

CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

GEOGRAPHY

0460/01

Paper 1

May/June 2003

1 hour 45 minutes

Additional Materials: Answer Booklet/Paper
Ruler

READ THESE INSTRUCTIONS FIRST

If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet.
Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **three** questions.

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.

Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

- 1 (a) Fig. 1 was produced by the United Nations. It shows the actual growth in the world's population by 1999. It also shows that the world's population may grow in three possible ways by 2050 (estimates **X**, **Y** and **Z**).
- (i) In 1900 the world's population was 1.5 billion. How many years did it take for the world's population to double? [2]
How many years did it take to double again? [2]
- (ii) In 1999 the United Nations attempted to forecast how the world's population would grow by 2050. Three possible ideas were produced and these are shown as **X**, **Y** and **Z** on Fig. 1. How would changes in birth and death rate produce each of these rates of population growth? [3]
- (b) Major reasons for the rapid growth of the world's population in the 20th century were the high birth rates in many developing countries and the general decline in death rates.
Explain why
- (i) birth rates are high in many developing countries, [4]
(ii) governments of many developing countries attempt to lower their birth rates, [4]
(iii) death rates have declined in many countries. [4]
- (c) Now study the population pyramid of a developing country shown in Fig. 2.
- (i) Which age group has the largest percentage of the population of the country? [1]
(ii) Explain why the age groups *under 15 years* and *65 years and over* are referred to as 'dependent population'. [1]
(iii) Describe the main features of the structure of the population shown. [3]
(iv) With reasons, suggest how the structure of the country's population might change over the next 50 years. [3]

Total world population (actual and estimated 1950–2050)

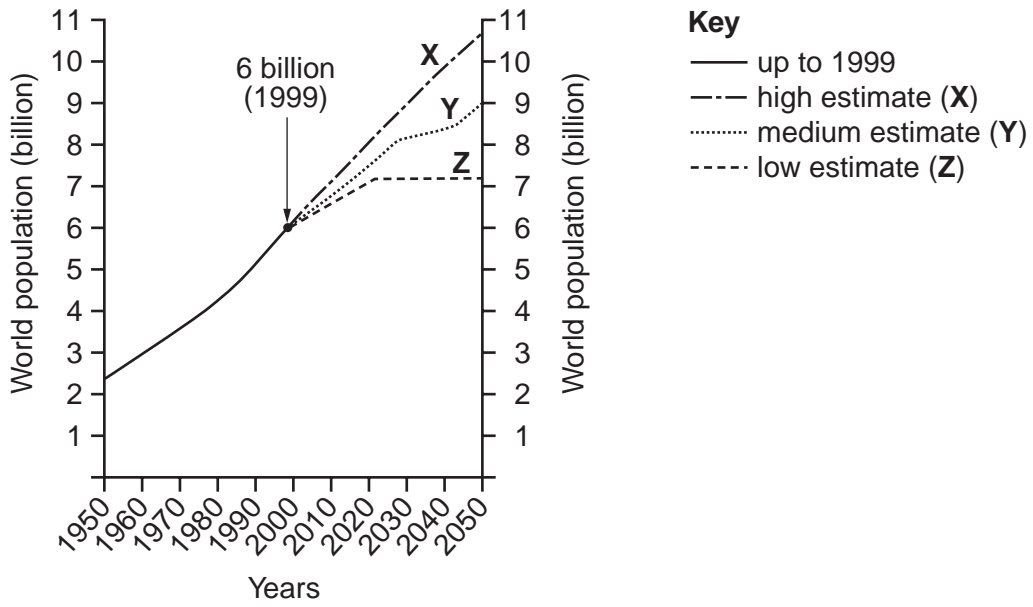


Fig. 1

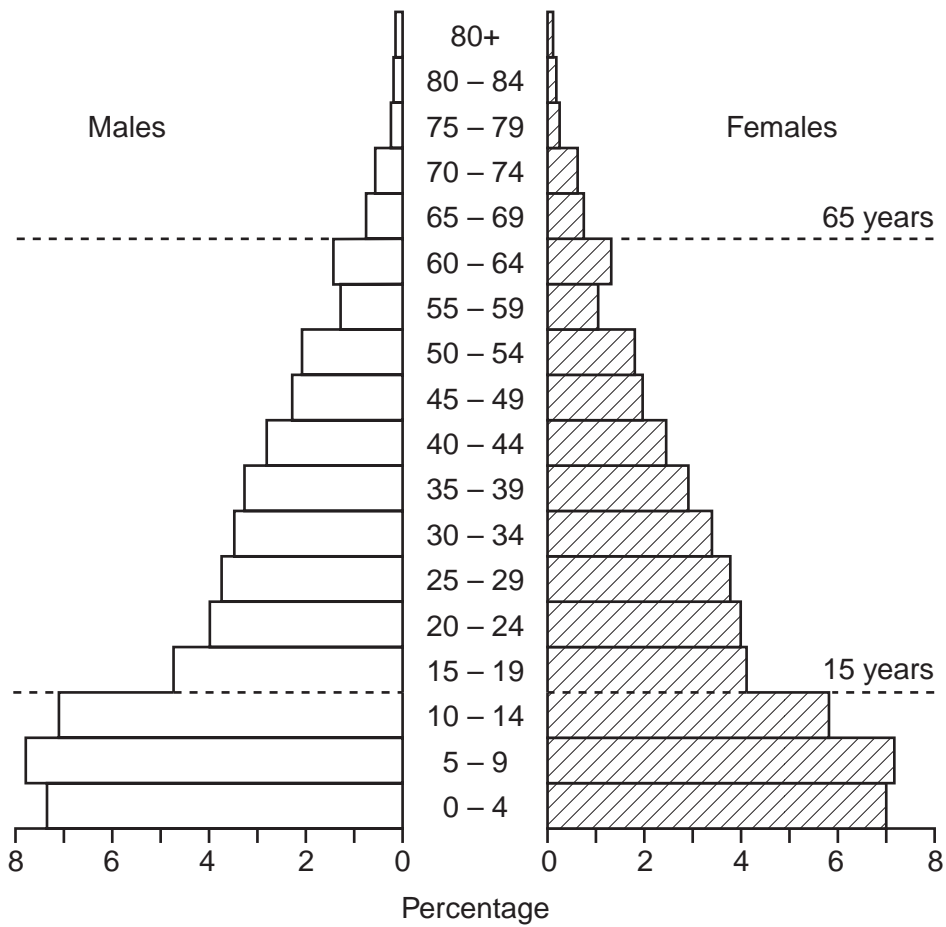


Fig. 2

- 2 (a) Fig. 3 shows part of a large urban area in a developed country. With reference to other facts you may know, answer each of the following.
- (i) Name an area shown on Fig. 3 which is **not** mainly used for housing. [1]
 - (ii) Give a reason for your answer to (a)(i). [1]
 - (iii) Shopping areas in the residential areas shown on Fig. 3 are listed in Fig. 4 (Insert).
Complete the diagram (Fig. 4) by adding the numbers of each type of shopping area shown on the map. [1]
 - (iv) Why are there differences in the numbers of each type of shopping area? [2]
 - (v) How does the large superstore/hypermarket labelled **X** differ from the other shopping areas shown? [3]
 - (vi) Suggest reasons for the location of the superstore at **X**. [3]
 - (vii) State how the pattern of roads in area **Z** differs from the pattern of roads in other residential areas further away from the CBD. [1]
 - (viii) Suggest a reason for the difference you have described in (a)(vii). [1]

- (b) Choose **two** of the following types of urban land use (I–III);

- I leisure centre or sports ground,
- II bus and railway stations,
- III offices.

Referring to a *named* town or city you know well, describe and explain the distribution of your chosen urban land uses. [3,3]

- (c) Three major problems in towns and cities are:

shortage of land in the CBD,

housing shortages,

traffic congestion.

Select **one** of these problems

- (i) give reasons why it occurs, [2]
- (ii) describe how town and city authorities try to overcome the problem selected. [4]

note credit will be given for reference to actual examples included in your answer.

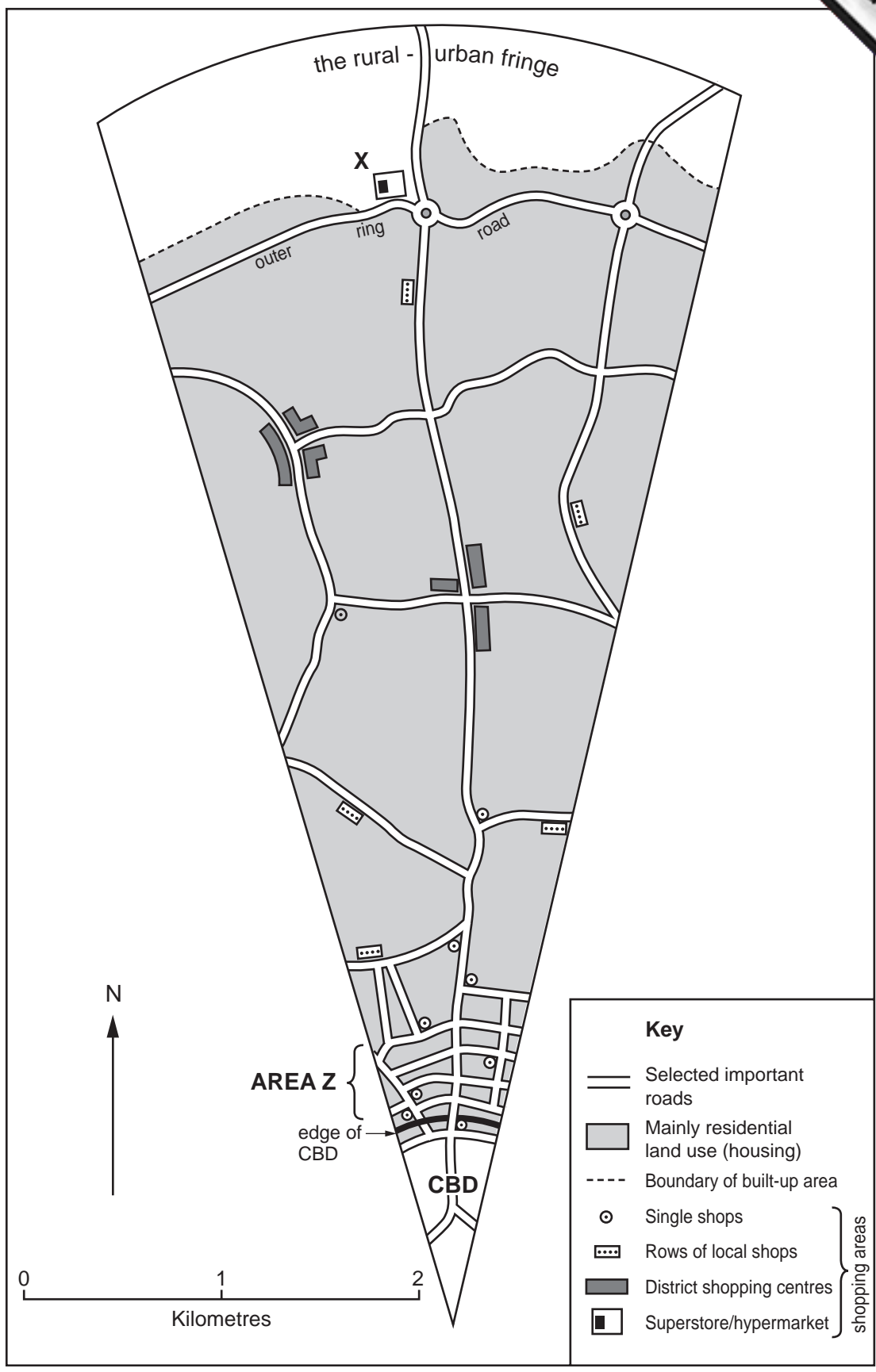


Fig. 3

- 3 (a) (i) What is meant by the load of a river?
 (ii) State **three** ways in which the load of a river may be moved.
 (iii) Describe a change in a river which causes it to deposit some of the load it is carrying.
- (b) Fig. 5 shows part of a river and its valley together with a cross section of the river's channel.

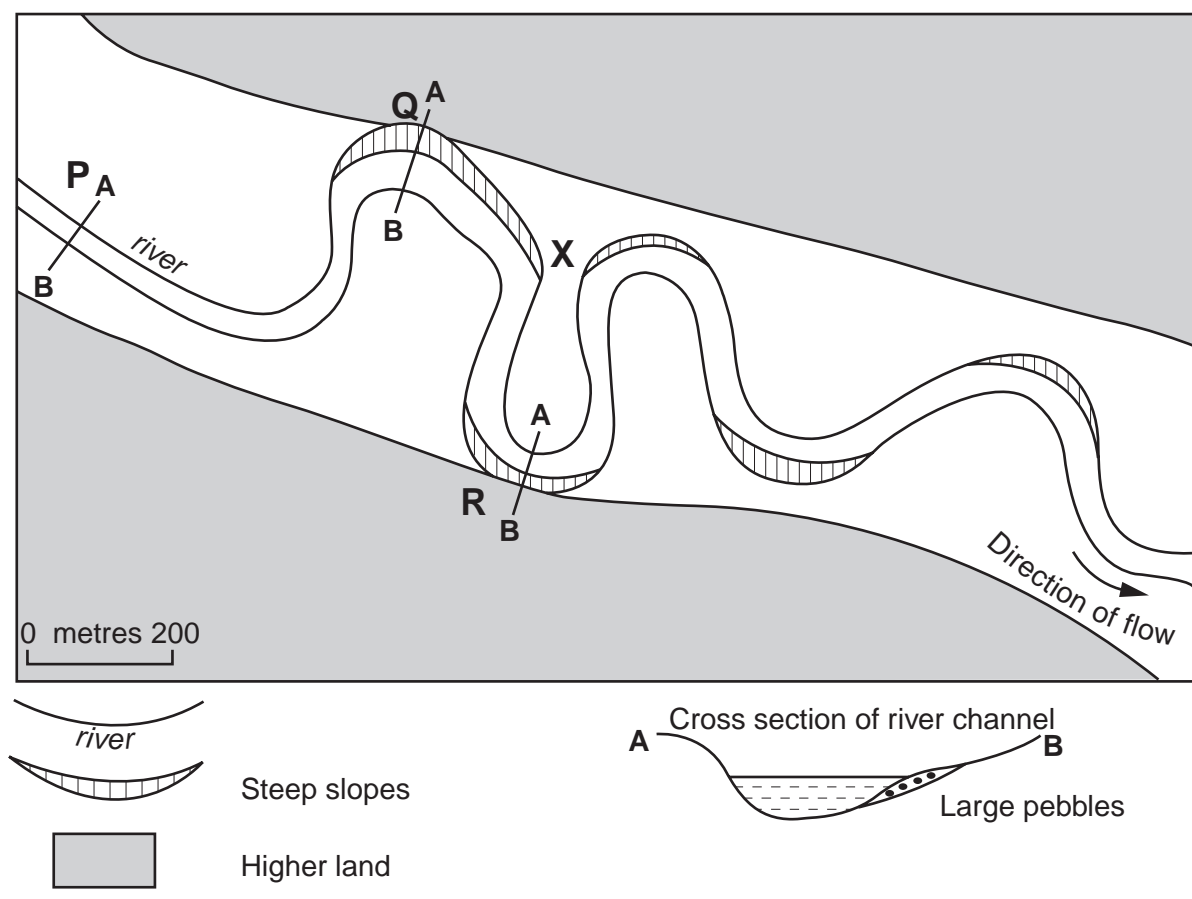


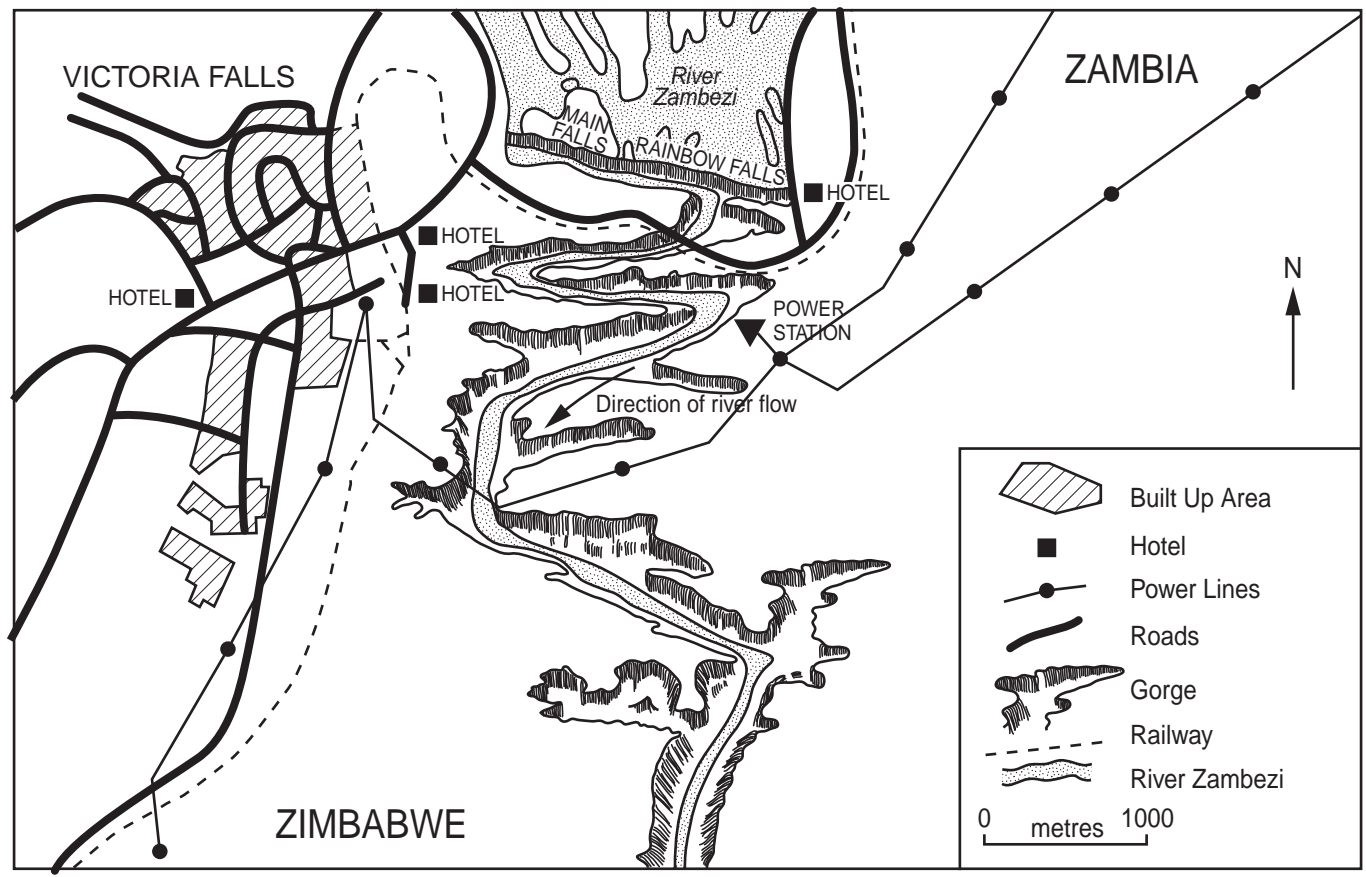
Fig. 5

- (i) Describe how the river will change its course at X on Fig. 5. [1]
- (ii) At which location P or Q or R along the river was the cross section A-B drawn? Give a reason for your answer and explain why you rejected the other two locations. [4]
- (iii) Explain the shape of the river channel shown in the cross section. [2]
- (c) Photograph A (opposite) shows the Victoria Falls on the River Zambezi in Africa. The location and area surrounding the Victoria Falls are shown on Fig. 6 (opposite).
 Use information from the photograph and map to help you to answer the following.
- (i) In which compass direction did the camera face when photograph A was taken? [1]
- (ii) Measure the width of the channel of the River Zambezi where the Victoria Falls (Main Falls and Rainbow Falls) occur. Give your answer to the nearest kilometre. [1]
- (iii) Describe **three** of the main river and valley features shown on the photograph. [3]
- (iv) Describe **three** ways in which the River Zambezi and its valley influence the lives of people in the area shown on Fig. 6. [3]

- (d) Explain how the work of the river and the rock structure help
 - (i) to form a waterfall, such as the one shown in Photograph A,
 - (ii) to cause the waterfall to retreat upstream.



Photograph A



- 4 (a) (i) State **two** of the main features of temperature and **two** of the main features of the climate of an area of tropical rain (evergreen) forest shown in Fig. 7 below.
- (ii) In the boxes below Fig. 8, (Insert) state the features of tropical rain forest labelled **A** and **D**.
- (iii) Explain the limited amount of undergrowth in a tropical rain forest. [1]
- (iv) Describe **three** ways in which the features of tropical rain forest are related to climatic features you have described in (a)(i). [3]

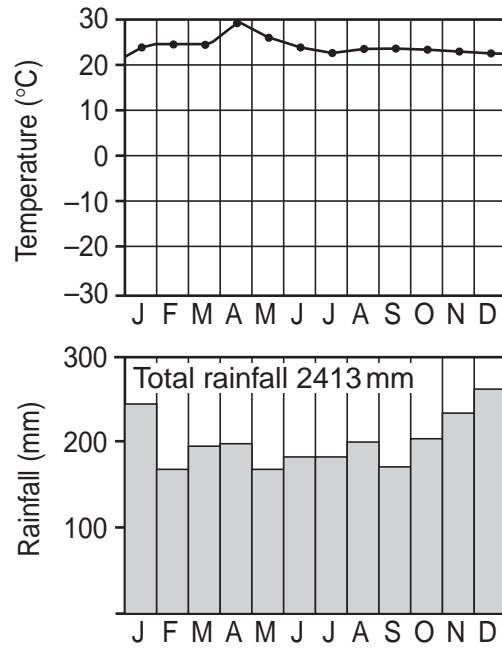


Fig. 7

- (b) Study the extract from a newspaper account (Fig. 9) below, which was written about deforestation in the tropical rain forest of the Amazon Basin in Brazil in May 2001.
- (i) How much of the Amazon Basin has been deforested in Brazil?
- (ii) Why has so much deforestation taken place?
- (iii) Was the clearance of forest a success?
Give reasons for your answer. [2]
- (iv) Suggest problems for the environment when deforestation takes place. [4]

Empty fields, as far as the eye can see, line the highway for most of the 300 km from Belem, eastern Amazonia's main city, to the timber-cutting town of Paragominas. Once it was all forest, but since the 1970s most of the trees in a broad strip beside the road have been cut, not just to extract timber, but to clear pasture for cattle-raising, encouraged by government grants. Now, though, most of the fields lie empty and are becoming overgrown with scrub. Cattle are now seen infrequently.

This deforestation of 14% of the Amazon Basin in Brazil, has been both an economic disaster and an environmental disaster. The usable timber would be ripped out of a stretch of forest and the rest would then be burned, because the land would often be worth more when cleared than it had been as untouched forest.

When farming was actually tried, it was frequently found to be unprofitable.

Fig. 9

- (c) What are your views about protecting natural environments such as the tropical rain forest?
Support your answer with reasons. [4]

- 5 (a) Fig. 10 shows employment in different industries in a number of selected countries.
- (i) What percentage of the labour force is employed in primary industry in
 - A Japan,
 - B Indonesia? [2]
 - (ii) State the main differences in employment in the three countries in group X and the three countries in group Y. [3]
 - (iii) Suggest reasons for the differences you have given in (a)(ii). [3]



Fig. 10

- (b) Fig. 11 (opposite) gives information about the motor vehicle assembly industry.
- (i) Explain what is meant by the terms 'assembly industry' and 'inputs'. [2]
 - (ii) Explain why
 - A components are often produced in different factories from the one assembling motor vehicles, [1]
 - B factories manufacturing components are often located close to the factory assembling motor vehicles, [1]
 - C motor vehicle assembly factories are large and have plenty of land around the factory, [2]
 - D motor vehicle assembly factories employ large numbers of workers with different skills. [2]

INPUTS

Skilled and semi-skilled labour

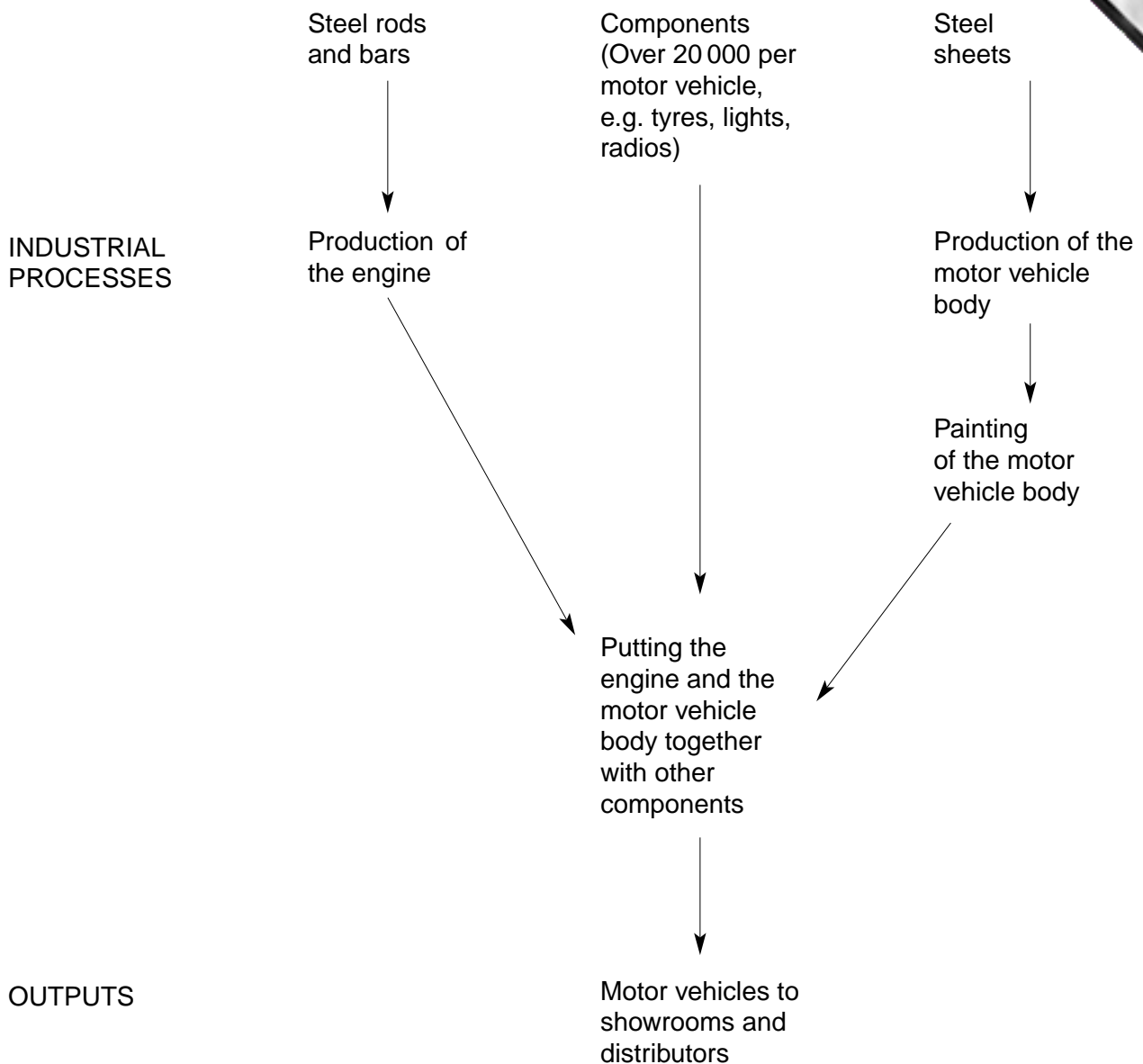


Fig. 11

- (c) (i) Name an example of a small-scale cash crop farming system you have studied. [1]
- (ii) Explain how **three** of *transport, capital, labour, markets* influence the development of this system of farming. [5]
- (iii) Describe **three** farming processes used in the example of small-scale cash crop farming you named in (c)(i). [3]

- 6 (a) Fig. 12 shows some of the changes in global energy use from 1990 to 2000.
- By how much did the use of solar energy increase from 1990 to 2000?
 - Which type of energy decreased from 1990 to 2000?
 - Give **two** reasons why many people would be pleased with the increase shown in the use of wind power and solar energy. [2]
 - State a problem, *different in each case*, in the use of
 - wind power,
 - solar energy. [2]
 - Explain why coal is not used as much at the present time as it used to be. [3]

Global energy use, 1990-2000
annual average % change

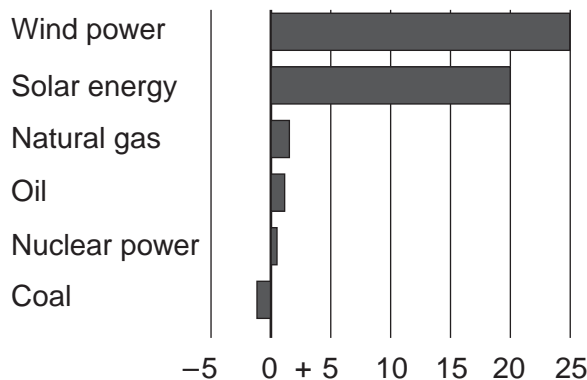


Fig. 12

- Why is oil still the most widely used source of energy in the world? [2]
- Fig. 13 (on page 13) contains some views about the use of energy. Use this information and other facts you may know, to explain *in your own words*, why there are advantages and problems in using nuclear power. [5]

Nuclear accidents have happened.

Nuclear power is less damaging to the environment than energy generated from fossil fuels because it does not contribute to global warming.

There is still no solution to the problem of nuclear waste. Nuclear materials can remain radioactive for thousands of years, and they are lethal.

Large amounts of radiation can cause cancer, and nuclear power stations use some radioactive materials. But radiation occurs naturally in the air, in the ground.

Oil is being consumed at such a rate that known reserves will run out in about 40 years.

There is no threat of nuclear fuel running out. Uranium exists in large enough quantities to last for at least another 5 000 years.

The best sources of energy are those called 'renewable'. They include the power available from the sun, from the movement of wind, tides and waves, and from underground heat. These energy sources are largely untapped.

Fig. 13

- (d) (i) Describe the advantages of the development of tourism to **either** a named region **or** country you have studied. [5]
- (ii) In some areas of the world there is a need to protect natural environments from the growth of tourism. Eco-tourism is a term used when tourism is developed while at the same time the natural environment is also carefully protected.
 - A Name an area where the development of tourism is threatening to spoil the natural environment. [1]
 - B How do you think that eco-tourism can be developed in the area named in A and at the same time protect the natural environment? [3]

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- Fig. 1. Hazel Barrett. *Six Million and Counting*. Published by the Geographical Association.
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Photograph A. © D Barton.
Fig. 9. © *The Economist*.
Fig. 10. © *The Economist*.

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