

## IELTSFEVER ACADEMIC READING

# PRACTICE TEST 7

### Foot Pedal Irrigation

#### SECTION 1

- A Until now, governments and development agencies have tried to tackle the problem through large-scale projects: gigantic dams, sprawling irrigation canals and vast new fields of high-yield crops introduced during the Green Revolution, the famous campaign to increase grain harvests in




developing nations. Traditional irrigation, however, has degraded the soil in many areas, and the reservoirs behind dams can quickly fill up with silt, reducing their storage capacity and depriving downstream farmers of fertile sediments. Furthermore, although the Green Revolution has greatly expanded worldwide farm production since 1950, poverty stubbornly persists in Africa, Asia and Latin America. Continued improvements in the productivity of large farms may play the main role in boosting food supply, but local efforts to provide cheap, individual irrigation systems to small farms may offer a better way to lift people out of poverty.



- B The Green Revolution was designed to increase the overall food supply, not to raise the incomes of the rural poor, so it should be no surprise that it did not eradicate poverty or hunger. India, for example, has been self-sufficient in food for 15 years, and its granaries are full, but more than 200 million Indians—one fifth of the country's population—are malnourished because they cannot afford the food they need and because the country's safety nets are deficient. In 2000 189 nations committed to the Millennium Development Goals, which called for cutting world poverty in half by 2015. With business as usual, however, we have little hope of achieving most of the Millennium goals, no matter how much money rich countries contribute to poor ones.
- C The supply-driven strategies of the Green Revolution, however, may not help subsistence farmers, who must play to their strengths to compete in the global marketplace. The average size of a family farm is less than four acres in India, 1.8 acres in Bangladesh and about half an acre in China. Combines and other modern farming tools are too expensive to be used on such small areas. An Indian farmer selling surplus wheat grown on his one-acre plot could not possibly compete with the highly efficient and subsidized Canadian wheat farms that typically stretch over thousands of acres. Instead subsistence farmers should exploit the fact that their labor

costs are the lowest in the world, giving them a comparative advantage in growing and selling high-value, intensely farmed crops.

- D Paul Polak saw firsthand the need for a small-scale strategy in 1981 when he met Abdul Rahman, a farmer in the Noakhali district of Bangladesh. From his three quarter-acre plots of rain-fed rice fields, Abdul could grow only 700 kilograms of rice each year—300 kilograms less than what he needed to feed his family. During the three months before the October rice harvest came in, Abdul and his wife had to watch silently while their three children survived on one meal a day or less. As Polak walked with him through the scattered fields he had inherited from his father, Polak asked what he needed to move out of poverty. “Control of water for my crops,” he said, “at a price I can afford.”
- 
- E Soon Polak learned about a simple device that could help Abdul achieve his goal: the treadle pump. Developed in the late 1970s by Norwegian engineer Gunnar Barnes, the pump is operated by a person walking in place on a pair of treadles and two handle arms made of bamboo. Properly adjusted and maintained, it can be operated several hours a day without tiring the users. Each treadle pump has two cylinders which are made of engineering plastic. The diameter of a cylinder is 100.5mm and the height is 280mm. The pump is capable of working up to a maximum depth of 7 meters. Operation beyond 7 meters is not recommended to preserve the integrity of the rubber components. The pump mechanism has piston and foot valve assemblies. The treadle action creates alternate strokes in the two pistons that lift the water in pulses.
- F The human-powered pump can irrigate half an acre of vegetables and costs only \$25 (including the expense of drilling a tube well down to the groundwater). Abdul heard about the treadle pump from a cousin and was one of the first farmers in Bangladesh to buy one. He borrowed the \$25 from an uncle and easily repaid the loan four months later. During the five-month dry season, when Bangladeshis typically farm very little, Abdul used the treadle pump to grow a quarter-acre of chili peppers, tomatoes, cabbage and eggplants. He also improved the yield of one of his rice plots by irrigating it. His family ate some of the vegetables and sold the rest at the village market, earning a net profit of \$100. With his new income, Abdul was able to buy rice for his family to eat, keep his two sons in school until they were 16 and set aside a little money for his daughter's dowry. When Polak visited him again in 1984, he had doubled the size of his vegetable plot and replaced the thatched roof on his house with corrugated tin. His family was raising a calf and some chickens. He told me that the treadle pump was a gift from God.
- G Bangladesh is particularly well suited for the treadle pump because a huge reservoir of groundwater lies just a few meters below the farmers' feet. In the early 1980s IDE initiated a campaign to market the pump, encouraging 75 small private-sector companies to manufacture the devices and several thousand village dealers and tube-



well drillers to sell and install them. Over the next 12 years one and a half million farm families purchased treadle pumps, which increased the farmers' net income by a total of \$150 million a year. The cost of IDE's market-creation activities was only \$12 million, leveraged by the investment of \$37.5 million from the farmers themselves. In contrast, the expense of building a conventional dam and canal system to irrigate an equivalent area of farmland would be in the range of \$2,000

per acre, or \$1.5 billion.

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**Questions 1-6**

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

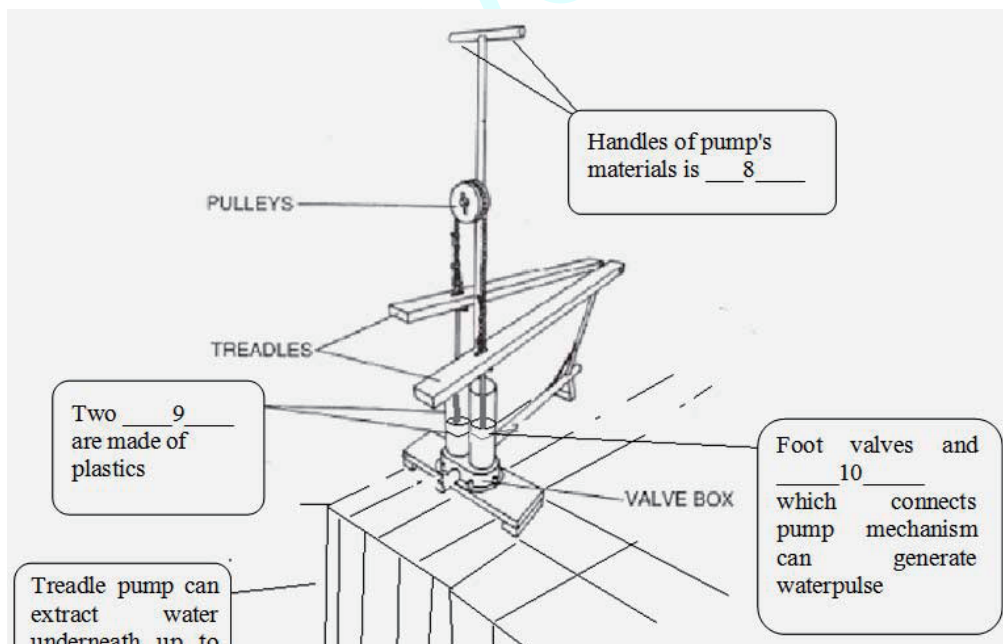
In boxes 1-6 on your answer sheet, write

<b>TRUE</b>	<i>if the statement is true</i>
<b>FALSE</b>	<i>if the statement is false</i>
<b>NOT GIVEN</b>	<i>if the information is not given in the passage</i>

- 1 It is more effective to resolve poverty or food problem in large scale rather than in small scale.
- 2 Construction of gigantic dams costs more time in developing countries.
- 3 Green revolution failed to increase global crop production from the mid of 20th century.
- 4 Agricultural production in Bangladash declined in last decade.
- 5 Farmer Abdul Rahman knew how to increase production himself.
- 6 Small pump spread into big project in Bangladesh in the past decade.

**Questions 7-11** Filling the blanks in diagram of treadle pump's each parts.

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



**Questions 12-14**

Answer the questions below.

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

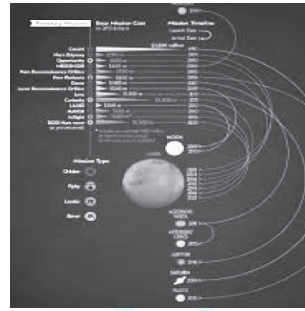
12 How large area can a treadle pump irrigate the field at a low level of expense?

13 What is Abdul's new roof made of?

14 How much did Bangladesh farmers invest by IDE's stimulation?

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## SECTION 2



- A** On Mars, signs of wetness keep pouring in: deeply carved river valleys, vast deltas and widespread remnants of evaporating seas have convinced many experts that liquid water may have covered large parts of the Red Planet for a billion years or more. But most efforts to explain how Martian climate ever permitted such clement conditions come up dry. Bitterly cold and parched today, Mars needed a potent greenhouse atmosphere to sustain its watery past. A thick layer of heat-trapping carbon dioxide from volcanoes probably shrouded the young planet, but climate models indicate time and again that CO<sub>2</sub> alone could not have kept the surface above freezing.

- B** Now, inspired by the surprising discovery that sulfur minerals are pervasive in the Martian soil, scientists are beginning to suspect that CO<sub>2</sub> had a warm-up partner: sulfur dioxide (SO<sub>2</sub>). Like CO<sub>2</sub>, SO<sub>2</sub> is a common gas emitted when volcanoes erupt, a frequent occurrence on Mars when it was still young. A hundredth or even



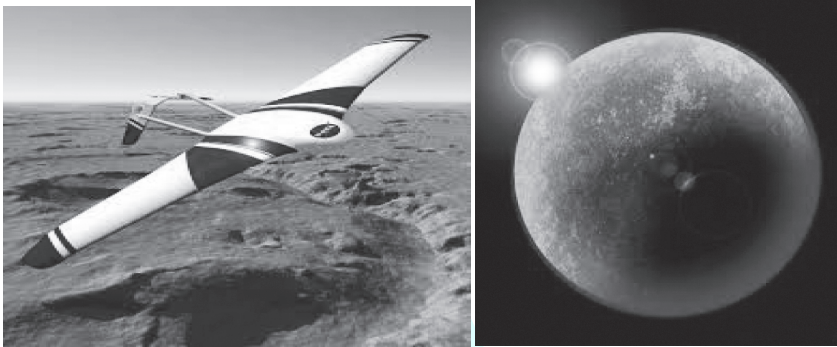
a thousandth of a percent SO<sub>2</sub> in Mars's early atmosphere could have provided the extra boost of greenhouse warming that the Red Planet needed to stay wet, explains geochemist Daniel P. Schrag of

Harvard University.

- C** That may not sound like much, but for many gases, even minuscule

concentrations are hard to maintain. On our home planet, SO<sub>2</sub> provides no significant long-term warmth because it combines almost instantly with oxygen in the atmosphere to form sulfate, a type of salt. Early Mars would have been virtually free of atmospheric oxygen, though, so SO<sub>2</sub> would have stuck around much longer.

- D** "When you take away oxygen, it's a profound change, and the atmosphere works really differently," Schrag remarks. According to Schrag and his colleagues, that difference also implies that SO<sub>2</sub> would have played a starring role in the Martian water cycle—thus resolving another climate conundrum, namely, a lack of certain rocks.



- E** Schrag's team contends that on early Mars, much of the SO<sub>2</sub> would have combined with airborne water droplets and fallen as sulfurous acid rain, rather than transforming into a salt as on Earth. The resulting acidity would have inhibited the formation of thick layers of limestone and other carbonate rocks. Researchers assumed Mars would be chock-full of carbonate rocks because their formation is such a fundamental consequence of the humid, CO<sub>2</sub>-rich atmosphere. Over millions of years, this rock-forming process has sequestered enough of the carbon dioxide spewed from earthly volcanoes to limit the buildup of the gas in the atmosphere. Stifling this CO<sub>2</sub>-sequestration step on early Mars would have forced more of the gas to accumulate in the atmosphere—another way SO<sub>2</sub> could have boosted greenhouse warming, Schrag suggests.

- F** Some scientists doubt that SO<sub>2</sub> was really up to these climatic tasks. Even in an oxygen-free atmosphere, SO<sub>2</sub> is still extremely fragile; the sun's ultraviolet radiation splits apart SO<sub>2</sub> molecules quite readily, points out James F. Kasting, an atmospheric chemist at Pennsylvania State University. In Kasting's computer models of



Earth's early climate, which is often compared with that of early Mars, this photochemical destruction capped SO<sub>2</sub> concentrations at one thousandth as much as Schrag and his colleagues describe. "There may be ways to make this idea work," Kasting says. "But it would take some detailed modeling to convince skeptics, including me, that it is actually feasible."



- G** Schrag admits that the details are uncertain, but he cites estimates by other researchers who suggest that early Martian volcanoes could have spewed enough SO<sub>2</sub> to keep pace with the SO<sub>2</sub> destroyed photochemically. Previous findings also indicate that a thick CO<sub>2</sub> atmosphere would have effectively scattered the most destructive wavelengths of ultraviolet radiation—yet another example of an apparently mutually beneficial partnership between CO<sub>2</sub> and SO<sub>2</sub> on early Mars.
- H** Kasting maintains that an SO<sub>2</sub> climate feedback could not have made early Mars as warm as Earth, but he does allow for the possibility that SO<sub>2</sub> concentrations may have remained high enough to keep the planet partly defrosted, with perhaps enough rainfall to form river valleys. Over that point, Schrag does not quibble. "Our hypothesis doesn't depend at all on whether there was a big ocean, a few lakes or just a few little puddles," he says. "Warm doesn't mean warm like the Amazon. It could mean warm like Iceland—just warm enough to create those river valleys." With SO<sub>2</sub>, it only takes a little. If sulfur dioxide warmed early Mars, as a new hypothesis suggests, minerals called sulfites would have formed in standing water at the surface. No sulfites have yet turned up, possibly because no one was looking for them. The next-generation rover, the Mars Science Laboratory, is well equipped for the search. Scheduled to launch in 2009, the rover (shown here in an artist's conception) will be the first to carry an x-ray diffractometer, which can scan and identify the crystal structure of any mineral it encounters.



**Questions 15-20**

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

Which paragraph contains the following information?

Write the correct letter **A-H**, in boxes **15-20** on your answer sheet.

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

- 15 A problem indirectly solved by SO<sub>2</sub>
- 16 A device with an astounding ability for detection
- 17 A potential contributor to the warmth of the Mars interacting with CO<sub>2</sub>
- 18 The destructive effect brought by the sunlight proposed by the opponents
- 19 A specific condition on early Mars to guarantee the SO<sub>2</sub> to maintain in the atmosphere for a long time
- 20 Conflicting climatic phenomena co-existing on the Mars

**Questions 21-23**

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

In boxes **21-23** on your answer sheet, write

<b>TRUE</b>	<i>if the statement is true</i>
<b>FALSE</b>	<i>if the statement is false</i>
<b>NOT GIVEN</b>	<i>if the information is not given in the passage</i>

- 21 Schrag has provided concrete proofs to fight against the skeptics for his view.
- 22 More and more evidences show up to be in favor of the leading role SO<sub>2</sub> has for the warming up the Mars.
- 23 The sulfites have not been detected probably because of no concern for them.

**Questions 10-13****Summary**

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

An opinion held by Schrag's team indicates that .....24..... formed from the integration of SO<sub>2</sub> with .....25..... would have stopped the built up of thick layers of limestone as well as certain carbonate rocks. Wetness and abundance in CO<sub>2</sub> could directly result in the good production rocky layer of .....26..... As time went by, sufficient CO<sub>2</sub> was emitted from the volcanoes and restricted the formation of the gas in the air. To stop this process made SO<sub>2</sub> possible to accelerate .....27..... .

**SECTION 3**

*You should spend about 20 minutes on Questions 28-40, which are based on Reading Passage 3 on the following pages.*

## *Facial expression*

- A A facial expression is one or more motions or positions of the muscles in the skin. These movements convey the emotional state of the individual to observers. Facial expressions are




a form of nonverbal communication. They are a primary means of conveying social information among aliens, but also occur in most other mammals and some other animal species. Facial expressions and their significance in the perceiver can, to some extent,

vary between cultures with evidence from descriptions in the works of Charles Darwin.


- B Humans can adopt a facial expression to read as a voluntary action. However, because expressions are closely tied to emotion, they are more often involuntary. It can be nearly impossible to avoid expressions for certain emotions, even when it would be strongly desirable to do so; a person who



is trying to avoid insulting an individual he or she finds highly unattractive might, nevertheless, show a brief expression of disgust before being able to reassume a neutral expression. Microexpressions are one example of this phenomenon. The close link between emotion and expression can also work in the other direction; it has been observed that voluntarily assuming an expression can actually cause the associated emotion.

- C Some expressions can be accurately interpreted even between members of different species- anger and extreme contentment being the primary examples. Others, however, are difficult to interpret even in familiar individuals. For instance, disgust and fear can be tough to tell apart. Because faces have only a limited range of movement, expressions rely upon fairly minuscule differences in the proportion and relative position of facial features, and reading them requires considerable sensitivity to same. Some faces are often falsely read as expressing some emotion, even when they are neutral, because their proportions naturally resemble those another face would temporarily assume when emoting.
- 
- D Also, a person's eyes reveal much about how they are feeling, or what they are thinking. Blink rate can reveal how nervous or at ease a person may be. Research by Boston College professor Joe Tecce suggests that stress levels are revealed by blink rates. He supports his data with statistics on the relation between the blink rates of presidential candidates and their success in their races. Tecce claims that the faster blinker in the presidential debates has lost every election since 1980. Though Tecce's data is interesting, it is important to recognize that non-verbal communication is multi-channelled, and focusing on only one aspect is reckless. Nervousness can also be measured by examining each candidates' perspiration, eye contact and stiffness.
- E As Charles Darwin noted in his book *The Expression of the Emotions in Man and Animals*: the young and the old of widely different races, both with man and animals, express the same state of mind by the same movements. Still, up to the mid-20th century most anthropologists believed that facial expressions were entirely learned and could therefore differ among cultures. Studies conducted in the 1960s by Paul Ekman eventually supported Darwin's belief to a large degree.
- F Ekman's work on facial expressions had its starting point in

the work of psychologist Silvan Tomkins. Ekman showed that contrary to the belief of some anthropologists including Margaret Mead, facial expressions of emotion are not culturally determined, but universal across human cultures. The South Fore people of New Guinea were chosen as subjects for one such survey. The study consisted of 189 adults and 130 children from among a very isolated population, as well as twenty three members of the culture who lived a less isolated lifestyle as a control group. Participants were told a story that described one particular emotion; they were then shown three pictures (two for children) of facial expressions and asked to match the picture which expressed the story's emotion.

- G While the isolated South Fore people could identify emotions with the same accuracy as the non-isolated control group, problems associated with the study include the fact that both fear and surprise were constantly misidentified. The study concluded that certain facial expressions correspond to particular emotions and can not be covered, regardless of cultural background, and regardless of whether or not the culture has been isolated or exposed to the mainstream.
- 
- H Expressions Ekman found to be universal included those indicating anger, disgust, fear, joy, sadness, and surprise (note that none of these emotions has a definitive social component, such as shame, pride, or schadenfreude). Findings on contempt (which is social) are less clear, though there is at least some preliminary evidence that this emotion and its expression are universally recognized. This may suggest that the facial expressions are largely related to the mind and each parts on the face can express specific emotion.

**Questions 28-32****Summary**

Complete the Summary paragraph described below. In boxes 28-33 on your answer sheet, write the correct answer with **NO MORE THAN TWO WORDS**

The result of Ekman's study demonstrates that fear and surprise are persistently .....28..... and made a conclusion that some facial expressions have something to do with certain .....29..... which is impossible covered, despite of .....30..... and whether the culture has been.....31..... or .....32.....to the mainstream.

**Questions 33-38**

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

**Which paragraph contains the following information?**

Write the correct letter **A-H**, in boxes **34-38** on your answer sheet.

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

33 the difficulty identifying the actual meaning of facial expressions

34 the importance of culture on facial expressions is initially described

35 collected data for the research on the relation between blink and the success in elections

36 the features on sociality of several facial expressions

37 an indicator to reflect one's extent of nervousness

38 the relation between emotion and facial expressions

### **Questions 39-40**

Choose two letters from the **A-E**

Write your answers in boxes 39-40 on your answer sheet.

Which **Two** of the following statements are true according to Ekman's theory?

- A** No evidence shows animals have their own facial expressions.
- B** The potential relationship between facial expressions and state of mind exists
- C** Facial expressions are concerning different cultures.
- D** Different areas on face convey certain state of mind.
- E** Mind controls men's facial expressions more obvious than women's

answers click on following link

<https://wp.me/pbcGVs-446>

answers

