approach, aiming to build up a local skills base among builders and users of the tanks, and to create structures and systems so that communities can manage their own rainwater harvesting schemes.

**{D}** The community of Muthukandiya was involved throughout. Two meetings were held where villagers analysed their water problems, developed a mitigation plan and selected the rainwater harvesting technology. Two local masons received several days' on-the-job training in building the 5,000 litre household storage tanks: surface tanks out of ferro-cement and underground tanks out of brick. Each system, including tank, pipes, gutters and filters, cost US$195 - equivalent to a month's income for an average village family. Just over half the cost was provided by the community, in the form of materials and unskilled labour. Practical Action South Asia contributed the rest, including cement, transport and payment for the skilled labour. Households learned how to use and maintain the tanks, and the whole community was trained to keep domestic water supplies clean. A village rainwater harvesting society was set up to run the project. To date, 37 families in and around Muthupandiyan have storage tanks. Evaluations show clearly that households with rainwater storage tanks have considerably more water for domestic needs than households relying entirely on wells and ponds. During the driest months, households with tanks may have up to twice as much water available. Their water is much cleaner, too.

**{E}** Nandawathie, a widow in the village, has taken full advantage of the opportunities that rainwater harvesting has brought her family. With a better water supply now close at hand, she began by growing a few vegetables. The income from selling these helped her to open a small shop on her doorstep. This increased her earnings still further, enabling her to apply for a loan to install solar power in her house. She is now thinking of building another tank in her garden so that she can grow more vegetables. Nandawathie also feels safer now that she no longer has to fetch water from the village well in the early morning or late evening. She says that her children no longer complain so much of diarrhoea And her daughter Sandamalee has more time for school work.

**{F}** In the short term, and on a small scale, the project has clearly been a success. The challenge lies in making such initiatives sustainable, and expanding their coverage. At a purely technical level, rainwater harvesting is evidently sustainable. In the Muthukandiya, the skills required to build and maintain storage tanks were taught fairly easily, and can be shared by the two trained masons, who are now finding work with other development agencies in the district.

**{G}** The non-structural elements of the work, especially its financial and organizational sustainability, present a bigger challenge. A revolving fund was set up, with households that had already benefited agreeing to contribute a small monthly amount to pay for maintenance, repairs and new tanks. However, it appears that the revolving fund concept was not fully understood and it has proved difficult to get households to contribute. Recovering costs from interventions that do not generate income directly will always be a difficult proposition, although this can be overcome if the process is explained more fully at the outset.

**{H}** The Muthukandiya initiative was planned as a demonstration project, to show that community-based drought mitigation through rainwater harvesting was feasible. Several other organizations have begun their own projects using the same approach. The feasibility of introducing larger tanks is being investigated.

**{I}** However, a lot of effort and patience are needed to generate interest, develop the skills and organize the management structures needed to implement sustainable community-based projects. It will probably be some time before rainwater harvesting technologies can spread rapidly and spontaneously across the district's villages, without external support.

## Questions 1-6

*Answer the questions below.*

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

**(1)** What is the major way for local people to make barely a support of living in Muthukandiya village?

**(2)** Where can adult workers make extra money in the daytime?

**(3)** What has been dug to supply water for daily household life?

**(4)** In which year did the plan of a new project to lessen the effect of drought begin?

**(5)** Where do the gutters and pipes collect rainwater from?

**(6)** What helps families obtain more water for domestic needs than those relying on only wells and ponds?

## Questions 7-13

*Do the following statements agree with the information given in Reading Passage 1? In boxes 7-13 on your answer sheet, write*

| | |
|---|---|
| YES | if the statement agrees with the writer |
| NO | if the statement does not agree with the writer |
| NOT GIVEN | if there is no information about this in the passage |

**(7)** Most of the government's actions and other programmes have somewhat failed.

**(8)** Masons were trained for the constructing parts of the rainwater harvesting system.

**(9)** The cost of rainwater harvesting systems was shared by local villagers and the local government.

**(10)** Tanks increase both the amount and quality of the water for domestic use.

**(11)** To send her daughter to school, a widow had to work for a job in rainwater harvesting scheme.

**(12)** Households benefited began to pay part of the maintenance or repairs.

**(13)** Training two masons at the same time is much more preferable to training a single one.

## Reading Passage 2

*You should spend about 20 minutes on Questions 14-26, which are based on the IELTSFever Academic IELTS Reading Test 127 Reading Passage Fossil files "The Paleobiology Database" below.*

# 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 a 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 Palaeobiology 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 Database Since

**(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 scientists 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 letters 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.

**Question 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

**Question 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

## Reading Passage 3

*You should spend about 20 minutes on Questions 27-40, which are based on the IELTSFever Academic IELTS Reading Test 127 Reading Passage The Exploration of Mars below.*

# The Exploration of Mars

**{A}** In 1877, Giovanni Schiaparelli, an Italian astronomer, made drawings and maps of the Martian surface that suggested strange features. The images from telescopes at this time were not as sharp as today's. Schiaparelli said he could see a network of lines, or canali. In 1894, an American astronomer, Percival Lowell, made a series of observations of Mars from his own observations of Mars from his own observatory at Flagstaff, Arizona, USA. Lowell was convinced a great network of canals had been dug to irrigate crops for the Martian race! He suggested that each canal had fertile vegetation on either side, making them noticeable from Earth. Drawings and globes he made show a network of canals and oases all over the planet.

**{B}** The idea that there was intelligent life on Mars gained strength in the late 19th century. In 1898, H.G. Wells wrote a science fiction classic, The War of the Worlds about an invading force of Martians who try to conquer Earth. They use highly advanced technology (advanced for 1898) to crush human resistance in their path. In 1917, Edgar Rice Burroughs wrote the first in a

series of 11 novels about Mars. Strange beings and rampaging Martian monsters gripped the public's imagination. A radio broadcast by Orson Welles on Halloween night in 1938 of The War of the Worlds caused widespread panic across America. People ran into the streets in their pyjamas-millions believed the dramatic reports of a Martian invasion.

**{C}** Probes are very important to our understanding of other planets. Much of our recent knowledge comes from these robotic missions into space. The first images sent back from Mars came from Mariner 4 in July 1965. They showed a cratered and barren landscape, more like the surface of our moon than Earth. In 1969, Mariners 6 and 7 were launched and took 200 photographs of Mars's southern hemisphere and pole on fly-by missions. But these showed little more information. In 1971, Mariner 9's mission was to orbit the planet every 12 hours. In 1975, The USA sent two Viking probes to the planet, each with a lander and an orbiter. The Landers had sampler arms to scoop up Maritain rocks and did experiments to try and find signs of life. Although no life was found, they sent back the first colour pictures of the planet's surface and atmosphere from pivoting cameras.

**{D}** The Martian meteorite found in Earth aroused doubts to the above analysis. The ALH84001 meteorite was discovered in December 1984 in Antarctica, by members of the ANSMET project; The sample was ejected from Mars about 17 million years ago and spent 11,000 years in or on the Antarctic ice sheets. Composition analysis by NASA revealed a kind of magnetite that on Earth, is only found in association with certain microorganisms. Some structures resembling the mineralized casts of terrestrial bacteria and their appendages, fibrils or by-products occur in the rims of carbonate globules and pre-terrestrial aqueous alteration regions. The size and shape of the objects is consistent with Earthly fossilized nanobacteria but the existence of nanobacteria itself is still controversial.

**{E}** In 1965, the Mariner 4 probe discovered that Mars had no global magnetic field that would protect the planet from potentially life-threatening cosmic radiation and solar radiation; observations made in the late 1990s by the Mars Global Surveyor confirmed this discovery. Scientists speculate that the lack of magnetic shielding helped the solar wind blow away much of Mars's atmosphere over the course of several billion years. After mapping cosmic radiation levels at various depths on Mars, researchers have concluded that any life within the first several meters of the planet's surface would be killed by lethal doses of cosmic radiation. In 2007, it was calculated that DNA and RNA damage by cosmic radiation would limit life on Mars to depths greater than 7.5 metres below the planet's surface. Therefore, the best potential locations for discovering life on Mars may be at subsurface environments that have not been studied yet. Disappearance of the magnetic field may have played a significant role in the process of Martian climate change. According to the scientists, the climate of Mars gradually transits from warm and wet to cold and dry after the magnetic field vanished.

**{F}** NASA's recent missions have focused on another question: whether Mars held lakes or oceans of liquid water on its surface in the ancient past. Scientists have found hematite, a mineral that forms in the presence of water. Thus, the mission of the Mars Exploration Rovers of 2004 was not to look for present or past life, but for evidence of liquid water on the surface of Mars in the planet's ancient past. Liquid water, necessary for Earth life and for metabolism as

generally conducted by species on Earth, cannot exist on the surface of Mars under its present low atmospheric pressure and temperature, except at the lowest shaded elevations for short periods and liquid water does not appear at the surface itself. In March 2004, NASA announced that its rover Opportunity had discovered evidence that Mars was, in the ancient past, a wet planet. This had raised hopes that evidence of past life might be found on the planet today. ESA confirmed that the Mars Express orbiter had directly detected huge reserves of water ice at Mars' south pole in January 2004.

**{G}** Researchers from the Center of Astrobiology (Spain) and the Catholic University of the North in Chile have found an oasis' of microorganisms two meters below the surface of the Atacama Desert, SOLID, a detector for signs of life which could be used in environments similar to subsoil on Mars. “We have named it a ‘microbial oasis' because we found microorganisms developing in a habitat that was rich in rock salt and other highly hygroscopic compounds that absorb water" explained Victor Parro, researcher from the Center of Astrobiology in Spain. “If there are similar microbes on Mars or remains in similar conditions to the ones we have found in Atacama, we could detect them with instruments like SOLID,” Parro highlighted.

**{H}** Even more intriguing, however, is the alternative scenario by Spanish scientists: If those samples could be found to use DNA, as Earthly life does, as their genetic code. It is extremely unlikely that such a highly specialised, complex molecule like DNA could have evolved separately on the two planets, indicating that there must be a common origin for Martian and Earthly life. Life based on DNA first appeared on Mars and then spread to Earth, where it then evolved into the myriad forms of plants and creatures that exist today. If this was found to be the case, we would have to face the logical conclusion: we are all Martian. If not, we would continue to search for life.

**Questions 27-32**

*The reading Passage has seven paragraphs A-H.*

*Which paragraph contains the following information?*

*Write the correct letter A-H, in boxes 27-32 on your answer sheet.*

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

**(27)** Martian evidence on Earth

**(28)** Mars and Earth may share the same life origin

**(29)** certain agricultural construction was depicted specifically

**(30)** the project which aims to identify life under similar condition of Mars

**(31)** Mars had experienced terrifying climate transformation

**(32)** Attempts in scientific investigation to find liquid water

## Questions 33-36

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

Write your answers in boxes 33-36 on your answer sheet.

**Question 33** How did Percival Lowell describe Mars in this passage?

**(A)** Perfect observation location is in Arizona.

**(B)** Canals of Mars are broader than that of the earth.

**(C)** Dedicated water and agriculture trace is similar to the earth.

**(D)** Actively moving Martian lives are found by observation.

**Question 34** How did people change their point of view towards Mars in the 19th century?

**(A)** They experienced a Martian attack.

**(B)** They learned knowledge of mars through some literature works

**(C)** They learned a new concept by listening to a famous radio program.

**(D)** They attended lectures given by famous writers.

**Question 35** In 1960s, which information is correct about Mars by a number of Probes sent to the space?

**(A)** It has a landscape full of rock and river

**(B)** It was not as vivid as the earth

**(C)** It contained the same substance as in the moon

**(D)** It had different images from the following probes

**Question 36** What is the implication of a project preceded by technology called SOLID in the Atacama Desert?

**(A)** It could be employed to explore organisms under Martian conditions.

**(B)** This technology could NOT be used to identify life on a similar condition of Mars.

**(C)** Atacama Desert is the only place that has a suitable environment for organisms.

**(D)** Life had not yet been found yet in the Atacama Desert.

## Questions 37-40

*Do the following statements agree with the information given in Reading Passage 1? In boxes 37-40 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 |

**(37)** Technology of Martian creatures was superior to what humans had at that time in every field according to The War of the Worlds.

**(38)** Proof sent by Viking probes has not been challenged yet.

**(39)** Analysis on meteorites from Mars found a substance which is connected to some germs.

**(40)** According to Victor Parro, their project will be deployed on Mars after they identified DNA substances on earth.