

# ACADEMIC READING PRACTICE TEST 4

## READING PASSAGE 1

## Questions 1 - 14

You should spend about 20 minutes on Questions 1 – 14 which are based on Reading Passage 1 below.

### Questions 1 - 6

Reading Passage 1 has 7 paragraphs (**A – G**).

From the list of headings below choose the most suitable headings for paragraphs **B – G**.

Write the appropriate number (**i – xi**) in boxes **14 – 19** on your answer sheet.

NB There are more headings than paragraphs, so you will not use them all.

<i>Example</i>	<i>Answer</i>
Paragraph A	iv

- |      |                                    |
|------|------------------------------------|
| i    | Factory Closures                   |
| ii   | The Human Cost                     |
| iii  | The Tragedy of State Mismanagement |
| iv   | A Warning to the World             |
| v    | European Techniques                |
| vi   | Destructive Trawling Technology    |
| vii  | Lessons to be Learned              |
| viii | The Demise of the Northern Cod     |
| ix   | Canadian Fishing Limits            |
| x    | The Breaking of Agreements         |
| xi   | Foreign Over-fishing               |

- 1 Paragraph B
- 2 Paragraph C
- 3 Paragraph D
- 4 Paragraph E
- 5 Paragraph F
- 6 Paragraph G

## COD IN TROUBLE

### A

In 1992, the devastating collapse of the cod stocks off the East coast of Newfoundland forced the Canadian government to take drastic measures and close the fishery. Over 40,000 people lost their jobs, communities are still struggling to recover and the marine ecosystem is still in a state of collapse. The disintegration of this vital fishery sounded a warning bell to governments around the world who were shocked that a relatively sophisticated, scientifically based fisheries management program, not unlike their own, could have gone so wrong. The Canadian government ignored warnings that their fleets were employing destructive fishing practices and refused to significantly reduce quotas citing the loss of jobs as too great a concern.

### B

In the 1950s Canadian and US east coast waters provided an annual 100,000 tons in cod catches rising to 800,000 by 1970. This over fishing led to a catch of only 300,000 tons by 1975. Canada and the US reacted by passing legislation to extend their national jurisdictions over marine living resources out to 200 nautical miles and catches naturally declined to 139,000 tons in 1980. However the Canadian fishing industry took over and restarted the over fishing and catches rose again until, from 1985, it was the Canadians who were landing more than 250,000 tons of northern cod annually. This exploitation ravaged the stocks and by 1990 the catch was so low (29,000 tons) that in 1992 (12½000 tons) Canada had to ban all fishing in east coast waters. In a fishery that had for over a century yielded a quarter-million ton catches, there remained a biomass of less than 1700 tons and the fisheries department also predicted that, even with an immediate recovery, stocks need at least 15 years before they would be healthy enough to withstand previous levels of fishing.

### C

The devastating fishing came from massive investment poured into constructing huge “draggers”. Draggers haul enormous nets held open by a combination of huge steel plates and heavy chains and rollers that plough the ocean bottom. They drag up anything in the way, inflicting immense damage, destroying critical habitat and contributing to the destabilization of the northern cod

ecosystem. The draggers targeted huge aggregations of cod while they were spawning, a time when the fish population is highly vulnerable to capture. Excessive trawling on spawning stocks became highly disruptive to the spawning process and ecosystem. In addition, the trawling activity resulted in a physical dispersion of eggs leading to a higher fertilization failure. Physical and chemical damage to larvae caused by the trawling action also reduced their chances of survival. These draggers are now banned forever from Canadian waters.

## D

Canadian media often cite excessive fishing by overseas fleets, primarily driven by the capitalist ethic, as the primary cause of the fishing out of the north Atlantic cod stocks. Many nations took fish off the coast of Newfoundland and all used deep-sea trawlers, and many often blatantly exceeded established catch quotas and treaty agreements. There can be little doubt that non North American fishing was a contributing factor in the cod stock collapse, and that the capitalist dynamics that were at work in Canada were all too similar for the foreign vessels and companies. But all of the blame cannot be put there, no matter how easy it is to do, as it does not account for the management of the resources.

## E

Who was to blame? As the exploitation of the Newfoundland fishery was so predominantly guided by the government, we can argue that a fishery is not a private area, as the fisher lacks management rights normally associated with property and common property. The state had appropriated the property, and made all of the management decisions. Fishermen get told who can fish, what they can fish, and essentially, what to do with the fish once it is caught. In this regard then, when a resource such as the Newfoundland fishery collapses, it is more a tragedy of government negligence than a tragedy of the general public.

## F

Following the '92 ban on northern cod fishing and most other species, an estimated 30 thousand people that had already lost their jobs after the 1992 Northern Cod moratorium took effect, were joined by an additional 12,000 fishermen and plant workers. With more than forty thousand people out of jobs, Newfoundland became an economic disaster area, as processing plants shut down, and vessels from the smallest dory to the monster draggers were made idle or sold overseas at bargain prices. Several hundred Newfoundland communities were devastated.

## G

Europeans need only look across the North Atlantic to see what could be in store for their cod fishery. In Canada they were too busy with making plans, setting expansive goals, and then allocating fish, and lots of it, instead of making sound business plans to match fishing with the limited availability of the resource. Cod populations in European waters are now so depleted that scientists have recently warned that "all fisheries in this area that target cod should be closed." The Canadian calamity demonstrates that we now have the technological capability to find and annihilate every commercial fish stock, in any ocean and do irreparable damage to entire ecosystems in the process. In Canada's case, a two billion dollar recovery bill may only be a part of the total long-term costs. The costs to individuals and desperate communities now deprived of meaningful and sustainable employment is staggering.

## Questions 7 - 10

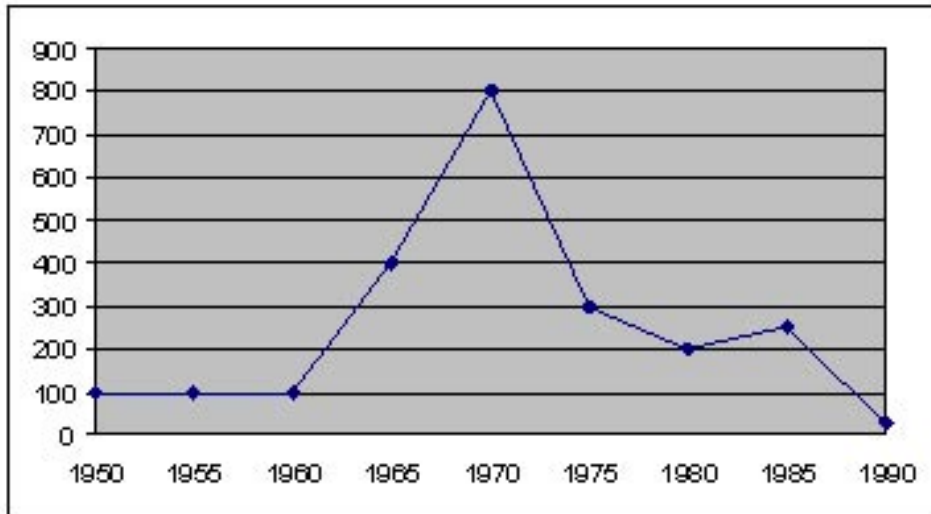
Choose the appropriate letters **A – D** and write them in boxes **7 – 10** on your answer sheet.

7 The Canadian government didn't want to reduce cod catches pre 1992 because they were worried about...

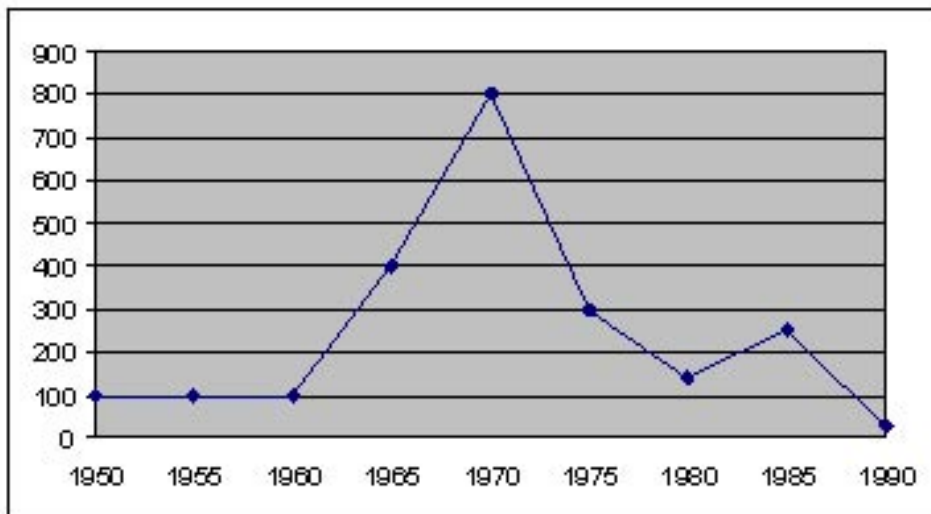
- A possible rising unemployment
- B the ecological effects
- C the marine ecosystem
- D drastic measures

8 Which graph most accurately describes Canadian cod catches from 1950 to 1992?

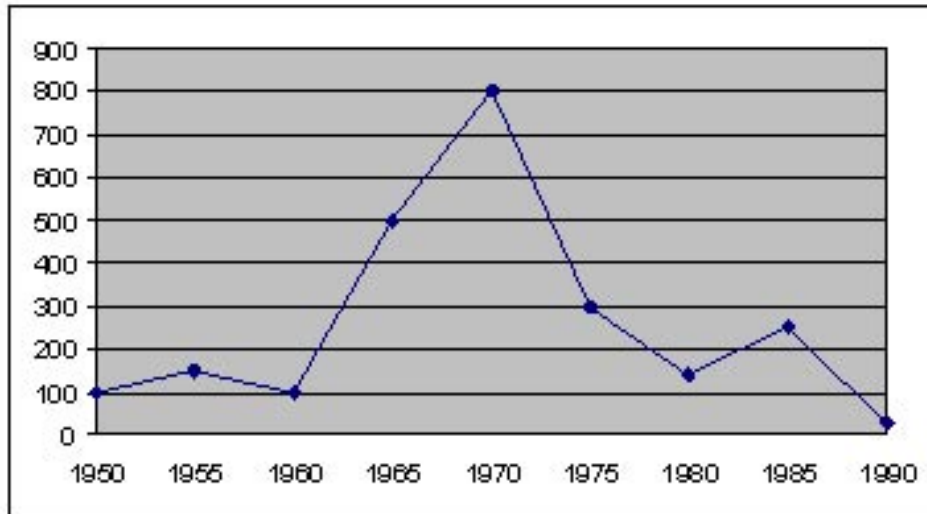
A



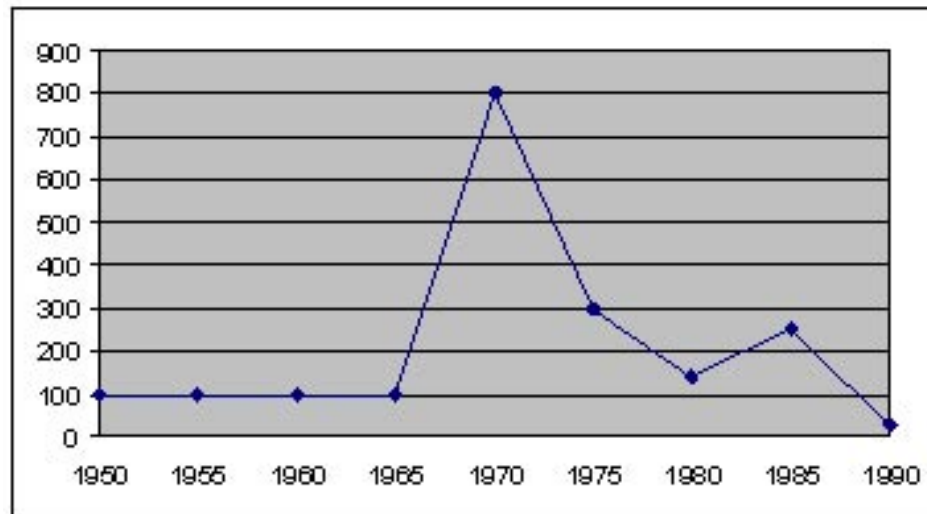
B



C



D



- 9 According to Reading Passage 1, which of the following is now true about the Newfoundland fisheries?
- A Catches of 1700 tons a year only are permitted.
  - B Normal fishing could start again in 2007.
  - C No cod fishing is allowed but some other species can be caught.
  - D Fishing with draggers will be allowed again in 2007.
- 10 Who does the writer blame for the collapse of the Newfoundland cod fishery?
- A The Canadian fishing industry.
  - B The foreign fishing industry.
  - C The Canadian government.
  - D The US fishing industry.

## Questions 11 - 14

Do the following statements agree with the views of the writer of the reading passage on Cod in Trouble?

In Boxes 11 - 14 write:

**YES**                      *if the statement agrees with the writer*

**NO**                        *if the statement doesn't agree with the writer*

**NOT GIVEN**        *if it is impossible to say what the writer thinks about this*

- 11    Disruption of cod breeding was a major factor in the Newfoundland cod disaster.
- 12    Foreign trawlers frequently broke the catch allowances.
- 13    There was often conflict between the foreign fishermen and the Canadian authorities.
- 14    Europe does not face the seriousness of the Canadian disaster.

## READING PASSAGE 2

## Questions 15 - 27

You should spend about 20 minutes on Questions 15 – 27 which are based on Reading Passage 2 on the following pages.

### The Rise of Antibiotic-Resistant Infections

#### A

When penicillin became widely available during the Second World War, it was a medical miracle, rapidly vanquishing the biggest wartime killer - infected wounds. Discovered initially by a French medical student, Ernest Duchesne, in 1896, and then rediscovered by Scottish physician Alexander Fleming in 1928, Penicillium crippled many types of disease-causing bacteria. But just four years after drug companies began mass-producing penicillin in 1943, microbes began appearing that could resist it.

#### B

“There was complacency in the 1980s. The perception was that we had licked the bacterial infection problem. Drug companies weren’t working on new agents. They were concentrating on other areas, such as viral infections,” says Michael Blum, M.D., medical officer in the Food and Drug Administration’s division of anti-infective drug products. “In the meantime, resistance increased to a number of commonly used antibiotics, possibly related to overuse. In the 1990s, we’ve come to a point for certain infections that we don’t have agents available.”

#### C

The increased prevalence of antibiotic resistance is an outcome of evolution. Any population of organisms, bacteria included, naturally includes variants with unusual traits - in this case, the ability to withstand an antibiotic’s attack on a microbe. When a person takes an antibiotic, the drug kills the defenceless bacteria, leaving behind - or “selecting,” in biological terms - those that can resist it. These renegade bacteria then multiply, increasing their numbers a million fold in a day, becoming the predominant microorganism. “Whenever antibiotics are used, there is selective pressure for resistance to occur. More and more organisms develop resistance to more and more drugs,” says Joe Cranston, Ph.D., director of the department of drug policy and standards at the American Medical Association in Chicago.

#### D

Disease-causing microbes thwart antibiotics by interfering with their mechanism of action. For example, penicillin kills bacteria by attaching to their cell walls, then destroying a key part of the wall. The wall falls apart, and the bacterium dies. Resistant microbes, however, either alter their cell walls so penicillin can’t bind or produce enzymes that dismantle the antibiotic.

Antibiotic resistance results from gene action. Bacteria acquire genes conferring resistance in different ways. Bacterial DNA may mutate spontaneously. Drug-resistant tuberculosis arises this way. Another way is called transformation where one bacterium may take up DNA from another bacterium. Most frightening, however, is resistance acquired from a small circle of DNA called a

plasmid, which can flit from one type of bacterium to another. A single plasmid can provide a slew of different resistances.

## E

Many of us have come to take antibiotics for granted. A child develops a sore throat or an ear infection, and soon a bottle of pink medicine makes everything better. Linda McCaig, a scientist at the CDC, comments that “many consumers have an expectation that when they’re ill, antibiotics are the answer. Most of the time the illness is viral, and antibiotics are not the answer. This large burden of antibiotics is certainly selecting resistant bacteria.” McCaig and Peter Killeen, a fellow scientist at the CDC, tracked antibiotic use in treating common illnesses. The report cites nearly 6 million antibiotic prescriptions for sinusitis alone in 1985, and nearly 13 million in 1992. Ironically, advances in modern medicine have made more people predisposed to infection. McCaig notes that “there are a number of immunocompromised patients who wouldn’t have survived in earlier times. Radical procedures produce patients who are in difficult shape in the hospital, and there is routine use of antibiotics to prevent infection in these patients.”

## F

There are measures we can take to slow the inevitable resistance. Barbara Murray, M.D., of the University of Texas Medical School at Houston writes that “simple improvements in public health measures can go a long way towards preventing infection”. Such approaches include more frequent hand washing by health-care workers, quick identification and isolation of patients with drug-resistant infections, and improving sewage systems and water purity.

Drug manufacturers are also once again becoming interested in developing new antibiotics. The FDA is doing all it can to speed development and availability of new antibiotic drugs. “We can’t identify new agents - that’s the job of the pharmaceutical industry. But once they have identified a promising new drug, what we can do is to meet with the company very early and help design the development plan and clinical trials,” says Blum. In addition, drugs in development can be used for patients with multi-drug-resistant infections on an emergency compassionate use basis for people with AIDS or cancer, for example.” Blum adds.

Appropriate prescribing is important. This means that physicians use a narrow spectrum antibiotics - those that target only a few bacterial types - whenever possible, so that resistances can be restricted. “There has been a shift to using costlier, broader spectrum agents. This prescribing trend heightens the resistance problem because more diverse bacteria are being exposed to antibiotics,” writes Killeen. So, while awaiting the next wonder drug, we must appreciate, and use correctly, the ones that we already have.

Another problem with antibiotic use is that patients often stop taking the drug too soon, because symptoms improve. However, this merely encourages resistant microbes to proliferate. The infection returns a few weeks later, and this time a different drug must be used to treat it. The conclusion: resistance can be slowed if patients take medications correctly.

Source: US Food and Drug Administration

## Questions 15 - 21

Match the views (15 – 21) with the people listed below.

Write the appropriate letters in boxes 15 - 21 on your answer sheet.

- 15 Antibiotics are sometimes used to only prevent infections.
- 16 Choosing the correct antibiotic for particular infections is important.
- 17 Today there are some bacterial infections for which we have no effective antibiotic.
- 18 Untested drugs can be used on terminal patients as a last resort.
- 19 Resistance develops every time an antibiotic is used.
- 20 Merely washing hands can have a positive effect.
- 21 Antibiotics are often impotently used against viruses.

<b>PK</b>	Peter Killeen
<b>JC</b>	Joe Cranston
<b>LM</b>	Linda McCaig
<b>MB</b>	Michael Blum
<b>BM</b>	Barbara Murray

## Questions 22 - 27

Reading Passage 2 has 6 paragraphs (A - F). Which paragraphs concentrate on the following information? Write the appropriate letters (A - F) in boxes 22 - 27 on your answer sheet.

- 22 How antibiotic resistance happens.
- 23 The survival of the fittest bacteria.
- 24 Factors to consider in solving the antibiotic-resistant bacteria problem.
- 25 The impact of the discovery of the first antibiotic.
- 26 The misuse and overuse of antibiotics.
- 27 The cessation of research into combating bacterial infections.

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

### **Hydroelectric Power**

Hydroelectric power is America's leading renewable energy resource. Of all the renewable power sources, it's the most reliable, efficient, and economical. Water is needed to run a hydroelectric generating unit. It's held in a reservoir or lake behind a dam, and the force of the water being released from the reservoir through the dam spins the blades of a turbine. The turbine is connected to the generator that produces electricity. After passing through the turbine, the water re-enters the river on the downstream side of the dam.

Hydroelectric plants convert the kinetic energy within falling water into electricity. The energy in moving water is produced in the sun, and consequently is continually being renewed. The energy in sunlight evaporates water from the seas and deposits it on land as rain. Land elevation differences result in rainfall runoff, and permit some of the original solar energy to be harnessed as hydroelectric power. Hydroelectric power is at present the earth's chief renewable electricity source, generating 6% of global energy and about 15% of worldwide electricity. Hydroelectric power in Canada is plentiful and provides 60% of their electrical requirements. Usually regarded as an inexpensive and clean source of electricity, most big hydroelectric projects being planned today are facing a great deal of hostility from environmental groups and local people.

The earliest recorded use of water power was a clock, constructed around 250 BC. Since then, people have used falling water to supply power for grain and saw mills, as well as a host of other uses. The earliest use of flowing water to generate electricity was a waterwheel on the Fox River in Wisconsin in 1882.

The first hydroelectric power plants were much more dependable and efficient than the plants of the day that were fired by fossil fuels. This led to a rise in number of small to medium sized hydroelectric generating plants located wherever there was an adequate supply of falling water and a need for electricity. As demand for electricity soared in the middle years of the 20th century, and the effectiveness of coal and oil power plants improved, small hydro plants became less popular. The majority of new hydroelectric developments were focused on giant mega-projects.

Hydroelectric plants harness energy by passing flowing water through a turbine. The water turbine rotation is delivered to a generator, which generates electricity. The quantity of electricity that can be produced at a hydroelectric plant relies upon two variables. These variables are (1) the vertical distance that the water falls, called the "head", and (2) the flow rate, calculated as volume over time. The amount of electricity that is produced is thus proportional to the head product and the flow rate.

So, hydroelectric power stations can normally be separated into two kinds. The most widespread are "high head" plants and usually employ a dam to stock up water at an increased height. They also store water at times of rain and discharge it during dry times. This results in reliable and consistent electricity generation, capable of meeting demand since flow can be rapidly altered. At times of excess electrical system capacity, usually available at night, these plants can also pump water from one reservoir to another at a greater height. When there is

peak electrical demand, the higher reservoir releases water through the turbines to the lower reservoir.

“Low head” hydroelectric plants usually exploit heads of just a few meters or less. These types of power station use a weir or low dam to channel water, or no dam at all and merely use the river flow. Unfortunately their electricity production capacity fluctuates with seasonal water flow in a river.

Until only recently people believed almost universally that hydroelectric power was an environmentally safe and clean means of generating electricity. Hydroelectric stations do not release any of the usual atmospheric pollutants emitted by power plants fuelled by fossil fuels so they do not add to global warming or acid rain. Nevertheless, recent studies of the larger reservoirs formed behind dams have implied that decomposing, flooded vegetation could give off greenhouse gases equal to those from other electricity sources.

The clearest result of hydroelectric dams is the flooding of huge areas of land. The reservoirs built can be exceptionally big and they have often flooded the lands of indigenous peoples and destroyed their way of life. Numerous rare ecosystems are also endangered by hydroelectric power plant development.

Damming rivers may also change the quantity and quality of water in the rivers below the dams, as well as stopping fish migrating upstream to spawn. In addition, silt, usually taken downstream to the lower parts of a river, is caught by a dam and so the river downstream loses the silt that should fertilize the river’s flood plains during high water periods.

Theoretical global hydroelectric power is approximately four times larger than the amount that has been taken advantage of today. Most of the residual hydro potential left in the world can be found in African and Asian developing countries. Exploiting this resource would involve an investment of billions of dollars, since hydroelectric plants normally have very high building costs. Low head hydro capacity facilities on small scales will probably increase in the future as low head turbine research, and the standardization of turbine production, reduce the costs of low head hydro-electric power production. New systems of control and improvements in turbines could lead in the future to more electricity created from present facilities. In addition, in the 1950’s and 60’s when oil and coal prices were very low, lots of smaller hydroelectric plants were closed down. Future increases in the prices of fuel could lead to these places being renovated.

## Questions 28 - 32

Read the passage about *Hydroelectric Power* again and look at the statements below.

In boxes **28 - 32** 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>

- 28 Canada uses the most hydroelectric power in the world today.
- 29 An early use of hydroelectric power was in the timber industry.
- 30 The first hydroelectric power stations were more effective than those using competing energy sources.
- 31 People have been drowned by the flooding of their traditional territory when reservoirs are created.
- 32 Nowadays, agriculture below hydroelectric dams is not affected by the change in water flow.

## Questions 33 - 36

Complete each of the following statements (Questions 33 - 36) with words taken from Reading Passage 3.

Write **NO MORE THAN THREE WORDS** for each answer.

Write your answers in boxes **33 - 36** on your answer sheet.

- 33 The origin of hydroelectric power is the \_\_\_\_\_ produced when water obeys the laws of gravity.
- 34 How far water drops to the turbines in a power station is known as \_\_\_\_\_.
- 35 A drawback to low head hydroelectric power stations is that they depend on \_\_\_\_\_.
- 36 Derelict hydroelectric power stations could be \_\_\_\_\_ in the future.

## Questions 37 - 40

Using **NO MORE THAN THREE WORDS** from Reading Passage 3, answer the following questions.

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

- 37 What proportion of the world's electricity supply is provided by hydroelectric power?
- 38 How is the flow rate of a hydroelectric power station quantified?
- 39 When do high head power plants use surplus electricity to transfer water to a second reservoir?
- 40 What underwater action can lead to the production of pollution similar to that produced by fossil fuel power stations?