IELTSFever Academic Reading Test 105

Reading Passage 1

You should spend about 20 minutes on Questions 1-13, which are based on the IELTSFever Academic IELTS Reading Test 105 Reading Passage Silent Earthquake below.

Silent Earthquake

{A} In early November 2000 the Big Island of Hawaii experienced its largest earthquake in more than a decade. Some 2,000 cubic kilometers of the southern slope of Kilauea volcano lurched toward the ocean, releasing the energy of a magnitude 5.7 shock. Part of that motion took place under an area where thousands of people stop every day to catch a glimpse of one of the island's most spectacular lava flows. Yet when the earthquake struck, no one noticed—not even seismologists.

{B} How could such a notable event be overlooked? As it turns out, quaking is not an intrinsic part of all earthquakes. The event on Kilauea was one of the first unambiguous records of a so-called silent earthquake, a type of massive earth movement unknown to science until just a few years ago. Indeed, I would never have discovered this quake if my colleagues at the U.S. Geological Survey's Hawaiian Volcano Observatory had not already been using a network of sensitive instruments to monitor the volcano's activity. When I finally noticed that Kilauea's south flank had shifted 10 centimeters along an underground fault, I also saw that this movement had taken nearly 36 hours—a turtle's pace for an earthquake. In a typical tremor, opposite sides of the fault rocket past each other in a matter of seconds —quickly enough to create the seismic waves that cause the ground to rumble and shake.

{C} But just because an earthquake happens slowly and quietly does not make it insignificant. My co-investigators and I realized immediately that Kilauea's silent earthquake could be a harbinger of disaster. If that same large body of rock and debris were to gain momentum and take the form of a gigantic landslide—separating itself from the rest of the volcano and sliding rapidly into the sea—the consequences would be devastating. The collapsing material would push seawater into towering tsunami waves that could threaten coastal cities along the entire Pacific Rim. Such catastrophic flank failure, as geologists call it, is a potential threat around many island volcanoes worldwide.

{D} FORTUNATELY, the discovery of silent earthquakes is revealing more good news than bad. The chances of catastrophic flank failure are slim, and the instruments that record silent earthquakes might make early warnings possible. New evidence for conditions that might trigger silent slip suggests bold strategies for preventing flank collapse. Occurrences of silent earthquakes are also being reported in areas where flank failure is not an issue. Their silent earthquakes are inspiring ways to improve forecasts of their ground-shaking counterparts.

{E} The discovery of silent earthquakes and their link to catastrophic flank collapse was a by-product of efforts to study other potential natural hazards. Destructive earthquakes and volcanoes are a concern in Japan and the U.S. Pacific Northwest, where tectonic plates constantly plunge deep into the earth along what are called subduction zones. Beginning in the early 1990s, geologists began deploying large networks of continuously recording Global Positioning System (GPS) receivers in these regions and along the slopes of active volcanoes, such as Kilauea. By receiving signals from a constellation of more than 30 navigational satellites, these instruments can measure their own positions on the planet's surface at any given time to within a few millimeters.

{F} The scientists who deployed these GPS receivers expected to see both the slow, relentless motion of the planet's shell of tectonic plates and the relatively quick movements that earthquakes and volcanoes trigger. It came as some surprise when these instruments detected small ground movements that were not associated with any known earthquake or eruption. When researchers plotted the ground movements on a map, the pattern that resulted very much resembled one characteristic of fault movement. In other words, all the GPS stations on one side of a given fault moved several centimeters in the same general direction. This pattern would have been no surprise if it had taken a year or longer to form. In that case, scientists would have known that a slow and steady process called fault creep was responsible. But at rates of up to centimeters a day, the mystery events were hundreds of times as fast as that. Beyond their relative speediness, these silent earthquakes shared another attribute with their noisy counterparts that distinguished them from fault creep: they are not steady processes but instead are discrete events that begin and end suddenly.

{G} That sudden beginning, when it takes place on the slopes of a volcanic island, creates concern about a possible catastrophic flank event. Most typical earthquakes happen along faults that have built-in brakes: motion stops once the stress is relieved between the two chunks of earth that are trying to move past each other. But activity may not stop if gravity becomes the primary driver. In the worst-case scenario, the section of the volcano lying above the fault becomes so unstable that once slip starts, gravity pulls the entire mountainside downhill until it disintegrates into a pile of debris on the ocean floor.

{H} The slopes of volcanoes such as Kilauea become steep and vulnerable to this kind of collapse when the lava from repeated eruptions builds them up more rapidly than they can erode away. Discovering the silent earthquake on Kilauea suggests that the volcano's south flank is on the move, perhaps on its way to eventual obliteration.

{I} For now, friction along the fault is acting like an emergency brake. But gravity has won out in many other instances in the past. Scientists have long seen evidence of ancient collapses in sonar images of giant debris fields in the shallow waters surrounding volcanic islands around the world, including Majorca in the Mediterranean Sea and the Canary Islands in the Atlantic Ocean. In the Hawaiian Islands, geologists have found more than 25 individual collapses that have occurred over the past five million years—the blink of an eye in geologic time.

{J} In a typical slide, the volume of material that enters the ocean is hundreds of times as great as the section of Mount St. Helens that blew apart during the 1980 eruption-more than enough

to have triggered immense tsunamis. On the Hawaiian island of Lanai, for instance, geologists discovered evidence of wave action, including abundant marine shell fragments, at elevations of 325 meters. Gary M. McMurtry of the University of Hawaii at Manoa and his colleagues conclude that the most likely way the shells could have reached such a lofty location was within the waves of a tsunami that attained the astonishing height of 300 meters along some Hawaiian coastlines. Most of the tallest waves recorded in modern times were no more than one tenth that size.

Questions 1-5

Do the following statements agree with the information given in IELTSFever Academic IELTS Reading Test 105 Reading Passage 1? In boxes 1-5 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

(1) It takes a quite fast interaction caused by certain parts of the fault zone to produce a representative earthquake.

(2) Flank failure is a prerequisite which is followed by a silent earthquake.

(3) The silent earthquake can be used to forecast any form of earthquake.

(4) Kilauea falls into a category of the stirring volcanoes.

(5) In some islands, no less than 25 independent dilapidations are noticed in a short period from the perspective of geology.

Questions 6-10

The reading Passage has seven paragraphs A-H.

Which paragraph contains the following information?

Write the correct letter A-H, in boxes 6-10on your answer sheet.

NB You may use any letter more than once.

(6) the main characteristic to differentiate fault creep from earthquakes

(7) occurrence of landslide in water areas near volcanoes in archaic times

(8) catastrophe caused by silent earthquake under certain circumstances

(9) a metaphor to describe how slow a silent earthquake takes place

(10) the possible ending for the south slope of Kilauea

Questions 11-13

Summary

Complete the following summary of the paragraphs of IELTSFever Academic IELTS Reading Test 105 Reading Passage, using no more than two words or a number from the Reading Passage for each answer.

Write your answers in boxes 11-13 on your answer sheet.

When a model slide happens, the amount of the parts flowing into the sea is so huge that it might bring about .....**11**..... Ample shell debris included in .....**12**..... is a good example because they might be moved to the high area by currents. This height of the waves is as .....**13**..... .times taller than that documented in the contemporary era.

Reading Passage 2

You should spend about 20 minutes on Questions 14-26, which are based on the IELTSFever Academic IELTS Reading Test 105 Reading Passage Visions of Mars below.

Visions of Mars

Robot explorers transform a distant object of wonder into intimate terrain.

{A} Mars has long exerted a pull on the human imagination. The erratically moving red star in the sky was seen as sinister or violent by the ancients: The Greeks identified it with Ares, the god of war; the Babylonians named it after Nergal, god of the underworld. To the ancient Chinese, it was Ying-huo, the fire planet. Even after Copernicus proposed, in 1543, that the sun

and not the Earth was the center of the local cosmos, the eccentricity of Mars's celestial motions continued as a puzzle until, in 1609, Johannes Kepler analyzed all the planetary orbits as ellipses, with the sun at one focus.

{B} In that same year Galileo first observed Mars through a telescope. By the mid-17th century, telescopes had improved enough to make visible the seasonally growing and shrinking polar ice caps on Mars, and features such as Syrtis Major, a dark patch thought to be a shallow sea. The Italian astronomer Giovanni Cassini was able to observe certain features accurately enough to calculate the planet's rotation. The Martian day, he concluded, was forty minutes longer than our twenty-four hours; he was only three minutes off. While Venus, a closer and larger planetary neighbor, presented an impenetrable cloud cover, Mars showed a surface enough like Earth's to invite speculation about its habitation by life-forms.

{C} Increasingly refined telescopes, challenged by the blurring effect of our own planet's thick and dynamic atmosphere, made possible ever more detailed maps of Mars, specifying seas and even marshes where seasonal variations in presumed vegetation came and went with the fluctuating ice caps. One of the keenest eyed cartographers of the planet was Giovanni Schiaparelli, who employed the Italian word canali for perceived linear connections between presumed bodies of water. The word could have been translated as "channels," but "canals" caught the imagination of the public and in particular that of Percival Lowell, a rich Boston Brahmin who in 1893 took up the cause of the canals as artifacts of a Martian civilization. As an astronomer, Lowell was an amateur and an enthusiast but not a crank. He built his own observatory on a mesa near Flagstaff, Arizona, more than 7,000 feet high and, in his own words, "far from the smoke of men"; his drawings of Mars were regarded as superior to Schiaparelli's even by astronomers hostile to the Bostonian's theories. Lowell proposed that Mars was a dying planet whose highly intelligent inhabitants were combating the increasing desiccation of their globe with a system of irrigation canals that distributed and conserved the dwindling water stored in the polar caps.

{D} This vision, along with Lowell's stern Darwinism, was dramatized by H. G. Wells in one of science fiction's classics, The War of the Worlds (1898). The Earth-invading Martians, though hideous to behold and merciless in action, are allowed a dollop of dispassionate human sympathy. Employing advanced instruments and intelligences honed by "the immediate pressure of necessity," they enviously gaze across space at "our own warmer planet, green with vegetation and grey with water, with a cloudy atmosphere eloquent of fertility, with glimpses through its drifting cloud wisps of broad stretches of populous country and narrow, navy-crowded seas."

{E} In the coming half century of Martian fancy, our neighboring planet served as a shadowy twin onto which earthly concerns, anxieties, and debates were projected. Such burning contemporary issues as colonialism, collectivism, and industrial depletion of natural resources found ample room for exposition in various Martian utopias. A minor vein of science fiction showed Mars as the site, more or less, of a Christian afterlife; C. S. Lewis's Out of the Silent Planet (1938) invented an unfallen world, Malacandra. Edgar Rice Burroughs's wildly popular series of Martian romances presented the dying planet as a rugged, racially diverse frontier

where, in the words of its Earthling superhero John Carter, life is "a hard and pitiless struggle for existence." Following Burroughs, pulp science fiction, brushing aside possible anatomical differences, frequently mated Earthlings and Martians, the Martian usually the maiden in the match, and the male a virile Aryan aggressor from our own tough planet. The etiolated, brown-skinned, yellow-eyed Martians of Ray Bradbury's poetic and despairing The Martian Chronicles (1950) vanish under the coarse despoilment that human invasion has brought.

{F} But all the fanciful Martian megafauna—Wells's leathery amalgams of tentacles and hugely evolved heads; American journalist Garrett Serviss's 15-foot-tall quasi red men; Burroughs's 10-foot, 4-armed, olive-skinned Tharks; Lewis's beaver-like hrossa and technically skilled pfifltriggi; and the "polar bear-sized creatures" that Carl Sagan imagined to be possibly roaming the brutally cold Martian surface were swept into oblivion by the flyby photographs taken by Mariner 4 on July 14, 1965, from 6,000 miles away. The portion of Mars caught on an early digital camera showed no canals, no cities, no water, and no erosion or weathering. Mars more resembled the moon than the Earth. The pristine craters suggested that surface conditions had not changed in more than three billion years. The dying planet had been long dead.

{G} Two more Mariner flybys, both launched in 1969, sent back 57 images that, in the words of the NASA release, "revealed Mars to be heavily cratered, bleak, cold, dry, nearly airless and generally hostile to any Earth-style life-forms." But Mariner 9, an orbiter launched in 1971, dispatched, over 146 days, 7,000 photographs of surprisingly varied and violent topography: volcanoes, of which the greatest, Olympus Mons, is 13 miles high, and a system of canyons, Valles Marineris, that on Earth would stretch from New York City to Los Angeles. Great arroyos and tear-shaped islands testified to massive floods in the Martian past, presumably of water, the sine qua non of life as Earth knows it. In 1976 the two Viking landers safely arrived on the Martian surface; the ingenious chemical experiments aboard yielded, on the question of life on Mars, ambiguous results whose conclusions are still being debated into the 21st century.

{H} In the meantime, our geographical and geological intimacy with Mars grows. The triumphant deployment of the little Sojourner rover in 1997 was followed in 2004 by the even more spectacular success of two more durable rovers, Spirit and Opportunity. In four years of solar-powered travels on the red planet, the twin robots have relayed unprecedentedly detailed images, including many clearly of sedimentary rocks, suggesting the existence of ancient seas. The stark, russet-tinged photographs plant the viewer right on the surface; the ladderlike tracks of Spirit and Opportunity snake and gouge their way across rocks and dust that for eons have rested scarcely disturbed under salmon pink skies and a pearlescent sun. In this tranquil desolation, the irruption of our live curiosity and systematic purpose feels heroic.

{I} Now the Phoenix mission, with its surpassingly intricate arm, scoop, imagers, and analyzers, takes us inches below the surface of dust, sand, and ice in Mars's north polar region. Spoonfuls of another planet's substance, their chemical ingredients volatilized, sorted, and identified, become indexes to cosmic history. Meanwhile, the Mars Reconnaissance Orbiter, the newest of three operational spacecraft circling the planet, feeds computers at the University of Arizona with astoundingly vivid and precise photographs of surface features. Some of these false-color

images appear totally abstract, yet they yield to knowledgeable eyes riches of scientific information.

{J} The dead planet is not so dead after all: Avalanches and dust storms are caught on camera, and at the poles a seasonal sublimation of dry ice produces erosion and movement. Dunes shift; dust devils trace dark scribbles on the delicate surface. Whether or not evidence of microbial or lichenous life emerges amid this far-off flux, Mars has become an ever nearer neighbor, a province of human knowledge. Dim and fanciful visions of the twinkling fire planet have led to panoramic close-ups beautiful beyond imagining.

Questions 14-18

The IELTSFever Academic IELTS Reading Test 105 reading Passage has seven paragraphs A-J.

Which paragraph contains the following information?

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

NB you may use any letter more than once

(14) People from Mars and people from our planet fall in love with each other

(15) the accurate calculation of Martian day by an astronomer

(16) the highest volcano on Mars

(17) various writings with Mars as the background

(18) imaginative ideas the ancients had about Mars

Questions 19-23

Use the information in the passage to match the robot explorers (listed A-F) with deeds below. Write the appropriate letters A-F in boxes 19-23 on your answer sheet.

(A) Mariner 4

(B) Mariner 9

(C) Viking lander

(D) Spirit and Opportunity

(E) Phoenix

(F) Mars Reconnaissance Orbiter

(19) It did tests on the possibility of life on Mars but no definitive conclusions have been made by now.

(20) It dug the surface of Mars and made an analysis of the substance collected.

(21) Photos collected by this robot explorer denied the existence of the horrible creatures previously described in some books.

(22) It got the energy from the Sun and sent pictures suggesting that seas could have existed on Mars a long time ago.

(23) Photos from the robot explorer display that the landscape of Mars is quite different from what has been traditionally depicted.

Questions 24-26

Do the following statements agree with the information given in IELTSFever Academic IELTS Reading Test 105 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

(24) Giovanni Schiaparelli proposed that the interconnected bodies of water were canals built by intelligent livings on Mars.

(25) Human beings will land on Mars in 20 years.

(26) With the help of robot explorers, Mars is no longer as distant as it appears to be.

Reading Passage 3

You should spend about 20 minutes on Questions 27-40, which are based on the IELTSFever Academic IELTS Reading Test 105 Reading Passage Making of Olympic Torch below.

Making of Olympic Torch

{A} Every two years, people around the world wait in anticipation as a torch-bearing runner enters the Olympic arena and lights the cauldron. The symbolic lighting of the Olympic flame marks the beginning of another historic Olympic Games. The opening ceremony is the end of a long journey for the Olympic torch. The ancient Greeks revered the power of fire. In Greek mythology, the god Prometheus stole fire from Zeus and gave it to humans. The Greeks held their first Olympic Games in 776 B.C. The Games, held every four years at Olympia, honored Zeus and other Greek gods. A constantly burning flame was a regular fixture throughout Greece. At the start of the Olympic Games, the Greeks would ignite a cauldron of flame upon the altar dedicated to Hera, goddess of birth and marriage.

{B} The flame was reintroduced to the Olympics at the 1928 Amsterdam Games. A cauldron was lit, but there was no torch relay. The first Olympic torch relay was at the 1936 Berlin Summer Games and it was not introduced to the Winter Olympics until the 1952 Games. It was lit that year not in Olympia, Greece, but in Norway, which was chosen because it was the birthplace of skiing. But since the 1964 Olympics at Innsbruck, Austria, every Olympic Games - Winter and Summer - has begun with a torch-lighting ceremony in Olympia, Greece, followed by a torch relay to the Olympic stadium.

Designing an Olympic Torch

{C} The torch starts out as an idea in the mind of a designer or group of designers. Several design teams submit proposals to the Olympic Committee for the opportunity to create and build the torch. The team that wins the assignment will design a torch that is both aesthetically pleasing and functional. A torch can take a year or two to design and build. And once the torch has been built, it must be tested rigorously in all kinds of weather conditions. The look of the modern Olympic torch originated with John Hench, a Disney artist who designed the torch for the 1960 Winter Olympics in Squaw Valley, California. His design provided the basis for all future torches. Since then, designers have tried to create a torch that represents the host country and the theme for that Olympic Games.

{D} The torch must then be replicated ... and replicated. It's not just one torch making the journey to the Olympic stadium; it's thousands. Anywhere from 10,000 to 15,000 torches are constructed to accommodate the thousands of runners who carry them through each leg of the Olympic relay. Each runner has the opportunity to purchase his torch at the end of his leg of the relay.

Olympic Torch fuel

{E} The first torch used in the modern Olympics (the 1936 Berlin Games) was made of a thin steel rod topped with a circular piece from which the flame rose. It was inscribed with a dedication to the runners. The torch must stay lit for the entire length of its journey. It must survive wind, rain, sleet, snow, and a variety of climates (desert, mountain, and ocean). For fuel, early torches burned everything from gunpowder to olive oil. Some torches used a mixture of hexamine (a mixture of formaldehyde and ammonia) and naphthalene (the hydrogen- and

carbon-based substance in mothballs) with an igniting liquid. These substances weren't always the most efficient fuel sources, and they were sometimes dangerous. In the 1956 Games, the final torch in the relay was lit by magnesium and aluminum, burning chunks of which fell from the torch and seared the runner's arms. The first liquid fuels were introduced at the 1972 Munich Games. Torches since that time have carried liquid fuels – they are stored under pressure as a liquid, but burn as a gas to produce a flame. Liquid fuel is safe for the runner and can be stored in a lightweight canister. The torch designed for the 1996 Atlanta Summer Olympics has an aluminum base that houses a small fuel tank. As fuel rises through the handle, it is pushed through a brass valve with thousands of tiny openings. As the fuel squeezes through the small openings, it builds pressure. Once it makes it through the openings, the pressure drops, and the liquid fuel turns into a gas for burning. The tiny holes maintain a high pressure in the fuel to keep the flame going through harsh conditions.

{F} The 1996 torch was fueled by propylene, which produced a bright flame. But because propylene contains a high level of carbon, it also produced a lot of smoke – not a plus for the environment. In 2000, the creators of the Sydney Olympic torch came up with a more lightweight, inexpensive, and environmentally friendly design. To fuel their torch, they decided on a mixture of 35 percent propane (the gas used to heat home stoves and barbecue grills) and 65 percent butane (cigarette lighter fuel), which ignites a strong flame without making a lot of smoke. Because the propane/butane mixture can be stored as a liquid under relatively light pressure, it can be kept in a lightweight container. It then burns as gas under normal atmospheric pressure. The liquid fuel is stored in an aluminum canister located about halfway up the torch. It flows up to the top of the torch through a pipe. Before leaving the pipe, the liquid fuel is forced through a tiny hole. Once it moves through the hole, there is a pressure drop, causing the liquid to turn into gas for burning. The torch moves the liquid fuel at a consistent rate to the burner, so the flame always burns with the same intensity. The torch can stay lit for about 15 minutes.

{G} The engineers behind both the 1996 and 2000 torches adopted a burner system that utilized a double flame, helping them to stay lit even in erratic winds. The external flame burns slowly and at a lower temperature than the internal flame. This flame is big and bright orange, so it can be seen clearly; but it is unstable in winds. The interior flame burns hotter, producing a blue flame that is small but very stable, because its internal location protects it from the wind. It would act like a pilot light, able to relight the external flame should it go out.

{H} When the 2002 Olympic Torch, in Salt lake city, the top section was glass, and the Olympic Flame burned within the glass, echoing the 2002 Olympic theme Light the Fire Within. The glass stood for purity, winter, ice, and nature. Also inside the glass was a geometric copper structure which helped hold the flame. The two silver sections also mirrored the blue/purple colors of the Fire and Ice theme

Questions 27-29

*Complete the summary below using **NO MORE THAN THREE WORDS** from the passage.*

Write your answers in boxes 27-29 on your answer sheet.

The Olympic torch, as Olympic Committee requested, is carefully designed which takes a year to design and build so that it is capable of withstanding all kinds of **27**..... and staying lit through widely differing weather conditions. The torch used in the modern Olympics which is to hold the **28**..... And the torch must then be copied and thousands are built as demanded by the thousands of runners who carry them through. Each runner has the opportunity to **29**..... his torch at completion of his journey of the relay for memorial and as for souvenirs

Questions 30-35

Match the following statements as applying to different Olympic flames A-H.

NB There are more choices than questions. You may not need all the choices.

(A) ancient Greek Olympic flames

(B) Berlin Games torch (1936)

(C) 1952 Winter Games flame

(D) 1956 Games torch

(E) Munich Games torch (1972)

(F) 1996 torch (Atlanta)

(G) 2000 torch (Sydney)

(H) 2002 torch (Salt lake city)

Write your answers in boxes 30-35 on your answer sheet.

(30) first liquid fuel torch

(31) not environmentally friendly

(32) began to record the runners' name

(33) potential risky as it burnt runner's arms

(34) special for a theme

(35) flame not lit in Greek

Questions 36-40

Diagram filling

*The chart below shows the structure of the **1996 Olympic torch**.*

*Complete the chart using **NO MORE THAN THREE WORDS** from the passage for each blank.*

Write your answers in boxes 36-40 on your answer sheet.