



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE
NAME

CENTRE
NUMBER

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ENVIRONMENTAL MANAGEMENT

5014/01

Paper 1

May/June 2007

2 hours 15 minutes

Candidates answer on the Question Paper.

Additional Materials: Ruler

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

All questions in Section A carry 10 marks.

Both questions in Section B carry 40 marks.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

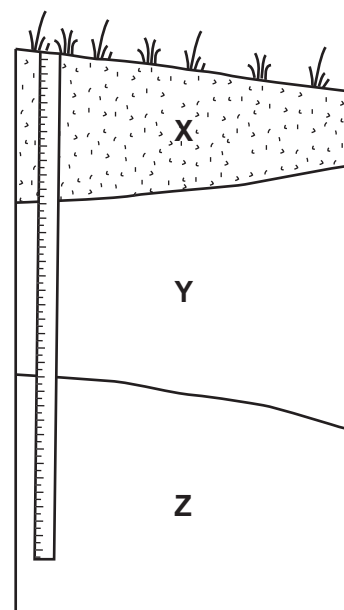
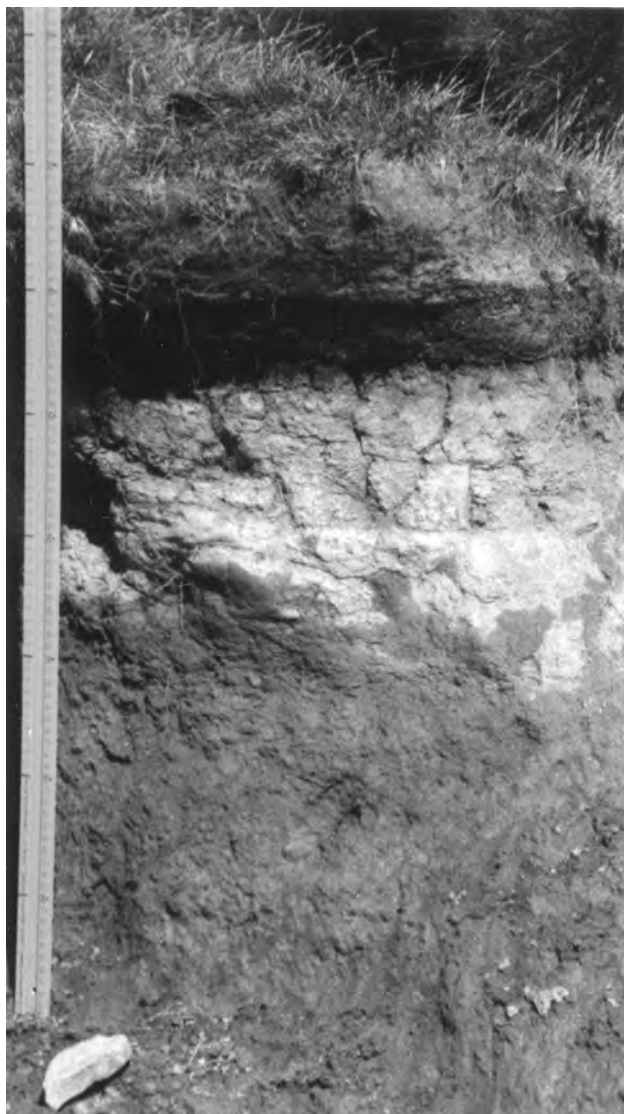
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| 6 | |
| Total | |

This document consists of **23** printed pages and **1** blank page.



Section A

- 1 (a) The photograph shows a soil formed on a rock made of sand and the diagram is a profile of the layers of the soil from the surface vertically downwards.



scale x 0.5

- (i) Which layer, **X** or **Y**, has the most organic matter? State the evidence for this.

layer

evidence[2]

- (ii) **Z** is parent material which has broken down. What is the evidence for this?

.....[1]

- (b)** The soil in the photograph contains a high percentage of sand and has a coarse texture. It has a pH of 4. Explain:

- (i)** why the soil has a coarse texture,

.....[1]

- (ii)** what a pH of 4 indicates,

.....
.....[2]

- (iii)** how the texture of a soil and the size of its pore spaces are linked.

.....
.....[1]

- (c) (i)** State one advantage and one disadvantage, for crop growth, of a soil with a coarse texture.

advantage

disadvantage[2]

- (ii)** State **one** disadvantage of a pH of 4.

.....[1]

2 (a) The map shows some of the world's main marine fishing grounds.



Key

- fishing grounds
- cold ocean current
- warm ocean current

What **three** features of location do they all have in common?

.....

.....

.....[3]

(b) Describe the conditions which favour large marine fish populations.

.....

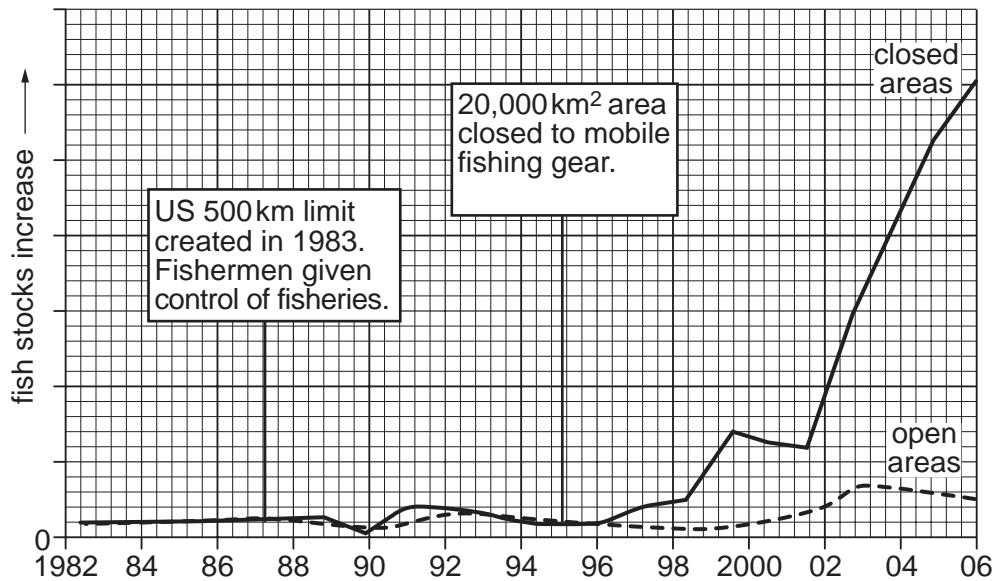
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.....[3]

- (c) When fish stocks collapsed, in area X, measures were taken to encourage the recovery of the industry. The graph below shows the timing of these measures and their effects on the fish population.



Describe, and suggest reasons for, the different effects of each of the two measures.

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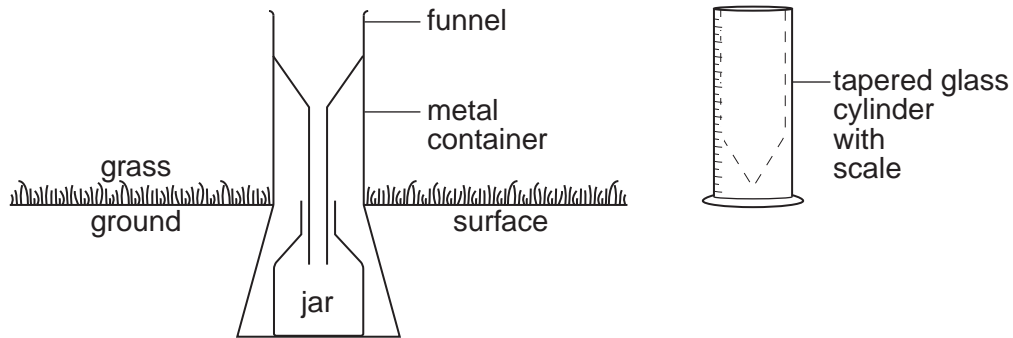
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.....[4]

- 3 (a) (i) The diagram shows the instruments used to measure precipitation at a weather station.



How would you take accurate measurements of the precipitation using these instruments?

.....

[2]

- (ii) Explain why this instrument is sited as shown in the diagram to give accurate readings of the precipitation.

.....

[2]

- (iii) Why is it sometimes more difficult to measure precipitation accurately in places with a tundra climate?

.....[1]

- (b)** Describe the amount, frequency and intensity of precipitation in a desert climate.

.....

.....

.....[3]

- (c)** Explain why trickle drip irrigation is the least harmful type of irrigation to use in a desert climate.

.....

.....

.....[2]

Population pyramid showing the percentage of the population by age group and sex. The pyramid is divided into Male (left) and Female (right) sections. The age groups are listed in the center, ranging from 0-4 at the bottom to 80+ at the top. The percentage of the population is shown on the x-axis, ranging from 0% to 10%.

| Age Group | Male (%) | Female (%) |
|-----------|----------|------------|
| 80 + | 0.2 | 0.2 |
| 75-79 | 0.5 | 0.5 |
| 70-74 | 1.0 | 1.0 |
| 65-69 | 1.5 | 1.5 |
| 60-64 | 2.0 | 2.0 |
| 55-59 | 2.5 | 2.5 |
| 50-54 | 3.0 | 3.0 |
| 45-49 | 3.5 | 3.5 |
| 40-44 | 4.0 | 4.0 |
| 35-39 | 4.5 | 4.5 |
| 30-34 | 5.0 | 5.0 |
| 25-29 | 5.5 | 5.5 |
| 20-24 | 6.0 | 6.0 |
| 15-19 | 6.5 | 6.5 |
| 10-14 | 7.0 | 7.0 |
| 5-9 | 8.0 | 8.0 |
| 0-4 | 9.0 | 9.0 |

- | age group | males | females |
|-----------|-------|---------|
| 25–29 | 3.2% | 3.8% |

(iii) Circle the words which describe how the country's population is changing now.
Choose from:

(b) Describe and explain the problems for a country with this type of population structure.

[4]

- (c) Why is it difficult for governments to introduce policies to change this population structure?

.....

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.....

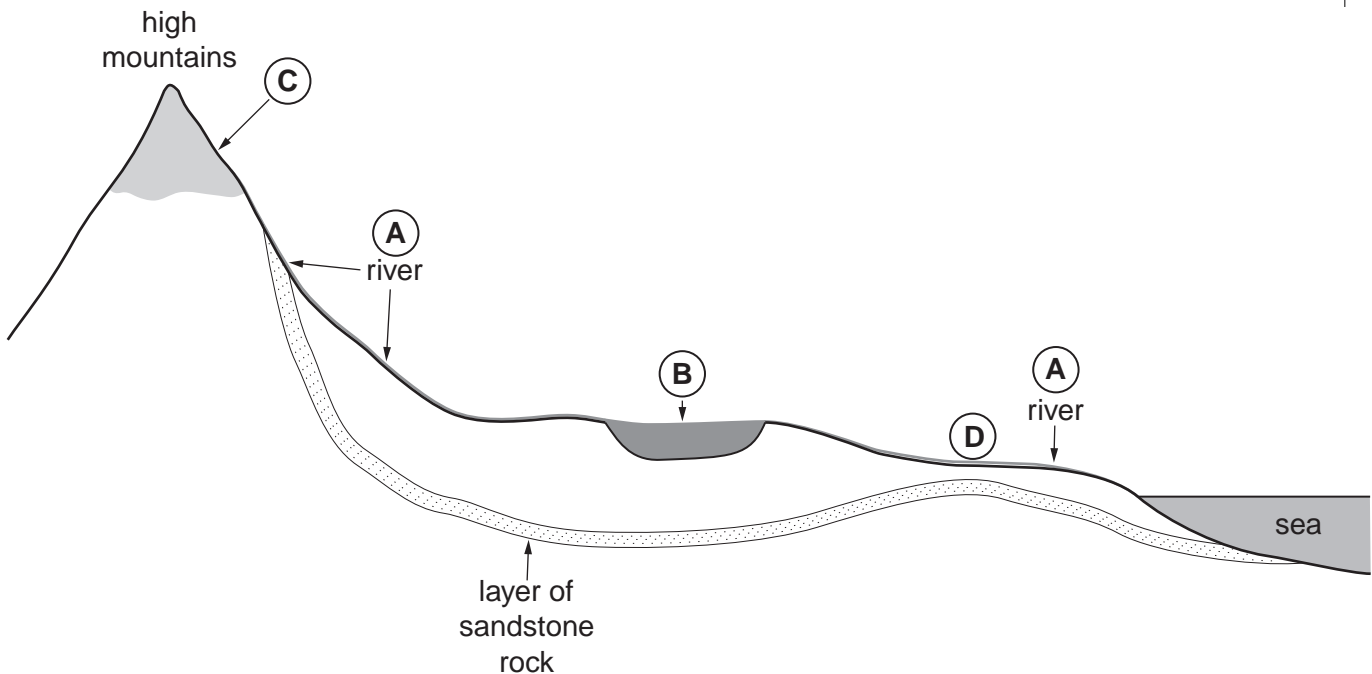
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.....[3]

Section B

- 5 (a) Look at the cross-section.

Section from the mountains to the sea



- (i) Name the **two** stores of fresh water labelled **B** and **C** on the section.

B

C[2]

- (ii) Why might it be possible for people to obtain fresh water, at point **D**, other than from the river?

.....

- (iii) How could people obtain this water?

.....

[3]

- (iv) Choose **one** of the sources from **A–D** which is likely to have water that will be safe and clean for people to use. Explain your choice.

Letter

Explanation

.....[2]

- (v) Which one of the four sources is **least** likely to give clean water? Explain your choice.

Letter

Explanation

.....[3]

- (b) Dams are often built to hold back reservoirs for water supply.

- (i) Give the name and location of a dam.

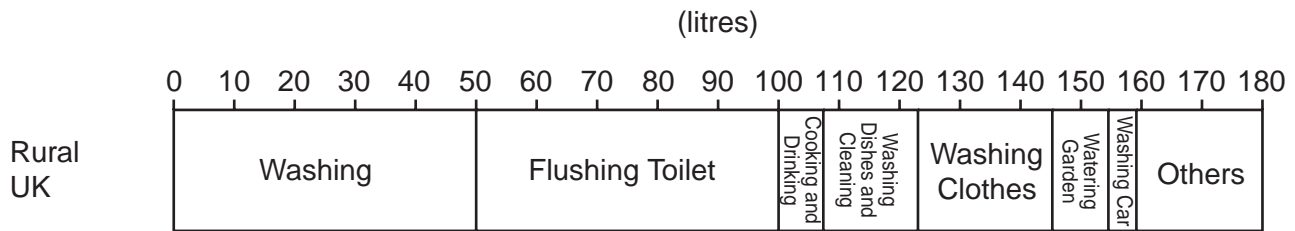
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- (ii) Explain why the dam was built and what advantages it has brought to the local people.

.....[5]

- (c) The divided bar graphs show average amounts of water used, by a family each day, in rural areas of the UK and Bangladesh. They also show how the water is used.

Average daily water use and uses by a family in rural areas of the UK and Bangladesh

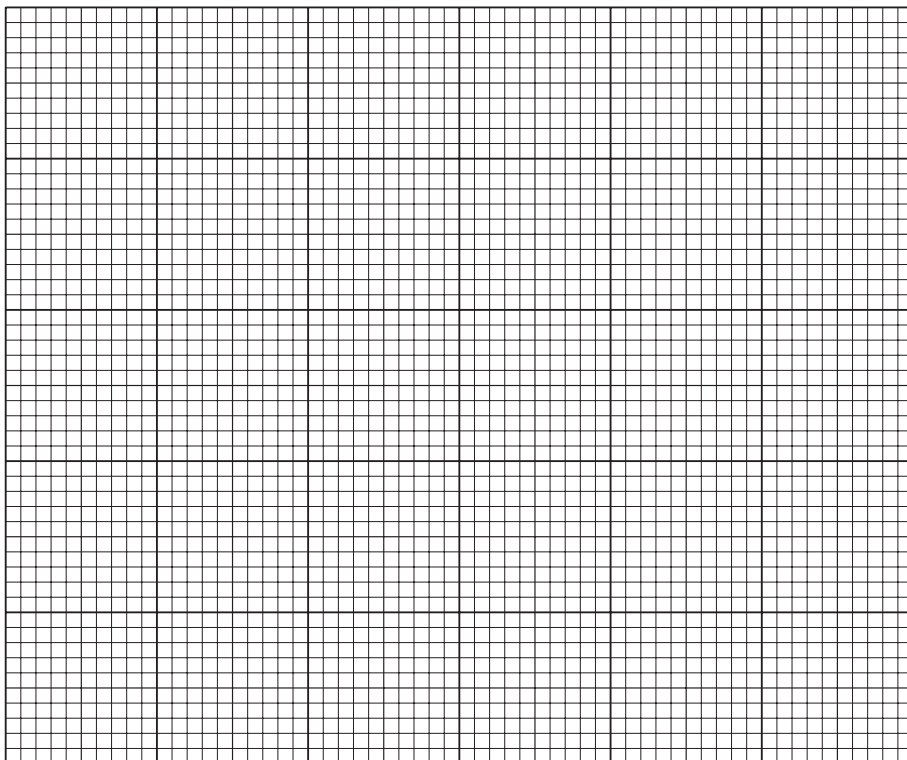


- (i) How many more litres of water are used by a family in the UK than in Bangladesh?
.....[1]
- (ii) How many times greater is the amount used by a family in the UK?
.....[1]
- (iii) For which one of the uses named in the graphs is the daily consumption of water almost the same in the UK and Bangladesh?
.....[1]
- (iv) Suggest a reason for this.
.....
.....[1]
- (v) The UK is a developed country. Bangladesh is a developing country.
Explain why there are differences in use of water between countries with different levels of economic development.
.....
.....
.....
.....
.....
.....
.....
.....
.....[4]

- (d) There are large differences in access to safe water supplies between urban and rural areas in many developing countries in Africa. Two examples are shown in the table.

| % of people with access to safe water supplies | | |
|--|-------------|-------------|
| Country | Urban areas | Rural areas |
| Kenya | 70 | 50 |
| Nigeria | 85 | 40 |

- (i) On the graph paper below, draw a bar graph to show these percentages. Complete your graph with a key.



[4]

- (ii) Give reasons why there are differences in access to safe water supplies between urban and rural areas in many developing countries.

.....

.....

.....

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.....

.....

.....[3]

- (e) Look at the cartoon about a rural area in Africa.

Walking four hours to fetch water



- (i) What does it suggest about the views of some people in the area to change and development?

.....

.....

.....

.....[2]

-[5]

-[3]

[Turn over
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- 6 (a) Look at the two plate boundaries shown in Diagrams **A** and **B**.

Diagram A

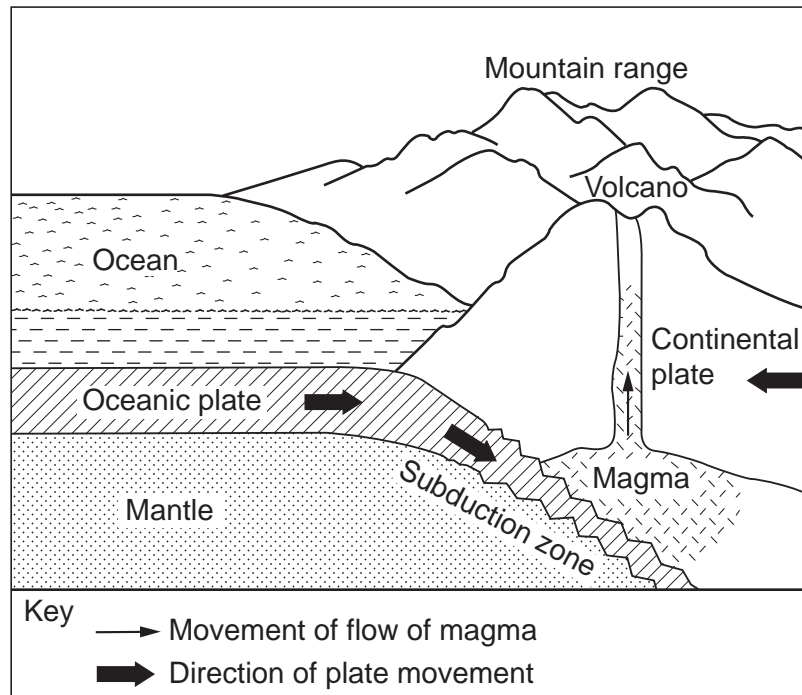
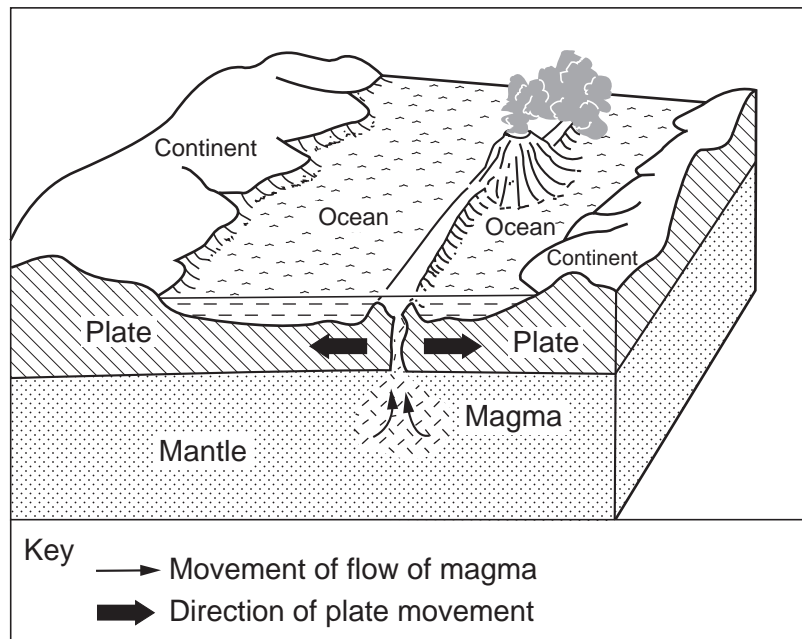


Diagram B



- (i) Describe what is happening to the two plates in **A** and the two plates in **B**.

A

.....

B

.....[2]

- (ii) The source of the magma is different in the two diagrams. Where has the magma come from in **A** and **B**?

A

.....

B

.....[3]

- (iii) Why are volcanoes formed at plate boundaries?

.....

.....

.....

.....[2]

- (iv) State **one** difference between volcanoes along these two types of plate boundary.

.....

.....

.....[2]

- (v) Some volcanic eruptions result in great loss of life; in others, no one is killed. Give reasons for the large difference in numbers of people killed.

.....

.....

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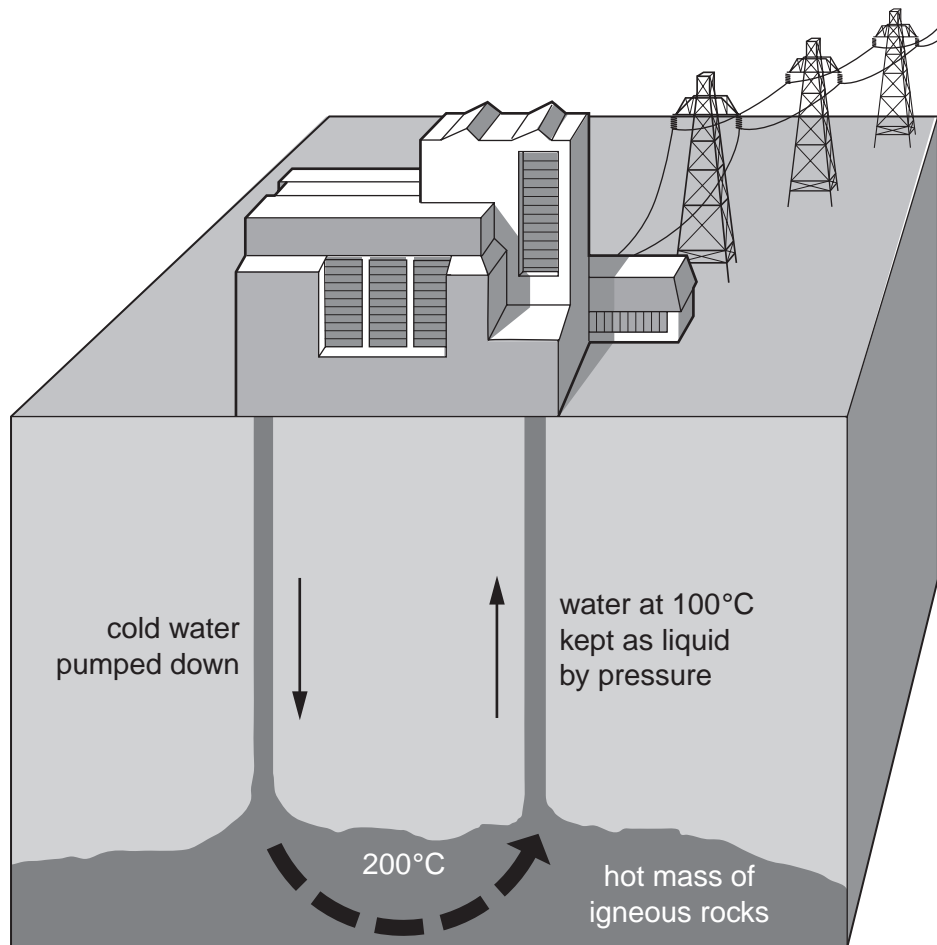
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- (b) In some countries electricity is made from geothermal power. Look at the diagram of the geothermal power station.

Geothermal power



- (i) How is the electricity produced?

.....

.....

.....

.....

.....

- (ii) Why are areas of active volcanic activity needed for its production?

.....

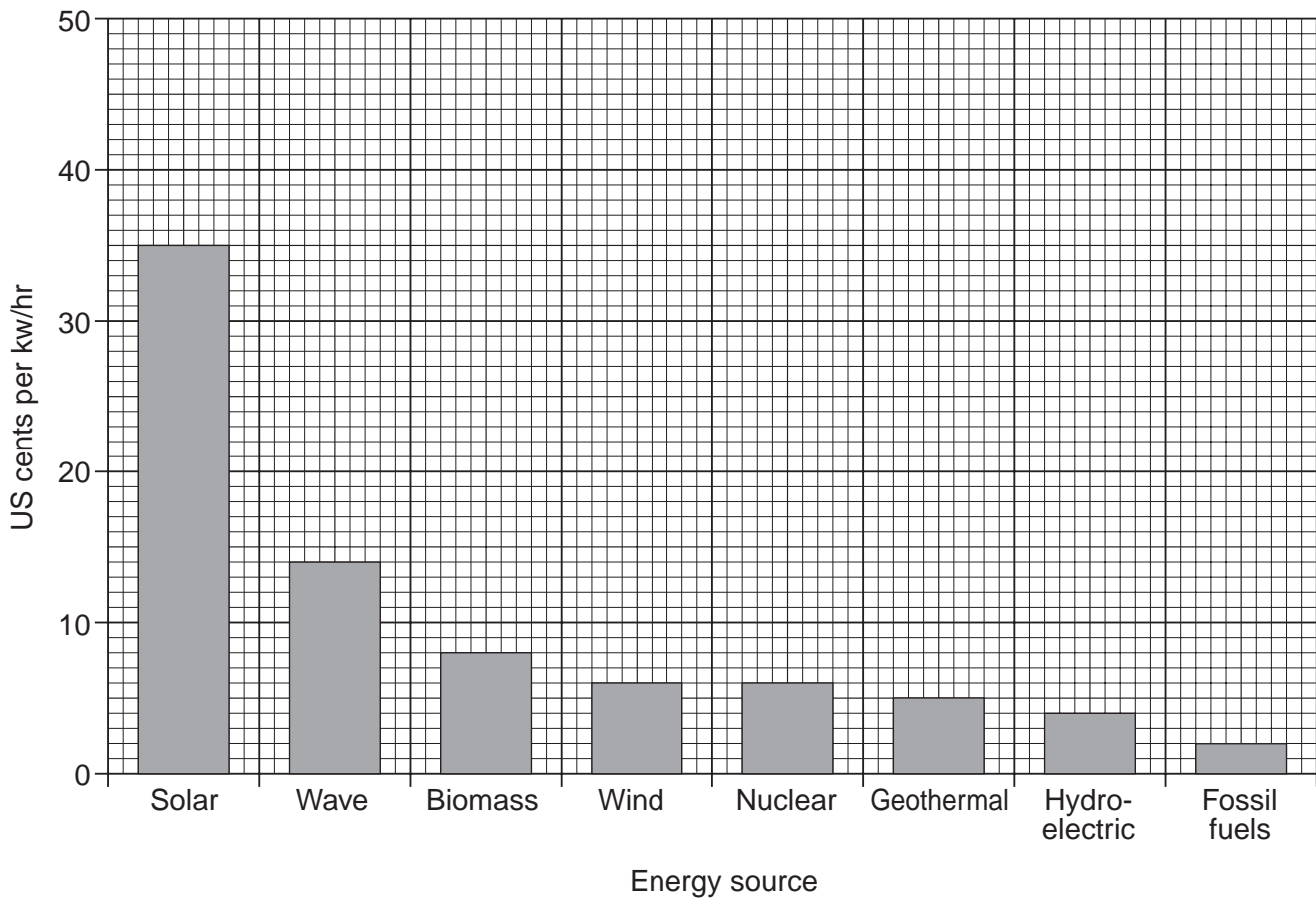
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[4]

- (c) The graph shows average costs of producing electricity from different energy sources in 2003.

Costs of producing electricity (2003)



- (i) Describe what the graph shows about the cost of producing geothermal electricity compared with electricity from other energy sources.

.....

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.....[3]

- (ii) Explain how likely it is that geothermal power will be used more in the future as an alternative to fossil fuels.

.....

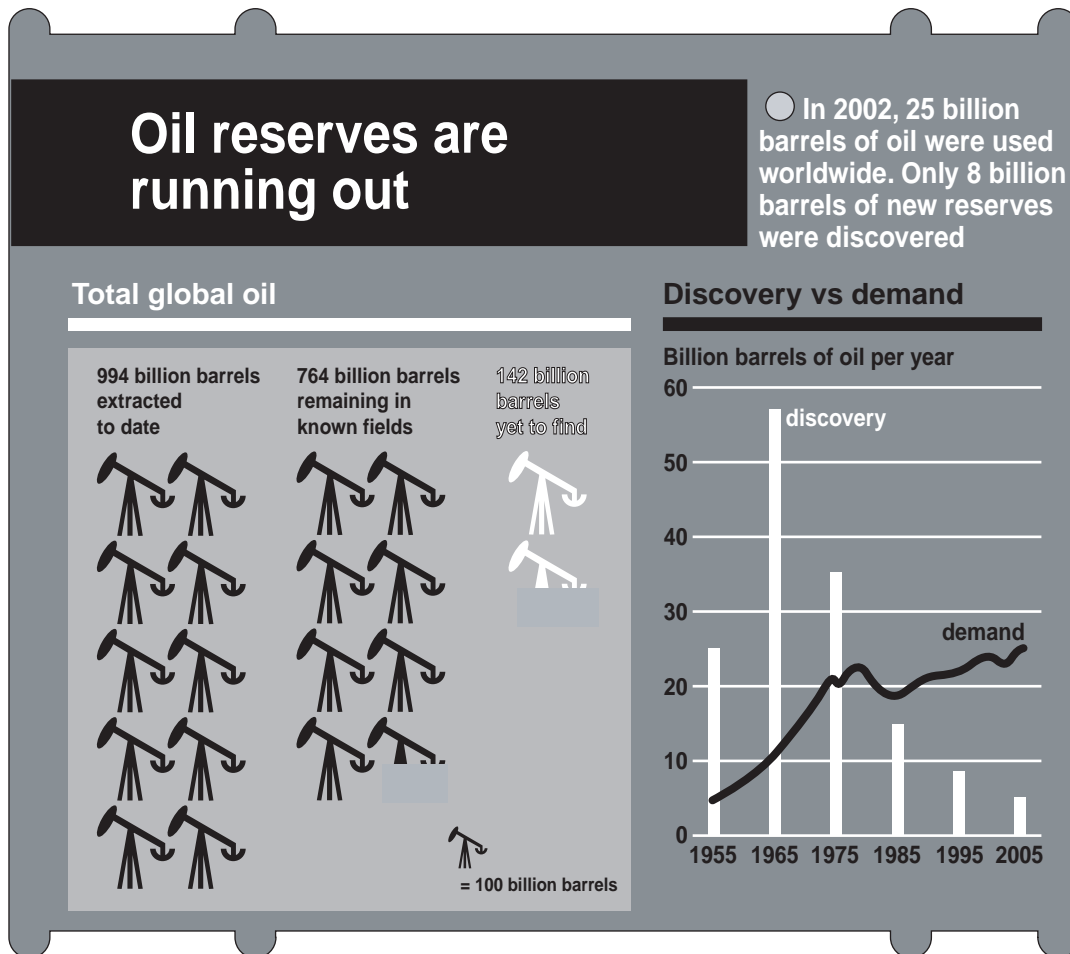
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.....[2]

- (d) Look at the information below about world supply and demand for oil.

Oil reserves are running out



- (i) Describe what happened to the demand for oil between 1955 and 2005.

.....

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.....

.....[3]

(ii) Quote values and information which support the following statements.

1 Oil reserves are running out.

.....

.....

.....

.....

2 The present use of oil is not sustainable.

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.....[4]

(iii) What is likely to happen to the demand for oil after 2005? Explain your answer.

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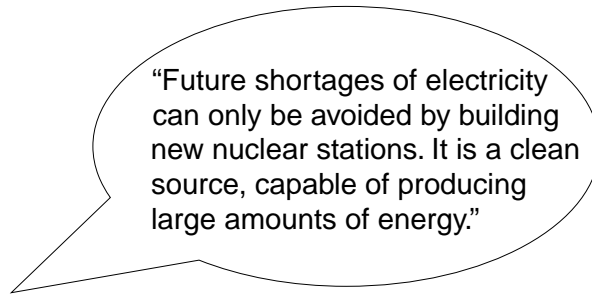
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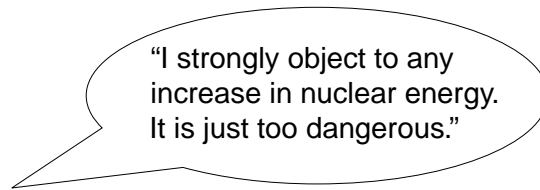
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.....[3]

(e) **A** One person's view of nuclear energy



B Another person's view of nuclear energy.



(i) Explain why some people hold the view about nuclear energy stated in **A**.

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.....

.....[3]

(ii) State the different arguments which supporters of view **B** could use.

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.....[3]

- (iii) What is your view on nuclear power? How strong are the different arguments put forward in part (ii)?

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.....[2]

[Total: 40]

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