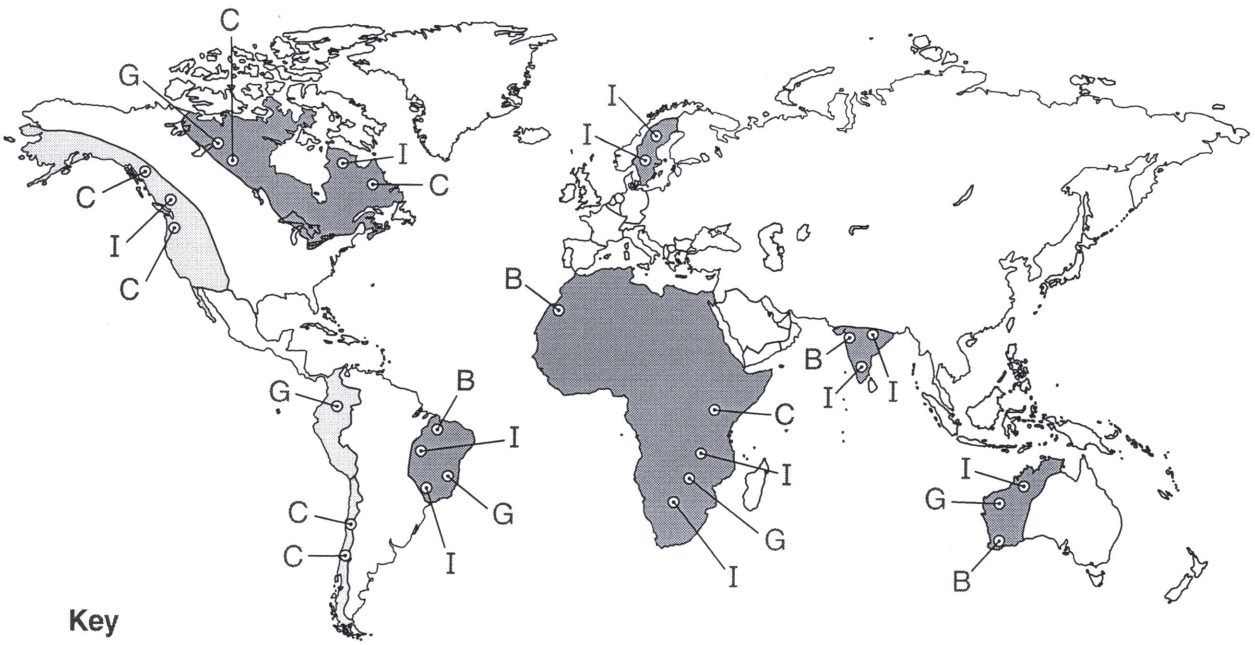
ENVIRONMENT MANAGEMENT

TOPIC-Impact of Rocks and Mineral Extraction, management (RRR)

2 The map shows the distribution of some minerals.

For Examiner's Use



Key

B Bauxite (common)
C Copper (quite rare)
G Gold (rare)
I Iron ore (common)

old igneous rocks
young fold mountains

(a) (i) Describe the distribution of **two** of the four minerals shown on the map.

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..... [4]

(ii) Explain why mining is a dangerous job.

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..... [3]

(b) What are the economic advantages and disadvantages of mining for a country?

For Examiner's Use

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6 **(a)** Modern human society relies on the generation of electricity. This can be achieved using energy from a variety of sources such as:

For Examiner's Use

coal **solar** **gas** **wind** **wave** **nuclear**

geothermal **hydro-electric** **biomass** **oil**

Sustainable energy is the provision of energy that meets the needs of the present without affecting the ability of future generations to meet their needs.

(i) Place the energy sources in the list above under the correct heading in the table below.

unsustainable	sustainable

[3]

(ii) The length of time for which the unsustainable sources of energy can be exploited could be increased.

Suggest ways in which this could be achieved.

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.....[3]

(b) The table below shows the average costs of generating electricity at power stations using gas, oil and coal and nuclear power stations in a selection of developing countries.

For Examiner's Use

	average cost of electricity from power stations using gas, oil and coal $ per MWh	**average cost of electricity from nuclear power stations $ per MWh**
construction	6.5	8.9
operation	3.4	2.6
fuel	22.0	5.3

Taking into account these costs, and other factors, state what arguments there might be for and against **A** a power station using coal, oil or gas and **B** a nuclear power station.

A .....

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B .....

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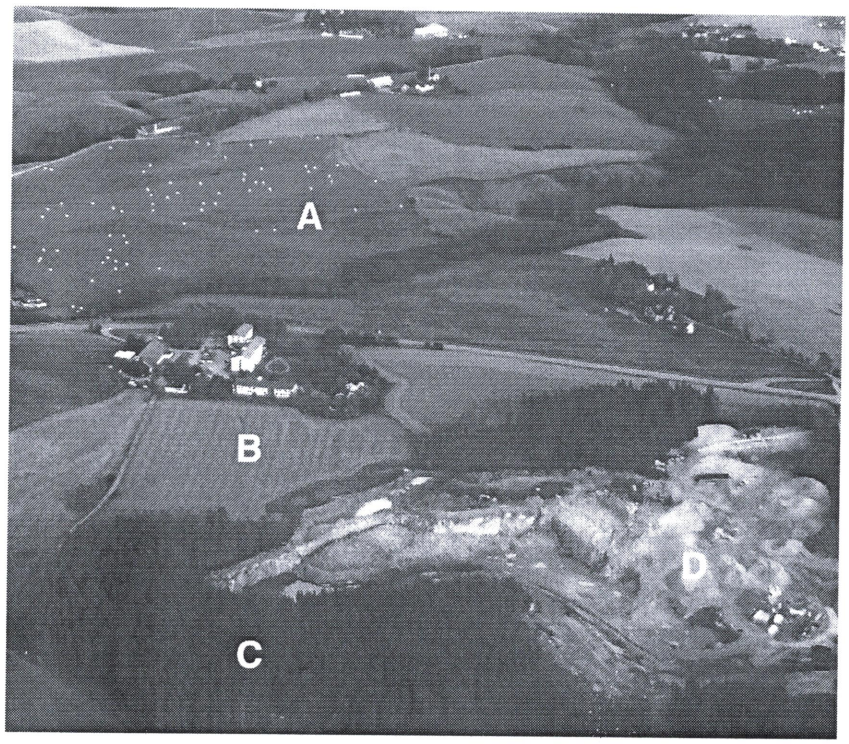
.....[4]

[Total: 10]

1 Look at the photograph below.



(a) (i) Complete the table below using letters from the photograph. [2]

land use	letter
crop farming	.....
grazing land	.....
natural vegetation	.....

(ii) Some areas shown in the photograph are still covered in trees.

Suggest why humans have not used these areas for other purposes.

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.....[2]

(iii) Suggest why there is an open-pit (opencast) mine at **D**.

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.....[1]

(iv) Describe ways in which environments damaged by mining can be improved.

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.....[3]

(b) Hardwood trees are found in tropical forests.

Explain how hardwood forests can be managed by sustainable harvesting.

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.....[2]

[Turn over

1 **(a)** Name the types of rock formed by each of the following:

heat and/or pressure deep in the Earth's crust .....

magma or lava cooling and solidifying .....

the deposition of rock fragments, usually beneath the sea. .....

[3]

(b) **(i)** Describe how a mineral, such as iron ore, is extracted from an open-pit (opencast) mine.

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.....[3]

(ii) Describe how the land can be restored after open-pit mining.

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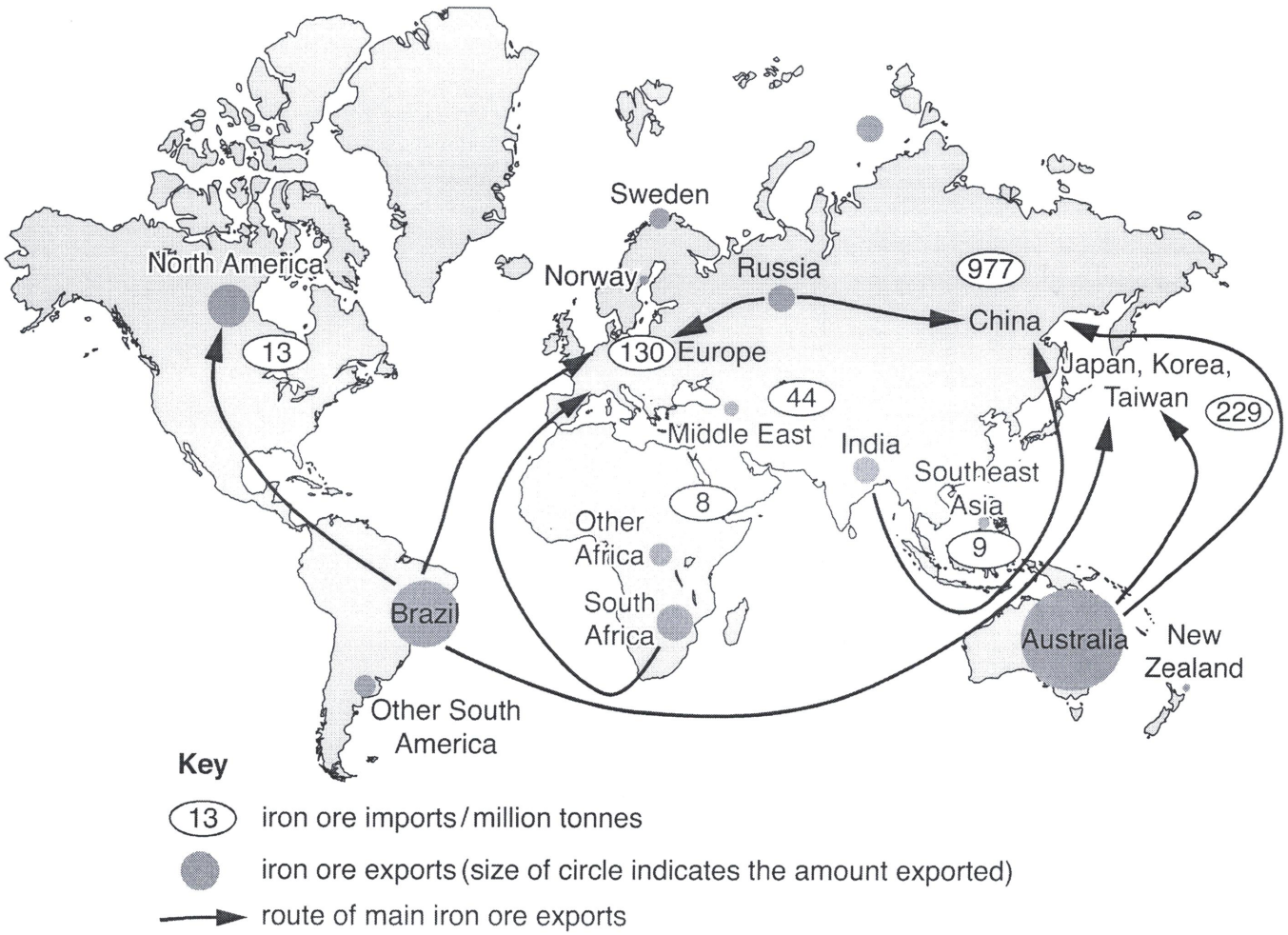
(c) The map shows recent iron ore exports, transport routes and imports for one year.



Using the map:

(i) name the country which exported the most iron ore.

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[1]

(ii) name the country which imported the most iron ore and state how much it imported.

name .....

quantity imported ..... million tonnes

[2]

(iii) Suggest why Japan, Korea and Taiwan imported such large quantities of iron ore.

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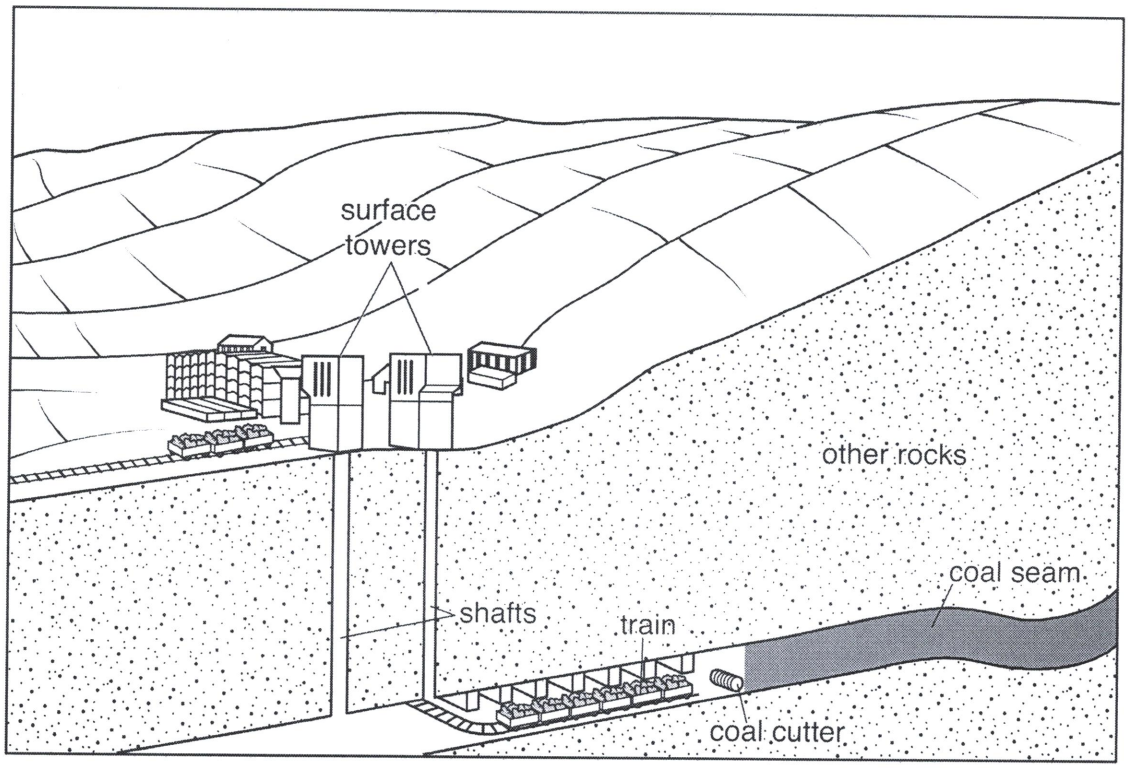
.....[2]

(d) The diagram shows a deep coal mine.



(i) Describe how the coal shown in the diagram was formed.

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.....[3]

(ii) Using the diagram, describe how the coal is mined.

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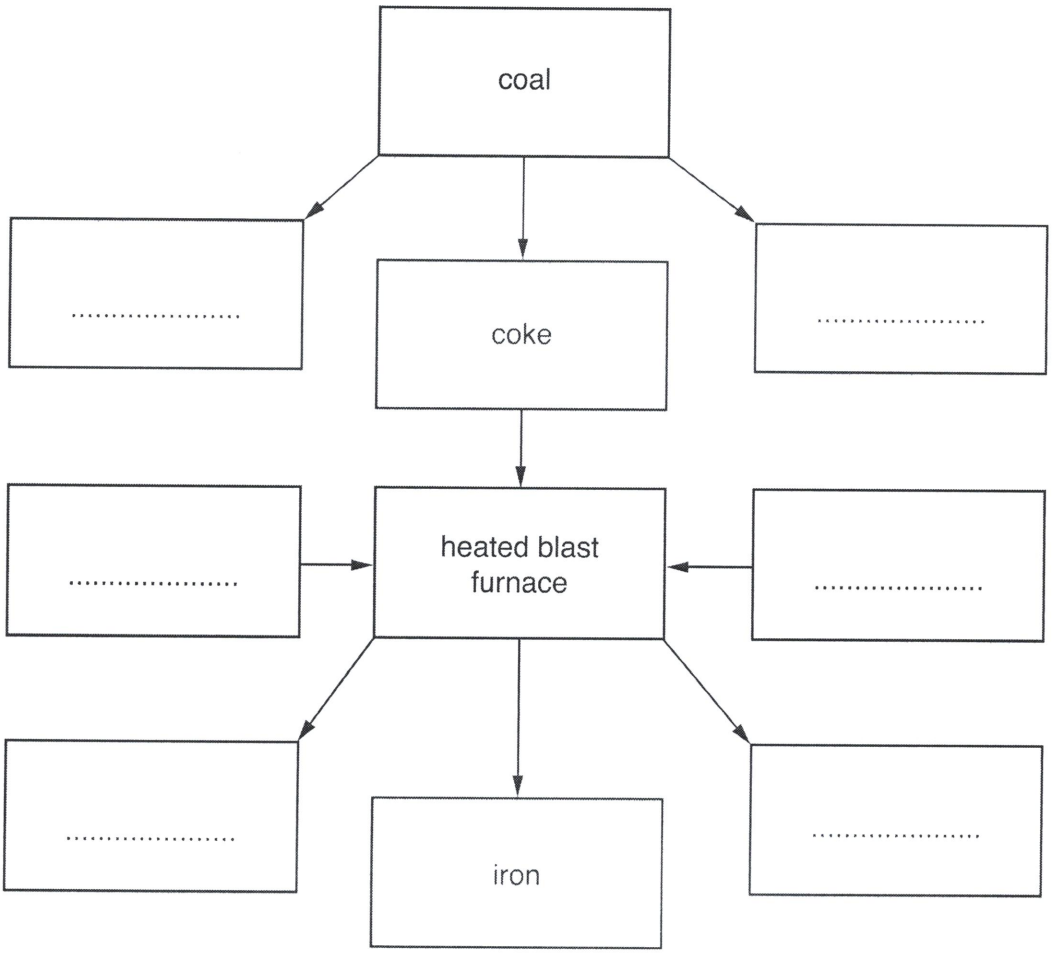
.....[3]

(e) The information describes a method for producing iron from iron ore.

Firstly, coal is converted to coke, which is almost pure carbon. This process also produces some gases such as sulfur dioxide and nitrogen oxides. Iron ore, coke and limestone are loaded into a blast furnace and heated to a high temperature. The coke and limestone convert iron ore into iron. The waste materials from the blast furnace are carbon dioxide and a solid waste known as slag.

(i) Use the information above to complete the boxes in the flow diagram.



[3]

(ii) Explain how producing iron in a blast furnace contributes to acid rain.

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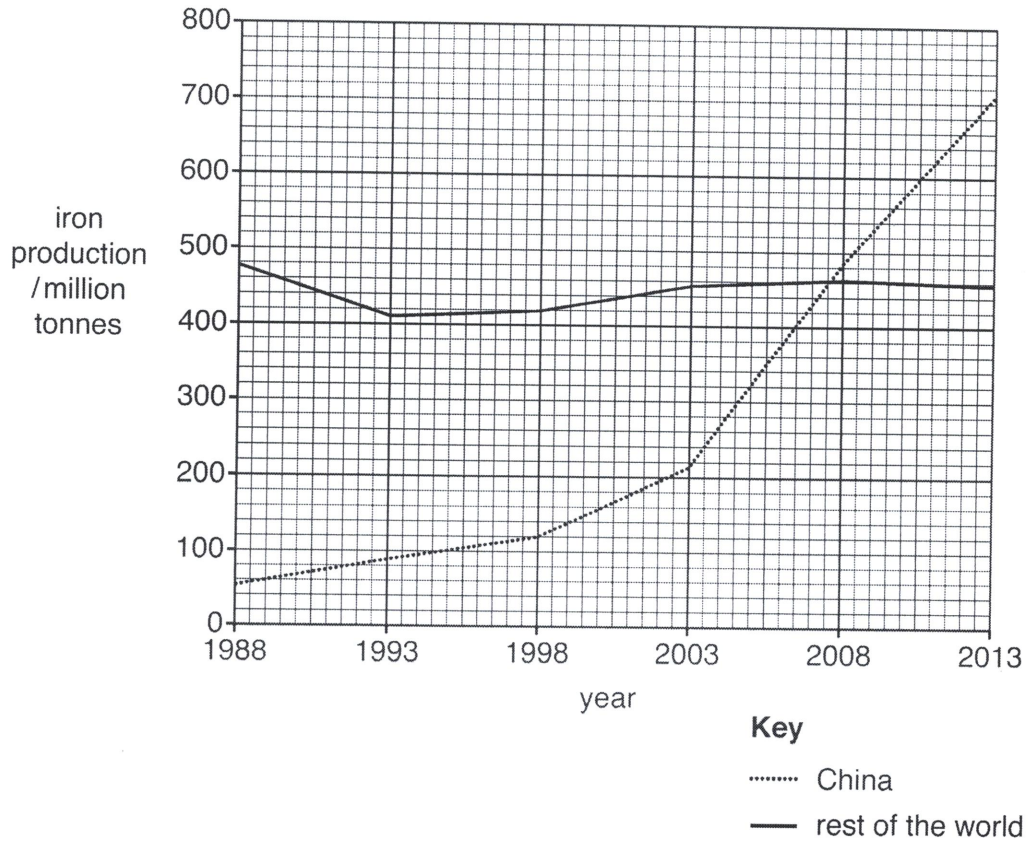
.....[4]

(f) The graph shows iron production for China and the rest of the world from 1988 to 2013.



(i) Calculate the total world iron production in 1988.

Show your working.

..... million tonnes [2]

(ii) State the year when China and the rest of the world produced equal quantities of iron.

..... [1]

(iii) Compare the quantity of iron produced in China with the quantity produced in the rest of the world from 1988 to 2013.

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.....[3]

(iv) Suggest how the air quality in China may have changed between 1998 and 2013.

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.....[1]

(v) Can economic development take place without causing air pollution?

Explain your answer.

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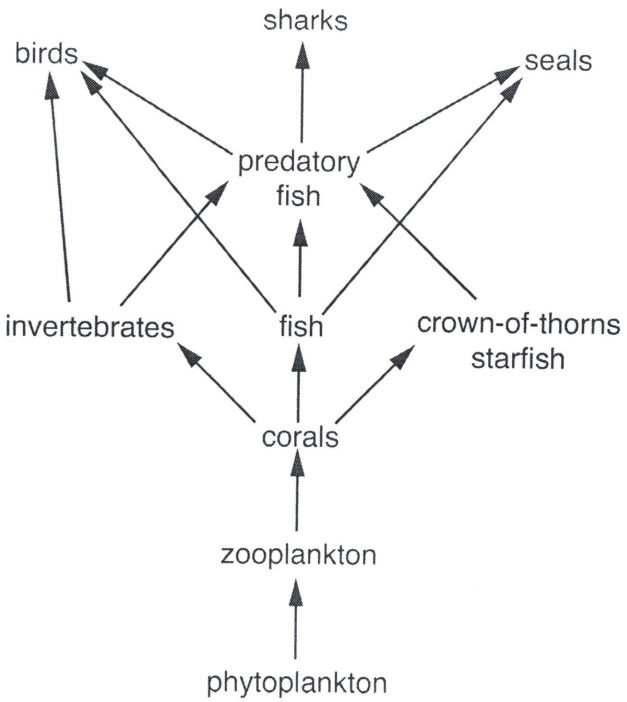
.....[6]

[Turn over

(d) The diagram shows a simplified food web for a coral reef.



(i) State the producer in the food web shown.

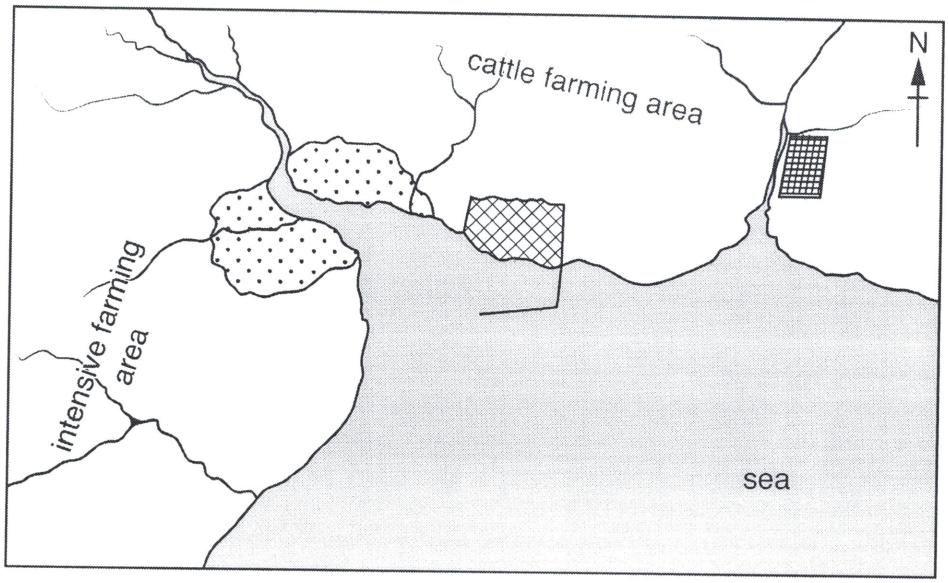
.....[1]

(ii) Complete the food chain diagram.

seals
phytoplankton

[3]

(e) The map shows a coastal area.



not to scale

Key

- city
- oil refinery
- lead mine and processing plant
- rivers
- harbour

Explain how each of the following may damage life in the sea.

the oil refinery .....

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farming .....

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lead mining and processing .....

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[6]

(f) Explain why marine pollution is difficult to control.

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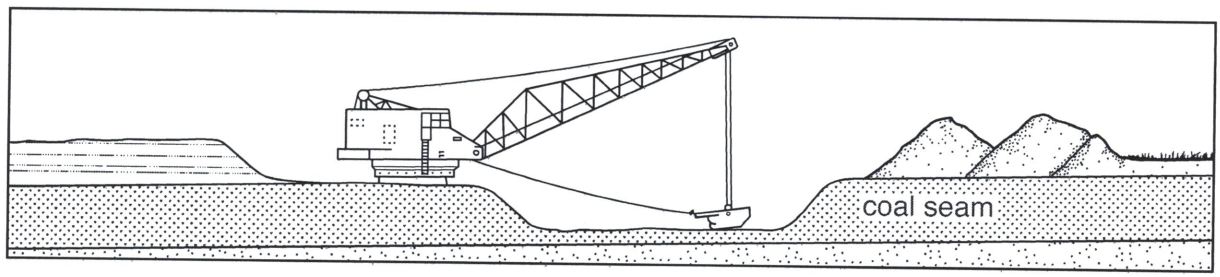
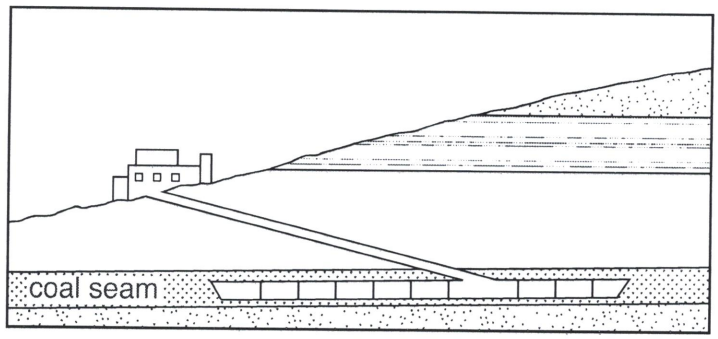
.....[6]

2 The diagram shows three types of coal mine labelled **P**, **Q** and **R**.

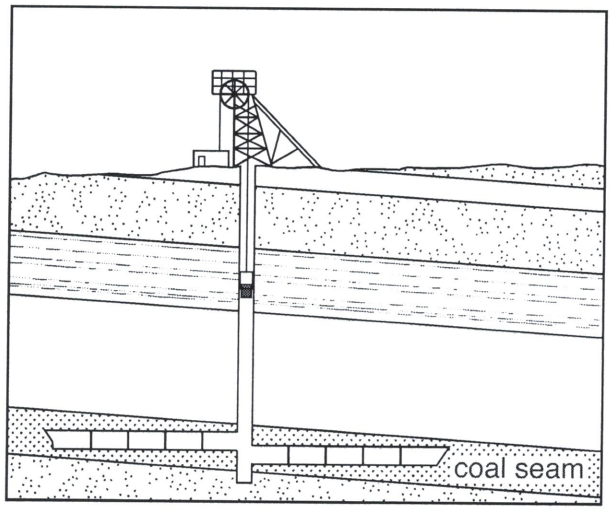
P



Q



R



(a) (i) Match the letters, **P**, **Q** and **R**, in the diagram to the types of coal mine.

adit (drift) mine .....

open-pit (opencast) mine .....

shaft mine .....

[2]

(ii) It is more dangerous to work in the type of mine labelled **R** than in the type of mine labelled **P**.

Explain why.

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.....[4]

(iii) Coal is a fossil fuel.

Name **one** other fossil fuel.

.....[1]

(b) Suggest **three** advantages of generating electricity using nuclear fuel compared with using fossil fuels.

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.....[3]

[Turn over