Reading test

Passage 1 Foot Pedal Irrigation

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

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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.

SECTION 1: QUESTIONS 1-13

Questions 1-6 Do the following statements agree with the information given in Reading Passage?

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN If there is no information on this

1 It is more effective to resolve poverty or food problem in small scale rather than in large scale.

2 Construction of gigantic dams costs more time in developing countries.

3 Green revolution foiled to increase global crop production from the mid of 20th century.

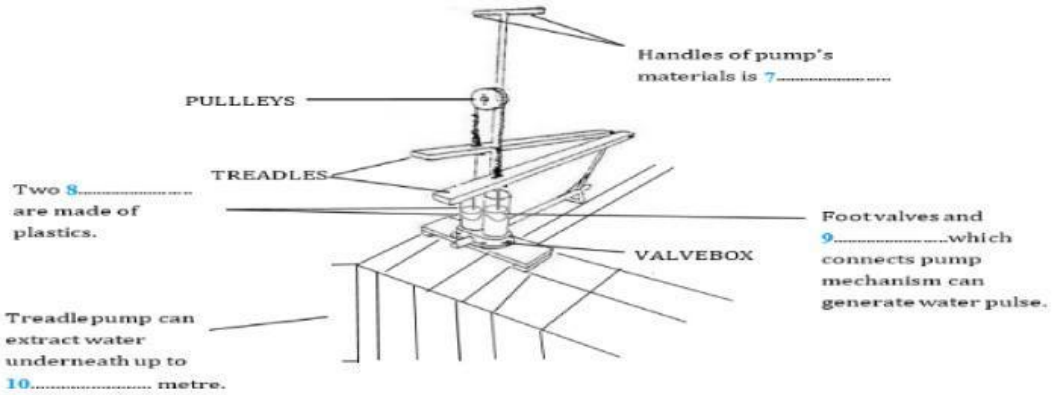
4 Agricultural production in Bangladesh declined in last decade.

5 Farmer Abdul Rahman knew how to increase production himself.

6 Small pump spread into big project in Bangladesh in the past decade.

Questions 7-10 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 11-13. Answer the questions below.

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

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

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12. What is Abdul's new roof made of?
13. How much did Bangladesh farmers invest by IDE's stimulation?

Passage 2 Learning By Examples

A Learning theory is rooted in the work of Ivan Pavlov, the famous scientist who discover and documented the principles governing how animals (humans included) learn in the 1900s. Two basic kinds of learning or conditioning occur, one of which is famously known as the classical condition. Classical conditioning happens when an animal learns to associate a neutral stimulus (signal) with a stimulus that has intrinsic meaning based on how closely in time the two stimuli are presented. The classic example of classical conditioning is a dog's ability to associate the sound of a bell (something that originally has no meaning to the dog) with the presentation of food (something that has a lot of meaning for the dog) a few moments later. Dogs are able to learn the association between bell and food, and will salivate immediately after hearing the bell once this connection has been made. Years of learning research have led to the creation of a highly precise learning theory that can be used to understand and predict how and under what circumstances most any animal will learn, including human beings, and eventually help people figure out how to change their behaviors.

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

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

D Urban black rats were found to lack the skill and were unable to learn it even if housed with experiences cone strippers. However, infants of urban mothers cross fostered to stripper mothers acquired the skill, whereas infants of stripper mothers fostered by an urban mother could not. Clearly the skill had to be learned from the mother. Further elegant experiments showed that naive adults could develop the skill if they were provided with cones from which the first complete spiral of scales had been removed, rather like our new photocopier which you can word out how to use once someone has shown you how to switch it on. In case of rats, the youngsters take cones away from the mother when she is still feeding on them, allowing them to acquire the complete stripping skill.

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

F A paper in 1996 Animal Behavior by Bednekoff and Balda provides a different view of the adaptiveness of social learning. It concerns the seed catching behavior of Clark's nutcracker (Nucifraga Columbiana) and the Mexican jay (Aphelocoma ultramarine). The former is a specialist,

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catching 30,000 or so seeds in scattered locations that it will recover over the months of winter, the Mexican jay will also cache food but is much less dependent upon this than the nutcracker. The two species also differ in their social structure, the nutcracker being rather solitary while the jay forages in social groups.

G The experiment is to discover not just whether a bird can remember where it hid a seed but also if it can remember where it saw another bird hide a seed. The design is slightly comical with a cacher bird wandering about a room with lots of holes in the floor hiding food in some of the holes, while watched by an observer bird perched in a cage. Two days later cachers and observers are tested for their discovery rate against an estimated random performance. In the role of cacher, not only nutcracker but also the less specialized jay performed above chance; more surprisingly, however, jay observers were as successful as jay cachers whereas nutcracker observers did no better than chance. It seems that, whereas the nutcracker is highly adapted at remembering where it hid its own seeds, the social living Mexican jay is more adept at remembering, and so exploiting, the caches of others.

Questions 14-17 Reading Passage has seven paragraphs, A – G.
Which paragraph contains the following information?
Write the correct letter, A – G, in boxes 1 – 4 on your answer sheet.
14 a comparison between rats, learning and human learning
15 a reference to the earliest study in animal learning
16 the discovery of who stripped the pine cone
17 a description of a cost-effectiveness experiment

Questions 18-21 Do the following statements agree with the information given in Reading Passage?
In boxes 18 – 21 on your answer sheet write
TRUE if the statement agrees with the information
FALSE if the statement contradicts the information
NOT GIVEN If there is no information on this
18 The field trip to Israel was to investigate how black rats learn to strip pine cones.
19 The pine cones were stripped from bottom to top by black rats.
20 It can be learned from other relevant experiences to use a photocopier.
21 Stripping the pine cones is an instinct of the black rats.

Questions 22-26 Complete the summary below using words from the box.
Write your answers in boxes 22 – 26 on your answer sheet.
While the Nutcracker is more able to cache see, the Jay relies 22 _____ on caching food and is thus less specialized in this ability, but more 23 _____ To study their behavior of caching and finding their caches, an experiment was designed and carried out to test these two birds for their ability to remember where they hid the seeds.
In the experiment, the cacher bird hid seeds in the ground while the other 24 _____ As a result, the Nutcracker and the Mexican Jay showed different performance in the role of 25 _____ at finding the seeds—the observing 26 _____ didn't do as well as its counterpart.

less	more	solitary	social	cacher	
observer		remembered	watched	Jay	Nutcracker

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Passage 3 The dark side of the technological boom

What are the effects on the individual of working in modern technological workplaces?

Changes in the way we work and how our offices are structured come at US faster and faster. Waves of state-of-the-art information technology and instant telecommunications let us reach anyone, anywhere, and speed is the key. Most of US are too busy struggling to keep pace with ongoing innovations to question the implications of our new electronic authority figures. According to a number of psychologists, however, the need to stay on top of the information flow and the vent degree to which we remain in touch with our offices exact a profound toll on US as individuals.

Mass exposure to technological innovations in the workplace has come too recently for psychologists to reach a consensus on its societal implications. Many agree, however, that one of the first signs of the struggle to adapt to the electronic office is often 'technostress, a cognitive shift that results from an over-identification with information systems. Psychologist Craig Brod says people become accustomed to the patterns set by electronic tools - accelerated time and yes/no logic - and internalize these patterns. When they leave the office or go home, Brod says, they need complete isolation to recover from the effects of the technology.

Brod warns that over-reliance on electronic tools could also have serious repercussions on our ability to think creatively and develop new ideas. Because we don't create in a vacuum, he points out, we need to avoid the temptation to replace informal gatherings for bouncing ideas off colleagues with electronic networking. It's also more difficult to spot errors or even evaluate the shape of a project displayed in a flat, two-dimensional way on a screen.

Electronically networked offices can also make it increasingly difficult to convince ourselves that we're doing an adequate job and accumulating enough information to make informed decisions. Philosopher Daniel Dennett points out that modern technology eliminates the possibility of unavoidable ignorance. As the opportunity to amass information grows larger, the obligation to make accurate predictions - the right decisions - becomes more onerous. Instead of consoling ourselves that we're doing as good a job as we can, we are tormented by the knowledge that the world of information is limidess.

For executives near the top of the office pyramid, the benefits of the electronic revolution - like telecommuting and flexible scheduling - may outweigh the disadvantages of being continuously on call. But in Workplace 2000, authors Joseph Boyett and Henry Conn describe a future in which millions of people now charged with analyzing information and making routine decisions will be replaced by less skilled workers using 'intelligent' software to make decisions for them. They predict that a cult of performance excellence will engulf most businesses.

The millions of people on the bottom levels of electronic hierarchies are increasingly likely to spend heir days in an isolated no-man's land, subservient to intelligent information systems that report their progress to unseen supervisors far away. Because computers measure quantity quality, such systems tend to reward employees who work faster more than those who work better.

Service people on the telephone or at a cash register curtly terminate attempts at idle conversation because their performance is being electronically monitored. Once judged on their ability to troubleshoot unexpected situations, they're now evaluated by the number of transactions they complete in a shift or the number of keystroke required to draft a sweatshops', the computers are running the people, not the other way around.

"I think people are going to feel an increased fragmentation of self. They won't be able to hold the pieces together,' human resources consultant Philip Nicholson says. "How do you keep a coherent space if you're going in and out of spaces that don't exist?' He likens the psychic numbing of electronic information overload to symptoms of post- traumatic stress syndrome (a mental disorder

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following a horrific event). In office 'wars', people become overwhelmed by the sheer amount of information available, internalize the diversity of the world outside, and fear losing com own lives.

If we are to survive the challenges of information-driven, hardwired offices, says Nicholson, we need to provide psychological support systems. As no one has yet measured the social cost of the workplace revolution, some psychologists are mobilizing efforts to pool information as it is derived. Nicholson started the Technostress International Information Network in Massachusetts to foster an exchange of data and ideas on the effects of computerization and information technology Meanwhile, Brod wants to examine the parallels between electronic work environments and sealed- cabin ecologies' like space capsules or submarines, both totally automated artificial worlds in which people live in highly confined circumstances surrounded by technology that dictates the tenor of their days as well as their survival. He is petitioning other psychologists to convince the American Psychological Association to form a specialized study group.

In addition, Brod suggests that we re-examine our value systems and that we make greater allowances for privacy in order to circumvent potential revolts against technology. We need to coevolve with technology,' he says. "These are wonderful tools, but if we exploit them without imposing appropriate values on their use, they become alienating and dangerous.'

Questions 27-29 Complete each sentence with the correct ending, A-E, below.

27 The speed of technological changes

28 A dependency on technology and computers

29 A deterioration in personal service

A results from increased electronic supervision.

B means people bave no time to challenge the significance of the new technology.

C suggests computers will take over the workplace.

D may reduce inventiveness and innovation.

E requires more detailed study by psychologists.

Questions 30-35 Look at the following statements (Questions 30-35) and the list of people below.

Match each statement with the correct person or people, A, B, c or D.

NB You may use any letter more than once.

30 Technology has placed greater expectations on workers not to make mistakes.

31 People will need time away from technology to reduce the frustrations caused by it.

32 Interacting with others at work contributes to creative thinking.

33 The psychological effect of working with technology is similar to the anxiety felt after surviving a major ordeal.

34 Technology will ultimately increase unemployment for more highly qualified personnel.

35 More counselling is required to help people cope with the demands of the modern workplace.

List of People

A Daniel Dennett B Craig Brod

C Joseph Boyett and Henry Conn D Philip Nicholson

Questions 36-40 Do the following statements agree with the information given in Reading Passage?

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

36 Our knowledge of the effects of technology on workers is still limited.

37 An early indicator of technological anxiety is a tendency to adopt machine-like thinking.

38 We have now started to doubt our ability to perform well at work.

39 Top level managers may be more negatively affected by changes electronic workplace than junior workers.

40 Employees who learn to use new technology quickly will get promoted.

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