IELTSFever Academic Reading Test 86

Reading passage 1

T-Rex Hunter

{A} Jack Horner is an unlikely academic: his dyslexia is so bad that he has trouble reading a book. But he can read the imprint of life in sandstone or muddy shale across a distance of 100m years, and it is this gift that has made him curator of palaeontology at Montana State University's Museum of the Rockies, the leader of a multi-million dollar scientific project to expose a complete slice of life 68m years ago, and a consultant to Steven Spielberg and other Hollywood figures.

{B} His father had a sand and gravel quarry in Montana, and the young Horner was a collector of stones and bones, complete with notes about when and where he found them. "My father had owned a ranch when he was younger, in Montana," he says. "He was enough of a geologist, being a sand and gravel man, to have a pretty good notion that they were dinosaur bones. So when I was eight years old he took me back to the area that had been his ranch, to where he had seen these big old bones. I picked up one. I am pretty sure it was the upper arm bone of a duck billed dinosaur: it probably wasn't a dinosaur but closely related to that. I catalogued it, and took good care of it, and then later when I was in high school, excavated my first dinosaur skeleton. It obviously started earlier than eight and I literally have been driven ever since. I feel like I was born this way."

Horner spent seven years at university, but never graduated. "I have a learning disability, I would call it a learning difference - dyslexia, they call it - and I just had a terrible time with English and foreign languages and things like that. For a degree in geology or biology they required two years of a foreign language. There was no way in the world I could do that. In fact, I didn't really pass English. So I couldn't get a degree, I just wasn't capable of it. But I took all of the courses required and I wrote a thesis and I did all sorts of things. So I have the education, I just don't have the piece of paper," he says.

{C} In Montana, in those days, everybody had the right to a college education. His grades at high school had been terrible, at university, his advisers recognised that he was having a hard time, and went on helping. The dean who kept readmitting him, was to give Horner an honorary doctorate years later. As a young non-graduate, Horner wrote to every museum in the English-speaking world, asking for a job. The Los Angeles County Museum and the Royal Ontario Museum in Toronto made offers, but he accepted a post as technician at Princeton University because Princeton, New Jersey.

{D} "We definitely know we are working on a very broad coastal plain with the streams and rivers bordered by conifers and hardwood plants, and the areas in between these rivers were probably fern-covered. There were no grasses at all: just ferns and bushes - an unusual landscape, kind of taking the south-eastern United States - Georgia, Florida - and mixing it with the moors of England and flattening it out," he says. "Triceratops is very common: they are the cows of the Cretaceous, they are everywhere. Duck Billed dinosaurs are relatively common but not as common as triceratops and T rex, for a meat-eating dinosaur, is very common. What we would consider the predator-prey ratio seems really off the scale. What is interesting is the little dromaeosaurs, the ones we know for sure were good predators, we haven't found any of them."

{E} Which is why he sees T. rex not as the lion of the Cretaceous savannah but its vulture. "Look at the wildebeest that migrate in the Serengeti of Africa, a million individuals lose about 200,000 individuals in that annual migration. There is a tremendous carrion base there. And so you have hyenas, you have tremendous numbers of vultures that are scavenging, you don't have all that many animals that are good predators. If T rex was a top predator, especially considering how big it is, you'd expect it to be extremely rare, much rarer than the little dromaeosaurs, and yet they are everywhere, they are a dime a dozen," he says. A 12-tonne T rex is a lot of vulture, but he doesn't see the monster as clumsy. He insisted on his theory and finding, dedicated to further research upon it, of course, he would like to reevaluate if there is any case that additional evidence found or explanation raised by others in the future.

{F} He examined the leg bones of the T-rex, and compared the length of the thigh bone (upper leg), to the shin bone (lower leg). He found that the thigh bone was equal in length or slightly longer than the shin bone, and much thicker and heavier. which proves that the animal was built to be a slow walker rather than fast running. On the other hand, the fossils of fast hunting dinosaurs ALWAYS showed that the shin bone was longer than the thigh bone. This same truth can be observed in many animals of today which are designed to run fast: The ostrich, cheetah, etc.

{G} He also studied the fossil teeth of the T-rex, and compared them with the teeth of the Velociraptor, and put the nail in the coffin of the "hunter T-rex theory". The Velociraptor's teeth were like steak knives: sharp, razor-edged, and capable of tearing through flesh with ease. The T-Rex's teeth were huge, sharp at their tip, but blunt , propelled by enormous jaw muscles, which enabled them to only crush bones.

{H} With the evidence presented in his documentary, Horner was able to prove that the idea of the T-rex as being a hunting and ruthless killing machine is probably just a myth. In light of the scientific clues he was able to unearth, the T-rex was a slow , sluggish animal which had poor vision, an extraordinary sense of smell, that often reached its "prey" after the real hunters were done feeding, and sometimes it had to scare the hunters away from a corpse. In order to do that, the T-rex had to have been ugly, nasty-looking, and stinky This is actually true of nearly all scavenger animals. They are usually vile and nasty looking.

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 is True
FALSE	if the statement is false
NOT GIVEN	If the information is not given in the passage

(1) Jack Horner knew exactly the bone belonged to a certain dinosaur when he was in my father's ranch at the age of 8.

(2) Jack Horner achieved a distinctive degree in university when he graduated.

(3) Jack Horner is the first man to discover a T-Rex's bone in the world.

(4) Jack Horner believes that the number of prey should be more than that of predators.

(5) T-rex's number is equivalent to the number of vultures in the Serengeti.

(6) The hypothesis that T-rex is top predator conflicts with the fact of predator-prey ratio which Jack found.

(7) He refused to accept any other viewpoints about T rex's category.

Questions 8-13

Summary

*Complete the following summary of the paragraphs of Reading Passage, using **no more than two words** from the Reading Passage for each answer. Write your answers in boxes 8-13 on your answer sheet.*

Jack Horner found that T-rex's _____**8**_____is shorter than the thigh bone, which demonstrated that it was actually a _____ **9** _____, unlike other swift animals such as ostrich or _____**10**_____that was built Another explanation support his idea is that T-rex's teeth were rather_____**12**_____ , which only allowed T-rex to _____**13**_____ hard bones instead of tearing flesh like Velociraptor.

Reading Passage 2

Light Pollution

{A} If humans were truly at home under the light of the moon and stars, we would go into darkness happily, the midnight world as visible to us as it is to the vast number of nocturnal species on this planet. Instead, we are diurnal creatures, with eyes adapted to living in the sun's light. This is a basic evolutionary fact, even though most of us don't think of ourselves as diurnal beings any more than we think of ourselves as primates or mammals or Earthlings. Yet it's the

only way to explain what we've done to the night: We've engineered it to receive us by filling it with light.

{B} This kind of engineering is no different than damming a river. Its benefits come with consequences—called light pollution—whose effects scientists are only now beginning to study. Light pollution is largely the result of bad lighting design, which allows artificial light to shine outward and upward into the sky, where it's not wanted, instead of focusing it downward, where it is. Ill-designed lighting washes out the darkness of night and radically alters the light levels and light rhythms—to which many forms of life, including ourselves, have adapted.

{C} Now most of humanity lives under intersecting domes of reflected, refracted light, of scattering rays from overlit cities and suburbs, from light flooded highways and factories. Nearly all of nighttime Europe is a nebula of light, as is most of the United States and all of Japan. In the south Atlantic the glow from a single fishing fleet squid fishermen during their prey with metal halide lamps—can be seen from space, burning brighter, in fact, than Buenos Aires or Rio de Janeiro.

{D} We've lit up the night as if it were an unoccupied country, when nothing could be further from the truth. Among mammals alone, the number of nocturnal species is astonishing. Light is a powerful biological force, and in many species it acts as a magnet, a process being studied by researchers such as Travis Longcore and Catherine Rich, co-founders of the Los Angeles-based Urban Wildlands Group. The effect is so powerful that scientists speak of songbirds and seabirds being "captured" by searchlights on land or by the light from gas flares on marine oil platforms, circling and circling in the thousands until they drop. Migrating at night, birds are apt to collide with brightly lit tall buildings; immature birds on their first journey suffer disproportionately.

{E} Insects, of course, cluster around streetlights, and feeding at those insect clusters is now ingrained in the lives of many bat species. In some Swiss valleys the European lesser horseshoe bat began to vanish after streetlights were installed, perhaps because those valleys were suddenly filled with light-feeding pipistrelle bats. Other nocturnal mammals—including desert rodents, fruit bats, opossums, and badgers-forage more cautiously under the permanent full moon of light pollution because they've become easier targets for predators.

{F} Some birds—blackbirds and nightingales, among others—sing at unnatural hours in the presence of artificial light. Scientists have determined that long artificial days— and artificially short nights-induce early breeding in a wide range of birds. And because a longer day allows for longer feeding, it can also affect migration schedules. One population of Bewick's swans wintering in England put on fat more rapidly than usual, priming them to begin their Siberian migration early. The problem, of course, is that migration, like most other aspects of bird behavior, is a precisely timed biological behavior. Leaving early may mean arriving too soon for nesting conditions to be right

{G} Nesting sea turtles, which show a natural predisposition for dark beaches, find fewer and fewer of them to nest on. Their hatchlings, which gravitate toward the brighter, more reflective sea horizon, find themselves confused by artificial lighting behind the beach. In Florida alone, hatchling losses number in the hundreds of thousands every year. Frogs and toads living near brightly lit highways suffer nocturnal light levels that are as much as a million times brighter than normal, throwing nearly every aspect of their behavior out of joint, including their nighttime breeding choruses.

{H} Of all the pollution we face, light pollution is perhaps the most easily remedied. Simple changes in lighting design and installation yield immediate changes in the amount of light spilled into the atmosphere and, often, immediate energy savings.

I It was once thought that light pollution only affected astronomers, who need to see the night sky in all its glorious clarity. And, in fact, some of the earliest civic efforts to control light pollution—in Flagstaff, Arizona, half a century ago—were made to protect the view from Lowell Observatory, which sits high above that city. Flagstaff has tightened its regulations since then, and in 2001 it was declared the first International Dark Sky City. By now the effort to control light pollution has spread around the globe. More and more cities and even entire countries, such as the Czech Republic, have committed themselves to reducing unwanted glare.

{J} Unlike astronomers, most of us may not need an undiminished view of the night sky for our work, but like most other creatures we do need darkness. Darkness is as essential to our biological welfare, to our internal clockwork, as light itself. The regular oscillation of waking and sleep in our lives, one of our circadian rhythms—is nothing less than a biological expression of the regular oscillation of light on Earth. So fundamental are these rhythms to our being that altering them is like altering gravity.

Questions 14-19

The reading Passage has ten paragraphs A-J.

Which paragraph contains the following information?

Write the correct letter A-J, in boxes 14-19 on your answer sheet.

(14) A reason that contributes to light pollution.

(15) A city has lessened light pollution successfully.

(16) The importance of darkness.

(17) The popularity of light pollution in the world.

(18) Methods to reduce light pollution.

(19) The reason why we have changed the night.

Questions 20-21

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

Write your answers in boxes 20-21 on your answer sheet.

Question 20 How does light pollution influence creatures?

(A) by bad lighting design

(B) by changing the cities and suburbs creatures are used to

(C) by changing the directions of light

(D) by changing the light creatures are used to

Question 21 Some aspects of animals' lives are affected by the unwanted light, EXCEPT:

(A) Migration

(B) Reproduction

(C) Natural life span

(D) Feeding

Questions 22-26

Light pollution has affected many forms of life. Use the information in the passage to match the animals with relevant information below. Write the appropriate letters A-G in boxes 22-26 on your answer sheet.

(22) Songbirds

(23) Horseshoe bat

(24) Nightingales

(25) Bewick's swans

(26) Sea turtles

(A) eat too much and migrate in advance.
(B) would not like to sing songs at night.
(C) is attracted by the light and then a crash happens.
(D) suffers from food shortage because of competitors.
(E) have become easier targets for predators.
(F) be active at unusual times.
(G) have trouble in breeding.

Reading passage 3

The Rainmaker design

{A} SOMETIMES ideas just pop up out of the blue. Or in Charlie Paton's case, out of the rain. 'I was in a bus in Morocco traveling through the desert,' he remembers. 'It had been raining and the bus was full of hot, wet people. The windows steamed up and I went to sleep with a towel against the glass. When I woke, the thing was soaking wet. I had to wring it out. And it set me think. Why was it so wet?'

{B} The answer, of course, was condensation. Back home in London, a physicist friend, Philip Davies, explained that the glass, chilled by the rain outside, had cooled the hot humid air inside the bus below its dew point, causing droplets of water to form on the inside of the window. Intrigued, Paton--a lighting engineer by profession--started rigging up his own equipment. “I made my own solar stills. It occurred to me that you might be able to produce water in this way in the desert, simply by cooling the air. I wondered whether you could make enough to irrigate fields and grow crops.'

{C} Today, a decade on, his dream has taken shape as a giant greenhouse on a desert island off Abu Dhabi in the Persian Gulf--the first commercially viable version of his 'seawater greenhouse'. Local scientists, working with Paton, are watering the desert and growing vegetables in what is basically a giant dew-making machine that produces fresh water and cool air from sun and seawater. In awarding Paton first prize in a design competition two years ago, Marco Goldschmied, president of the Royal Institute of British Architects, called it 'a truly original idea which has the potential to impact on the lives of millions of people living in coastal water-starved areas around the world'.

{D} The seawater greenhouse as developed by Paton has three main parts. They both air-condition the greenhouse and provide water for irrigation. The front of the greenhouse faces into the prevailing wind so that hot dry air blows in through a front wall. The wall is made of perforated cardboard kept moist by a constant trickle of seawater pumped up from ocean. The purpose is to cool and moisten the incoming desert air. The cool moist air allows the plants to grow faster. And, crucially, because much less water evaporates from the leaves, the plants need much less moisture to grow than if they were being irrigated in the hot dry desert air outside the greenhouse.

{E} The air-conditioning of the interior of the greenhouse is completed by the second feature: the roof. It has two layers: an outer layer of clear polyethylene and an inner coated layer that reflects infrared radiation. This combination ensures that visible light can stream through to the plants, maximizing the rate of plant growth through photosynthesis but at the same time heat from the infrared radiation is trapped in the space between the layers, and kept away from the plants. This helps keep the air around the plants cool.

{F} At the back of the greenhouse sits the third element. This is the main water production unit. Here, the air hits a second moist cardboard wall that increases its humidity as it reaches the condenser, which finally collects from the hot humid air the moisture for irrigating the plants. The condenser is a metal surface kept cool by still more seawater. It is the equivalent of the window on Paton's Morcoccan bus. Drops of pure distilled water form on the condenser and flow into a tank for irrigating the crops.

{G} The Abu Dhabi greenhouse more or less runs itself. Sensors switch everything on when the sun rises and alter flows of air and seawater through the day in response to changes in temperature, humidity, and sunlight. On windless days, fans ensure a constant flow of air through the greenhouse. 'Once it is tuned to the local environment, you don't need anyone there for it to work,' says Paton. 'We can run the entire operation off one 13-amp plug, and in the future we could make it entirely independent of the grid, powered from a few solar panels.'

{H} Critics point out that construction costs of around $4 a square foot are quite high. By illustration, however, Paton presents that it can cool as efficiently as a 500-kilowatt air conditioner while using less than 3 kilowatts of electricity. Thus the plants need only an eighth of the volume of water used by those grown conventionally. And so the effective cost of the desalinated water in the greenhouse is only a quarter that of water from a standard desalinator, which is good economics. Besides, it really suggests an environmentally-friendly way of providing air conditioning on a scale large enough to cool large greenhouses where crops can be grown despite the high outside temperatures.

Questions 27-31

Do the following statements agree with the claims of the writer in Reading Passage? In boxes 27-31 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

(27) The idea just came to Charlie Paton by accident.

(28) The bus was well ventilated.

(29) After waking up, Paton found his towel was wet.

(30) The fan in the bus did not work well.

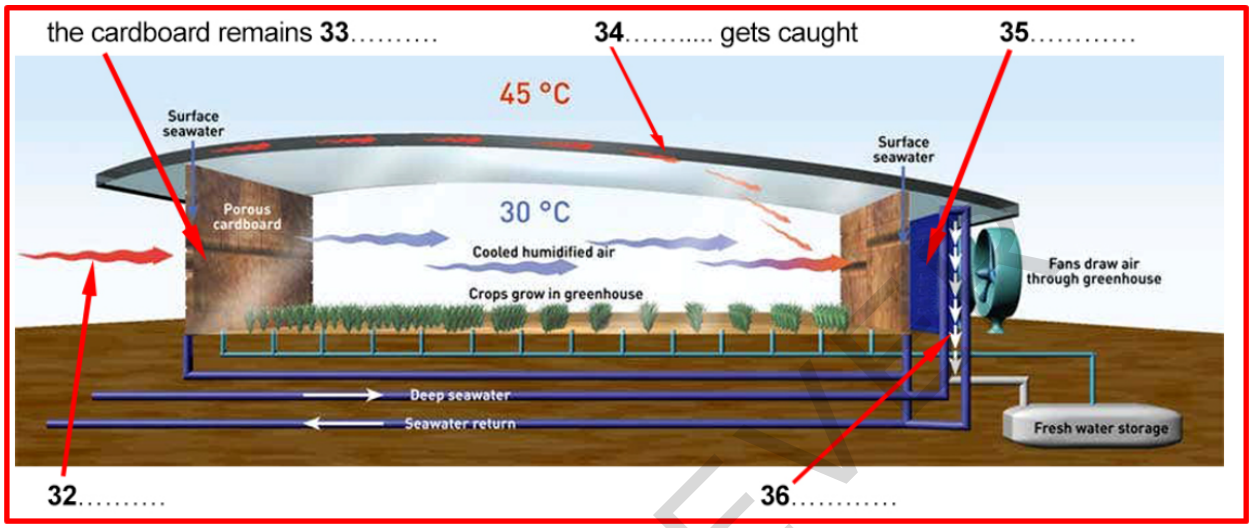
(31) Paton immediately operated his own business in Persian Gulf after talking with Philip Davies.

Questions 32-36

Label the diagram below.

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

Write your answers in boxes 32-36 on our answer sheet.



Questions 37-40

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

*Write your answers in boxes **37-40** on your answer sheet.*

To some extent, the Abu Dhabi greenhouse functions automatically.When the day is sunny, the equipment can respond to the changes in several natural elements. When there is no wind, **37**.....help to retain the flow of air. Even in the future, we have an ideal plan to power the greenhouse from **38**..... However, there are still some critics who argue that **39**.....are not good economics. To justify himself, Paton presents favorable arguments against these critics and suggests that it is an **40**.....approach to provide air conditioning in a large-scale sense.