Section 1

Dirty River But Clean Water

Floods can occur in rivers when the flow rate exceeds the capacity of the river channel, particularly at bends or meanders in the waterway. Floods often cause damage to homes and businesses if they are in the natural flood plains of rivers. While riverine flood damage can be eliminated by moving away from rivers and other bodies of water, people have traditionally lived and worked by rivers because the land is usually flat and fertile and because rivers provide easy travel and access to commerce and industry.

A Fire and flood are two of humanity's worst nightmares. People have, therefore, always sought to control them. Forest fires are snuffed out quickly. The flow of rivers is regulated by weirs and dams. At least, that is how it used to be. But foresters have learned that forests need fires to clear out the brash and even to get seeds to germinate. And a similar revelation is now – dawning on hydrologists. Rivers – and the ecosystems they support – need floods. That is why a man-made torrent has been surging down the Grand Canyon. By Thursday March 6th it was running at full throttle, which was expected to be sustained for 60 hours.

B Floods once raged through the canyon every year. Spring Snow from as far away as Wyoming would melt and swell the Colorado river to a flow that averaged around 1,500 cubic metres (50,000 cubic feet) a second. Every eight years or so, that figure rose to almost 3,000 cubic metres. These floods infused the river with sediment, carved its beaches and built its sandbars.

C However, in the four decades since the building of the Glen Canyon dam, just upstream of the Grand Canyon, the only sediment that it has collected has come from tiny, undammed tributaries. Even that has not been much use as those tributaries are not powerful enough to distribute the sediment in an ecologically valuable way.

D This lack of flooding has harmed local wildlife. The humpback chub, for example, thrived in the rust-redwaters of the Colorado. Recently, though, its population has crashed. At first sight, it looked as if the reason was that the chub

were being eaten by trout introduced for sport fishing in the mid-20th century. But trout and chub co-existed until the Glen Canyon dam was built, so something else is going on. Steve Gloss, of the United States' Geological Survey (USGS), reckons that the chub's decline is the result of their losing their most valuable natural defense, the Colorado's rusty sediment. The chub were well adapted to the poor visibility created by the thick, red water which gave the river its name, and depended on it to hide from predators. Without the cloudy water the chubbe came vulnerable.

E And the chub are not alone. In the years since the Glen Canyon dam was built, several species have vanished

altogether. These include the Colorado pike-minnow, the razorback sucker and the round-tail chub. Meanwhile, aliens including fathead minnows, channel catfish and common carp, which would have been hard, put to survive in the savage waters of the undammed canyon, have move din.

F So flooding is the obvious answer. Unfortunately, it is easier said than done. Floods were sent down the Grand Canyon in 1996 and 2004 and the results were mixed. In 1996 the flood was allowed to go on too long. To start with, all seemed well. The floodwaters built up sandbanks and infused the river with sediment. Eventually, however, the continued flow washed most of the sediment out of the canyon. This problem was avoided in 2004, but unfortunately, on that occasion, the volume of sand available behind the dam was too low to rebuild the sandbanks. This time, the USGS is convinced that things will be better. The amount of sediment available is three times greater than it was in 2004. So if a flood is going to do some good, this is the time to unleash one.

G Even so, it may turn out to be an empty gesture. At less than 1,200 cubic metres a second, this flood is smaller than even an average spring flood, let alone one of the mightier deluges of the past. Those glorious inundations moved massive quantities of sediment through the Grand Canyon,wiping the slate dirty, and making a muddy mess of silt and muck that would make modern river rafters cringe.

Questions 1-7

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

*In boxes **1-7** on your answer sheet, write*

TURE *if the statement agrees with the information*

FALSE *if the statement contradicts the information*

NOT GIVEN *if there is no information on this*

1 Damage caused by fire is worse than that caused by flood.

2 The flood peaks at almost 1500 cubic meters every eight years.

3 Contribution of sediments delivered by tributaries has little impact.

4 Decreasing number of chubs is always caused by introducing of trout since mid 20th century.

5 It seemed that the artificial flood in 1996 had achieved success partly at the very beginning.

6 In fact, the yield of artificial flood water is smaller than an average natural flood at present.

7 Mighty floods drove fast moving flows with clean and high quality water.

Questions 8-13

Complete the summary below.

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

*Write your answers in boxes **8-13** on your answer sheet.*

The eco-impact of the Canyon Dam

Floods are people's nightmare. In the past, canyon was raged by flood every year. The snow from far Wyoming would melt in the season of **8**…… and caused a flood flow peak in Colorado river. In the four decades after people built the Glen Canyon dam, it only could gather **9**…… together from tiny, undammed tributaries.

Humpback chub population on reduced, why?

Then, several species disappeared including Colorado pike-minnow, **10**…… and the round-tail chub. Meanwhile, some moved in such as fathead minnows, channel catfish and **11**…… . The non-stopped flow leaded to the washing away of the sediment out of the canyon, which poses great threat to the chubs because it has poor **12**……. away from predators. In addition, the volume of **13**…… available behind the dam was too low to rebuild the bars and flooding became more serious.

Section 2

Food of thought

A. THERE are not enough classrooms at the Msekeni primary school, so half the lessons take place in the shade of yellow-blossomed acacia trees. Given this shortage, it might seem odd that one of the school‘s purpose-built classrooms has been emptied of pupils and turned into a storeroom for sacks of grain. But it makes sense. Food matters more than shelter.

B. Msekeni is in one of the poorer parts of Malawi, a landlocked southern African country of exceptional beauty and great poverty. No war lays waste Malawi, nor is the land unusually crowded or infertile, but Malawians still have trouble finding enough to eat. Half of the children under five are underfed to the point of stunting. Hunger blights most aspects of Malawian life, so the country is as good a place as any to investigate how nutrition affects development, and vice versa.

C. The headmaster at Msekeni, Bernard Kumanda, has strong views on the subject. He thinks food is a priceless teaching aid. Since 1999, his pupils have received free school lunches. Donors such as the World Food Programme (WFP) provide the food: those sacks of grain (mostly mixed maize and soyabean flour, enriched with vitamin A) in that converted classroom. Local volunteers do the cooking – turning the dry ingredients into a bland but nutritious slop, and spooning it out on to plastic plates. The children line up in large crowds, cheerfully singing a song called ―We are getting porridge‖.

D. When the school‘s feeding programme was introduced, enrolment at Msekeni doubled. Some of the new pupils had switched from nearby schools that did not

give out free porridge, but most were children whose families had previously kept them at home to work. These families were so poor that the long-term benefits of education seemed unattractive when set against the short-term gain of sending children out to gather firewood or help in the fields. One plate of porridge a day completely altered the calculation. A child fed at school will not howl so plaintively for food at home. Girls, who are more likely than boys to be kept out of school, are given extra snacks to take home.

E. When a school takes in a horde of extra students from the poorest homes, you would expect standards to drop. Anywhere in the world, poor kids tend to perform worse than their better-off classmates. When the influx of new pupils is not accompanied by any increase in the number of teachers, as was the case at Msekeni, you would expect standards to fall even further. But they have not. Pass rates at Msekeni improved dramatically, from 30% to 85%. Although this was an exceptional example, the nationwide results of school feeding programmes were still pretty good. On average, after a Malawian school started handing out free food it attracted 38% more girls and 24% more boys. The pass rate for boys stayed about the same, while for girls it improved by 9.5%.

F. Better nutrition makes for brighter children. Most immediately, well-fed children find it easier to concentrate. It is hard to focus the mind on long division when your stomach is screaming for food. Mr. Kumanda says that it used to be easy to spot the kids who were really undernourished. ―They were the ones who stared into space and didn‘t respond when you asked them questions,‖ he says. More crucially, though, more and better food helps brains grow and develop. Like any other organ in the body, the brain needs nutrition and exercise. But if it is starved of the necessary calories, proteins and micronutrients, it is stunted, perhaps not as severely as a muscle would be, but stunted nonetheless. That is why feeding children at schools works so well. And the fact that the effect of feeding was more pronounced on girls than on boys gives a clue to who eats first in rural Malawian households. It isn‘t the girls.

G. On a global scale, the good news is that people are eating better than ever before. Homo sapiens has grown 50% bigger since the industrial revolution. Three centuries ago, chronic malnutrition was more or less universal. Now, it is extremely rare in rich countries. In developing countries, where most people live,

plates and rice bowls are also fuller than ever before. The proportion of children under five in the developing world who are malnourished to the point of stunting fell from 39% in 1990 to 30% in 2000, says the World Health Organization (WHO). In other places, the battle against hunger is steadily being won. Better nutrition is making people cleverer and more energetic, which will help them grow more prosperous. And when they eventually join the ranks of the well off, they can start fretting about growing too fat.

Questions 14 – 20

The reading passage has seven paragraphs, **A – G.**

Choose the correct heading for paragraphs **A – G** from the list below.

Write the correct number, **i – xi**, in boxes **1 – 7** on your answer sheet.

List of Headings

i Why better food helps students‘ learning ii A song for getting porridge
iii Surprising use of school premises
iv Global perspective v Brains can be starved
vi Surprising academics outcome
vii Girls are specially treated in the program
viii How food program is operated
ix How food program affects school attendance

x None of the usual reasons
xi How to maintain academic standard

14 Paragraph A
15 Paragraph B
16 Paragraph C
17 Paragraph D
18 Paragraph E
19 Paragraph F
20 Paragraph G

Questions 21 – 24

Complete the sentences below using **NO MORE THAN TWO WORDS AND/OR A NUMBER** from the passage.

Write your answer in boxes **21 – 24** on your answer sheet.

21 _____ are exclusively offered to girls in the feeding programme.

22 Instead of going to school, many children in poverty are sent to collect _____ in the fields.

23 The pass rate at Msekeni has risen to **24** _____ with the help of the feeding programme.

25 Since the industrial revolution, the size of the modern human has grown by _____.

Questions 26 – 27

Choose **TWO** letters, **A – F.**

Write your answers in boxes 12 and 13 on your answer sheet.
Which **TWO** of the following statements are true?
A Some children are taught in the open air.
B Malawi have trouble to feed its large population.
C No new staffs were recruited when attendance rose.
D Girls enjoy a higher status than boys in the family.
E Boys and girls experience the same improvement in the pass rate.
F Who has cooperated with WFP to provide grain to the school at Msekeni.

Company Innovation

A. In a scruffy office in midtown Manhattan, a team of 30 artificial intelligence programmers is trying to simulate the brains of an eminent sexologist, a well-

known dietician, a celebrity fitness trainer and several other experts. Umagic Systems is a young firm, setting up websites that will allow clients to consult the virtual versions of these personalities. Subscribers will feed in details about themselves and their goals; Umagic‘s software will come up with the advice that the star expert would give. Although few people have lost money betting on the neuroses of the American consumer, Umagic‘s prospects are hard to gauge (in ten years‘ time, consulting a computer about your sex life might seem natural, or it might seem absurd). But the company and others like it are beginning to spook large American firms, because they see such half-barmy “innovative” ideas as the key to their own future success.

B. Innovation has become the buzz-word of American management. Firms have found that most of the things that can be outsourced or reengineered have been (worryingly, by their competitors as well). The stars of American business tend today to be innovators such as Dell, Amazon and WalMart, which have produced ideas or products that have changed their industries.

C. A new book by two consultants from Arthur D. Little records that, over the past 15 years, the top 20% of firms in an annual innovation poll by Fortune magazine have achieved double the shareholder returns of their peers. Much of today‘s merger boom is driven by a desperate search for new ideas. So is the fortune now spent on licensing and buying others‘ intellectual property. According to the Pasadena-based Patent & Licence Exchange, trading in intangible assets in the United States has risen from $15 billion in 1990 to $100 billion in 1998, with an increasing proportion of the rewards going to small firms and individuals.

D. And therein lies the terror for big companies: that innovation seems to work best outside them. Several big established “ideas factories”, including 3M, Procter & Gamble and Rubbermaid, have had dry spells recently. Gillette spent ten years and $1 billion developing its new Mach 3 razor; it took a British supermarket only a year or so to produce a reasonable imitation. “In the management of creativity, size is your enemy”, argues Peter Chernin, who runs the Fox TV and film empire for News Corporation. One person managing 20 movies is never going to be as involved as one doing five movies. He has thus tried to break down the studio into smaller units—even at the risk of incurring higher costs.

E. It is easier for ideas to thrive outside big firms these days. In the past, if a clever scientist had an idea he wanted to commercialize, he would take it first to a big company. Now, with plenty of cheap venture capital, he is more likely to set up on his own. Umagic has already raised $5m and is about to raise $25m more. Even in capital-intensive businesses such as pharmaceuticals, entrepreneurs can conduct early-stage research, selling out to the big firms when they reach expensive, risky clinical trials. Around a third of drug firms‘ total revenue now comes from licensed-in technology.

F. Some giants, including General Electric and Cisco, have been remarkably successful at snapping up and integrating scores of small companies. But many others worry about the prices they have to pay and the difficulty in hanging on to the talent that dreamt up the idea. Everybody would like to develop more ideas inhouse. Procter & Gamble is now shifting its entire business focus from countries to products; one aim is to get innovations accepted across the company. Elsewhere, the search for innovation has led to a craze for “intrapreneurship”—devolving power and setting up internal ideasfactories and tracking stocks so that talented staff will not leave.

G. Some people think that such restructuring is not enough. In a new book Clayton Christensen argues that many things which established firms do well, such as looking after their current customers, can hinder the sort of innovative behavior needed to deal with disruptive technologies. Hence the fashion for cannibalization setting up businesses that will actually fight your existing ones. Bank One, for instance, has established Wingspan, an Internet bank that competes with its real branches (see article). Jack Welch‘s Internet initiative at General Electric is called “Destroyyourbusiness.com”.

H. Nobody could doubt that innovation matters. But need large firms be quite so pessimistic? A recent survey of the top 50 innovations in America, by Industry Week, a journal, suggested that ideas are as likely to come from big firms as from small ones. Another sceptical note is sounded by Amar Bhide, a colleague of Mr. Christensen‘s at the Harvard Business School and the author of another book on entrepreneurship. Rather than having to reinvent themselves, big companies, he believes, should concentrate on projects with high costs and low uncertainty, leaving those with low costs and high uncertainty to small entrepreneurs. As ideas

mature and the risks and rewards become more quantifiable, big companies can adopt them.

I. At Kimberly-Clark, Mr. Sanders had to discredit the view that jobs working on new products were for “those who couldn‘t hack it in the real business”. He has tried to change the culture not just by preaching fuzzy concepts but also by introducing hard incentives, such as increasing the rewards for those who come up with successful new ideas and, particularly, not punishing those whose experiments fail. The genesis of one of the firm‘s current hits, Depend, a more dignified incontinence garment, lay in a previous miss, Kotex Personals, a form of disposable underwear for menstruating women.

J. Will all this creative destruction, cannibalization and culture tweaking make big firms more creative? David Post, the founder of Umagic, is sceptical: “The only successful intrapreneurs are ones who leave and become entrepreneurs”. He also recalls with glee the looks of total incomprehension when he tried to hawk his “virtual experts” idea three years ago to the idea labs of firms such as IBM— though, as he cheerfully adds, “of course, they could have been right”. Innovation— unlike, apparently, sex, parenting and fitness— is one area where a computer cannot tell you what to do.

Questions 28-33

The reading Passage has ten paragraphs **A-J**. Which paragraph contains the following information? Write the correct letter **A-J**, in boxes **28-33** on your answer sheet.

NB You may use any letter more than once.

28 Approach to retain best employees

29 Safeguarding expenses on innovative idea

30 Integrating outside firms might produce certain counter effect

31 Example of three famous American companies‘ innovation

32 Example of one company changing its focus

33 Example of a company resolving financial difficulties itself

Questions 34-37

Do the following statements agree with the information given in **Reading Passage 3**? In boxes **34-37** 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

34 Umagic is the most successful innovative company in this new field.

35 Amazon and Wal-Mart exchanged their innovation experience.

36 New idea holder had already been known to take it to small company in the past.

37 IBM failed to understand Umagic‘s proposal of one new idea.

Questions 38-40

Choose the correct letter **A, B, C or D**. Write your answers in boxes **38-40** on your answer sheet.

38 What is author‘s opinion on the effect of innovation in **paragraph C**?

A It only works for big companies

B Fortune magazine has huge influence globally

C It is getting more important

D Effect on American companies is more evident

39 What is Peter Chernin‘s point of view on innovation?

A Small company is more innovative than big one

B Film industry need more innovation than other industries

C We need to cut the cost when risks occur

D New ideas are more likely going to big companies

40 What is author‘s opinion on innovation at the end of this passage?

A Umagic success lies on the accidental “virtual experts”

B Innovation is easy and straightforward

C IBM sets a good example on innovation

D The author‘s attitude is uncertain on innovation