International General Certificate of Secondary Education

CAMBRIDGE INTERNATIONAL EXAMINATIONS

GEOGRAPHY   **0460/1**

PAPER 1

                                   OCTOBER/NOVEMBER SESSION 2002

                                            1 hour 45 minutes

Additional materials:
    Answer paper
    Ruler

TIME   1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

Write your name, Centre number and candidate number in the spaces provided on the answer paper/ answer booklet.

Answer any **three** questions.

Write your answers on the separate answer paper provided.

If you use more than one sheet of paper, fasten the sheets together.

INFORMATION FOR CANDIDATES

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.

Insert 1 contains Fig. 7.

Insert 2 contains Photograph A.

This question paper consists of 16 printed pages and 2 inserts.

                UNIVERSITY *of* CAMBRIDGE
                Local Examinations Syndicate   **[Turn over**

1 **(a)** Fig. 1 (opposite) provides information on the growth of the world's population and a forecast of the likely population growth until the total number of people is 8 billion.

    (i) How many years did it take for the world's population to grow from 1 billion to 2 billion? [1]

    (ii) How many years passed before the population doubled again? [1]

    (iii) What does the graph show about the expected future rate of growth of the world's population (beyond 1999)? [1]

(b) Study Fig. 2 (opposite).

    (i) How many more countries in Africa are expected to have a population of over 100 million in 2050 compared with 1998? [2]

    (ii) Which country is expected to show the biggest growth of population from 1998 to 2050? By how much is it expected to grow? [2]

    (iii) What does the map show about population changes in

        A the developing countries of the world, [2]
        B the developed countries of the world? [2]

    (iv) Give reasons for the population changes you have described in *each* of **(b) (iii) A** and **B**. [2,2]

(c) Italy, a developed country in Europe, has an ageing population. There are twice as many people aged 60 years and over than children aged below 10 years.
What problems may this cause for the country? [4]

(d) The number of international migrants increased in the world from 75 million in 1965 to 120 million in 1999.

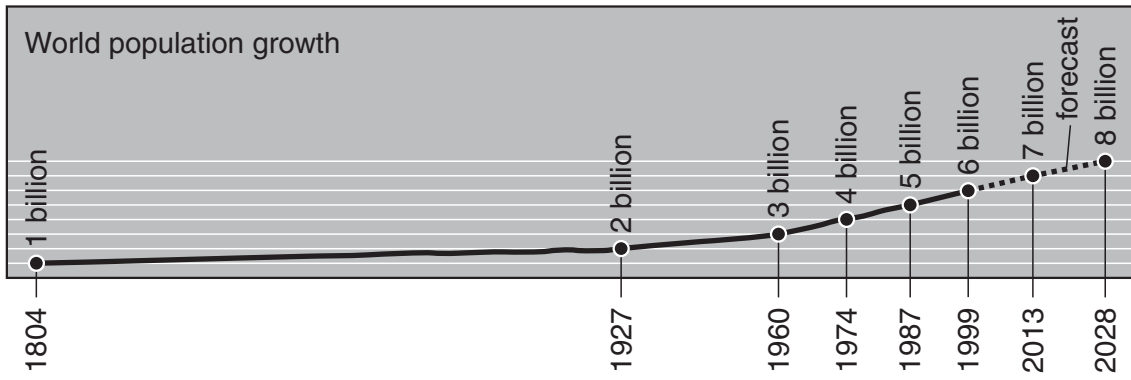With reference to named examples you have studied, explain why people migrate from one country to another. [6]

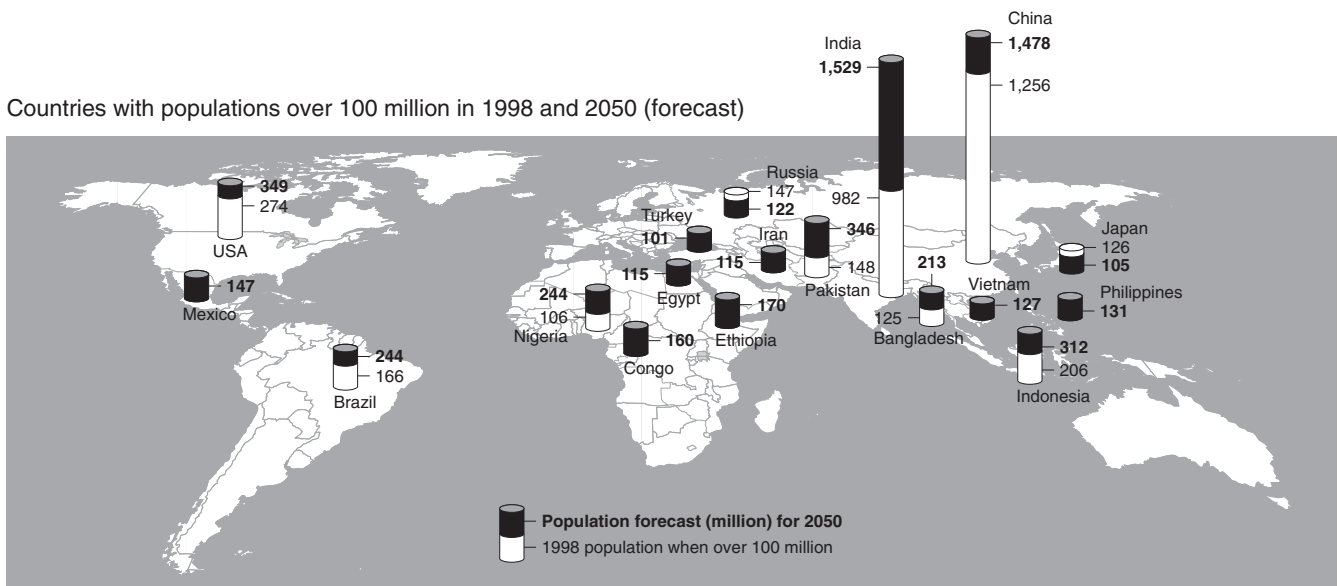**World population growth**

1 billion — 1804

2 billion — 1927

3 billion — 1960

4 billion — 1974

5 billion — 1987

6 billion — 1999

7 billion — 2013 — forecast

8 billion — 2028

Fig. 1

Countries with populations over 100 million in 1998 and 2050 (forecast)

USA **349** / 274

Mexico **147**

Brazil **244** / 166

Nigeria **244** / 106

Congo **160**

Turkey **101**

Egypt **115**

Ethiopia **170**

Russia 147 / **122**

Iran **115**

Pakistan **346** / 148

India **1,529** / 982

Bangladesh **213** / 125

Vietnam **127**

China **1,478** / 1,256

Japan 126 / **105**

Philippines **131**

Indonesia **312** / 206

Population forecast (million) for 2050

— 1998 population when over 100 million

Fig. 2

[Turn over

2 **(a)** Maps **X**, **Y** and **Z** (Fig. 3) show three different settlements in rural areas.

Fig. 3

Write down **X**, **Y** and **Z** as a list and for *each*
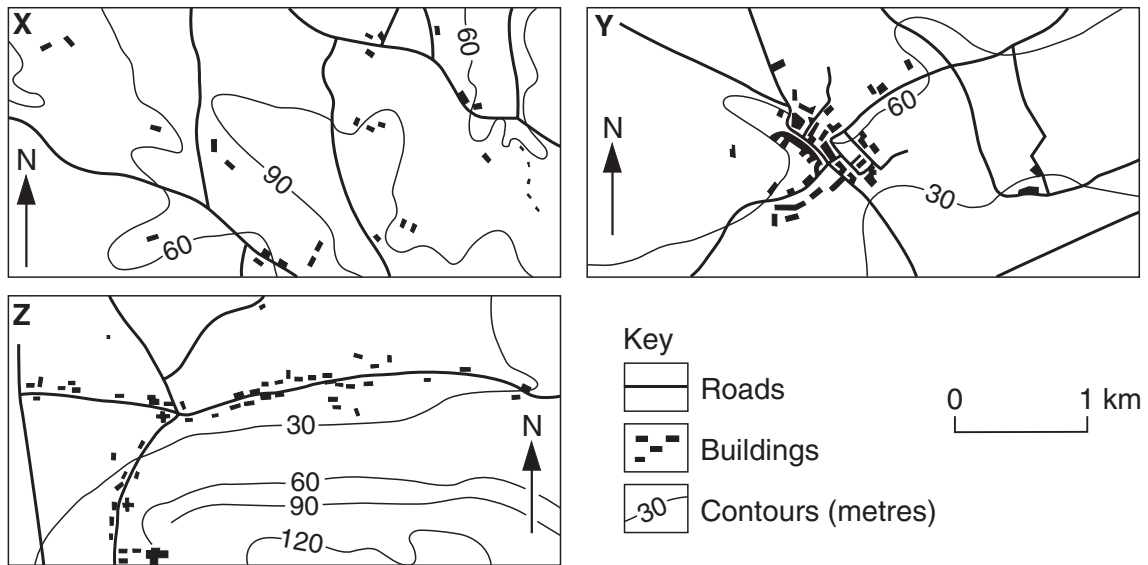
(i) name the type of settlement,   [3]

(ii) describe the distribution of buildings shown on the map,   [3]

(iii) give **one** reason why it might have developed.   [3]

(b) Fig. 4 shows the development of passenger transport in the countries of Europe over recent years.

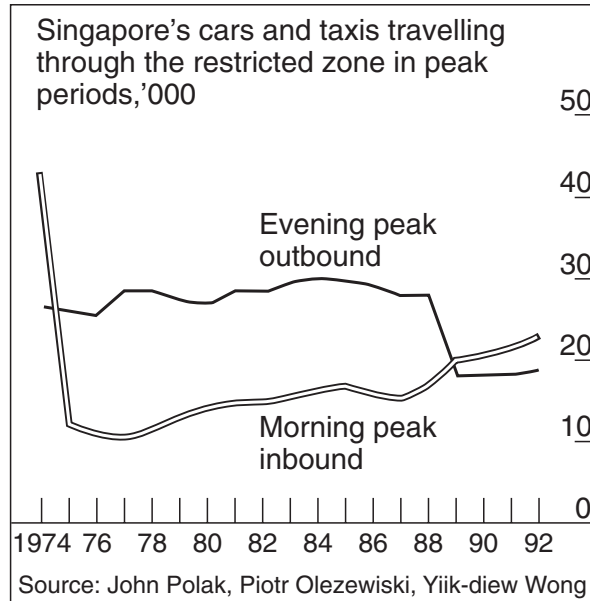Trends in passenger transport in the countries of Europe 1970–2000
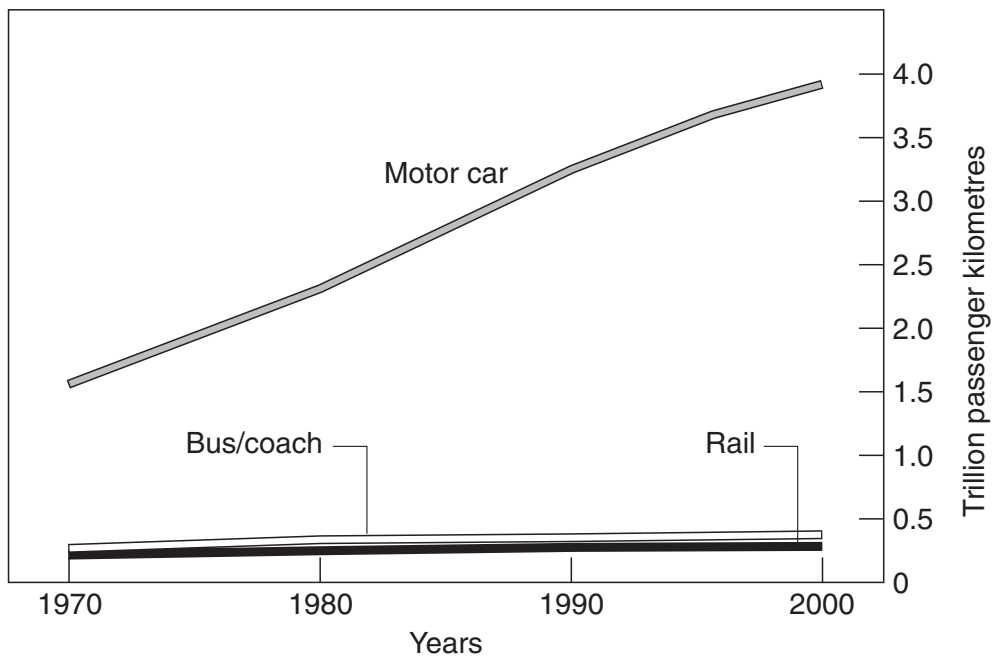
Fig. 4

(i) What does the graph show about the growth of passenger transport? [3]

(ii) From information in Fig. 4 and from information you know, explain why traffic congestion occurs in most large towns and cities throughout the world, especially at certain times of the day. [5]

(c) (i) Fig. 5 shows the results of an attempt to reduce the problem of traffic congestion in Singapore City, a large city in Asia.

The effect of charges on traffic flow in Singapore city

Singapore's cars and taxis travelling through the restricted zone in peak periods, '000

Evening peak outbound

Morning peak inbound

1974 76 78 80 82 84 86 88 90 92

Source: John Polak, Piotr Olezewiski, Yiik-diew Wong

N.B. extra charges on cars and taxis travelling through the central restricted zone in the morning peak period were introduced in the 1970s. These were extended to evening peak traffic in 1989. The restricted zone is the central area of Singapore City.

Fig. 5

From the information given, do you think that the attempt has been successful?
Give **three** reasons for your answer. [3]

(ii) Describe measures to reduce the problem of traffic congestion in towns and cities, *apart from the one referred to in* **(c) (i)**.
You should refer to examples in your answer. [5]

[Turn over

3 **(a)** Photograph A (Insert 2) and Fig. 6 (opposite) show a stretch of coastline.

    (i) Write down **A**, **B**, **C** and **D** as a list and name the physical features found at each location on Fig. 6. [4]

    (ii) State the length of the coastline shown on Fig. 6 to the nearest kilometre. [1]

    (iii) Describe the general shape and direction of the coastline shown on Fig. 6. [2]

    (iv) Describe the shape of the hills and valleys in the area. [2]

  (b) **(i)** Suggest reasons for the formation of features **A** and **B** shown on Fig. 6. [3]

    (ii) Feature **C** was once similar to feature **B**. State how and suggest why it has developed as shown on Fig. 6. [2]

    (iii) Give a reason why feature **D** may have developed. [1]

  (c) Now study Fig. 7 (Insert 1) which shows different speeds of the water as it flows around a river meander.

    (i) Complete the line on Fig. 7 which shows the river speed of 20 centimetres per second. [2]

    (ii) On Fig. 7, shade the part of the river where the flow is greater than 40 centimetres per second. [1]

    (iii) Describe the shape and features of the meander shown in Fig. 7. [2]

    (iv) Give reasons for the shape and features of the meander you have described in **(c) (iii)**. [2]

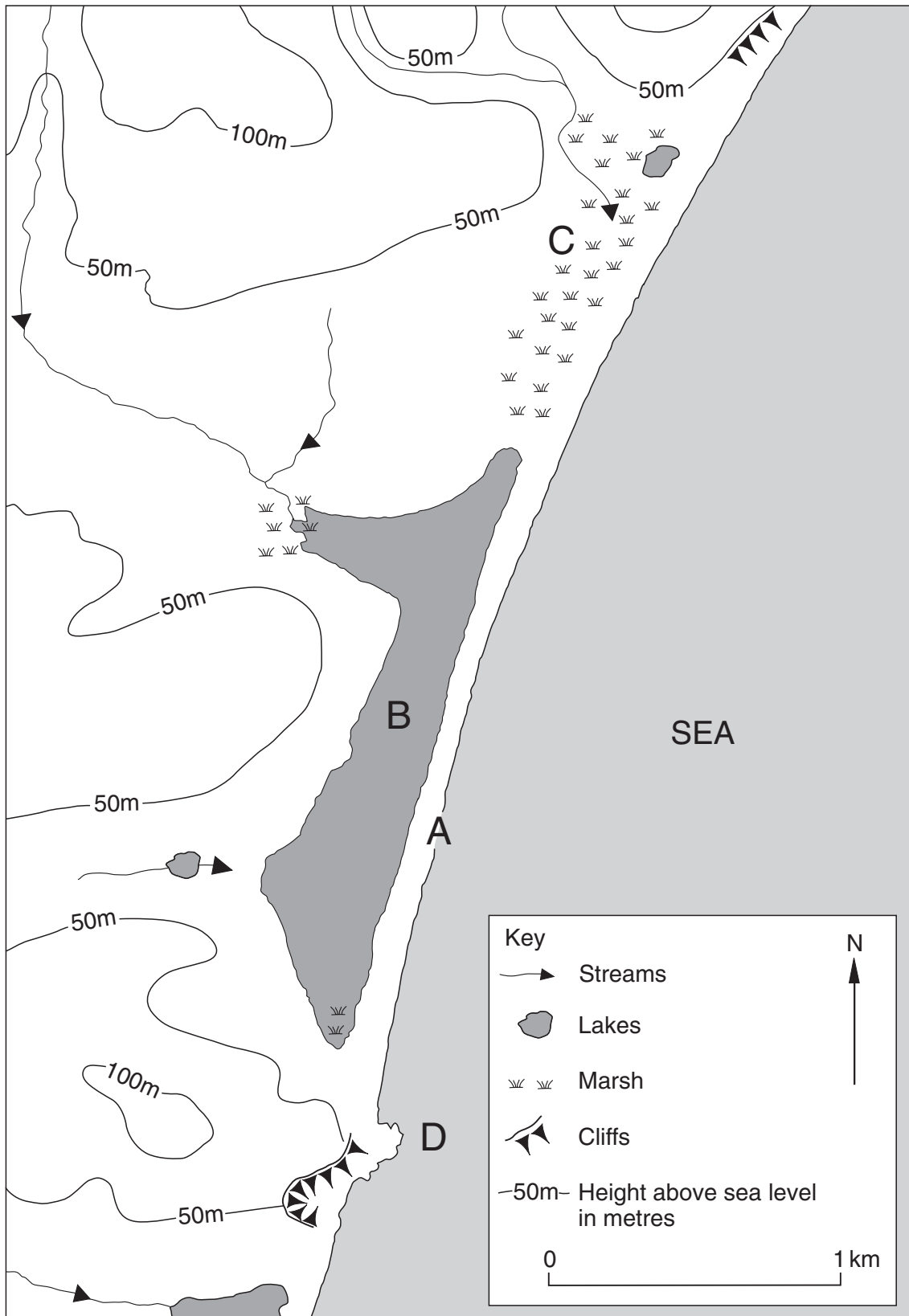   **(v)** Why do meanders sometimes develop into ox-bow lakes? [3]

Fig. 6

Key

→ Streams

Lakes

Marsh

Cliffs

—50m— Height above sea level in metres

0   1 km

SEA

[Turn over

4 Study Fig. 8 which shows the disasters (including natural hazards) which occurred in the world between 1971 and 1996.
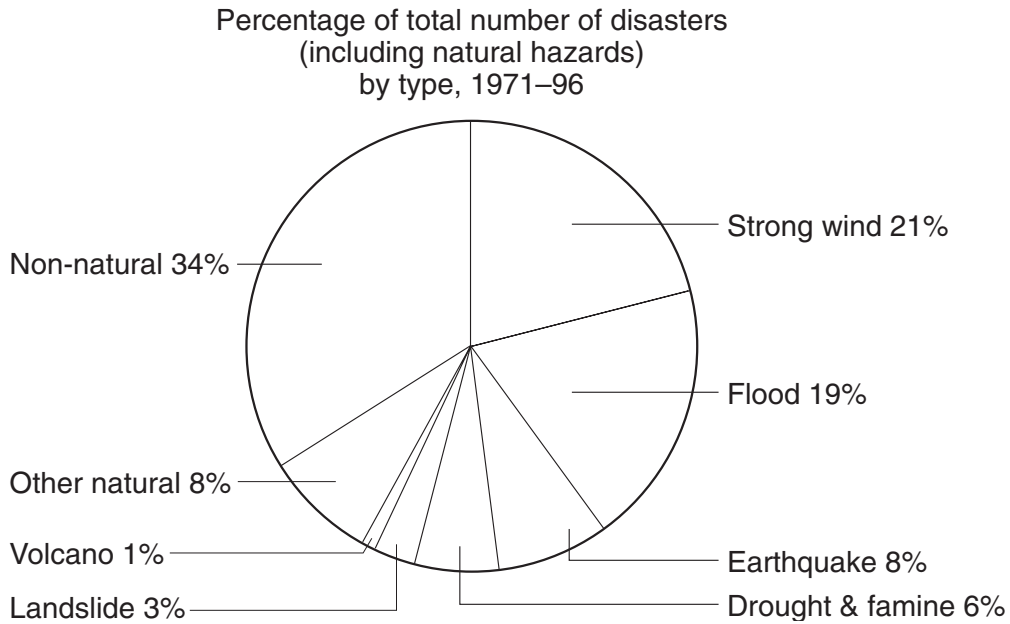
Percentage of total number of disasters
(including natural hazards)
by type, 1971–96

Fig. 8

(a) (i) Which **two** natural hazards occurred most over the time shown? [2]

(ii) Why are some earthquakes more hazardous than others? [3]

(iii) For *each* of **A** and **B**, name an area where it may occur and give reasons for your answer.

A earthquakes and volcanoes,
B drought. [3,3]

(iv) What effects might droughts have upon the lives of people in areas where they occur? [3]

(b) (i) Fig. 9 shows the main features of a tropical storm. Use information from this diagram to help you to describe **three** of the main features of a tropical storm. [3]
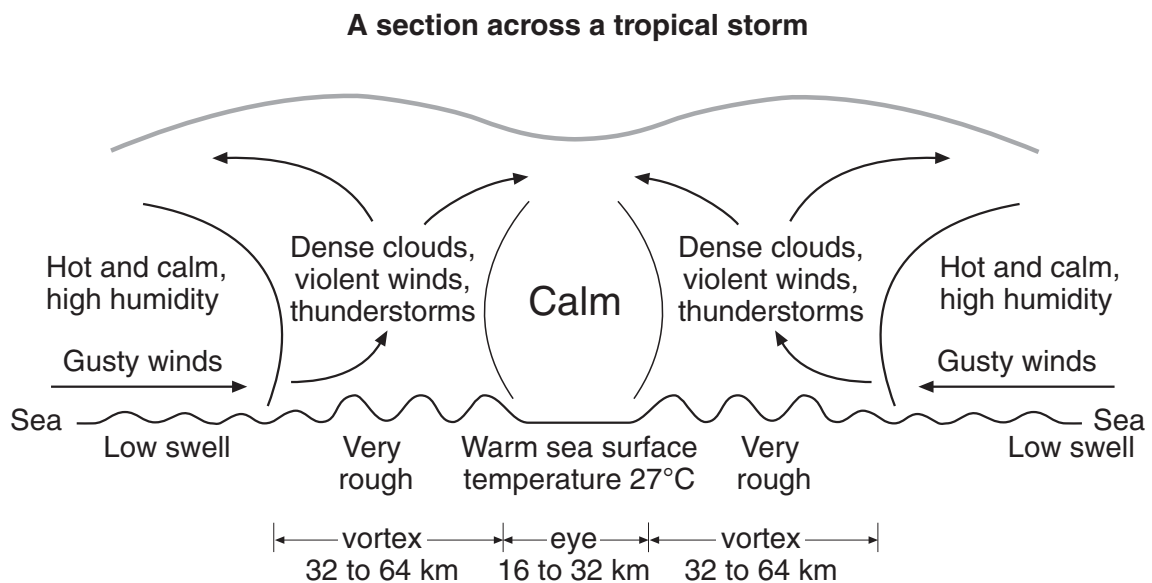
A section across a tropical storm

Fig. 9

0460/1 O/N/02

(ii) Fig. 10 shows a large area affected by river floods in Mozambique in southern Africa during February 2000.

Mozambique floods

Fig. 10

Describe **three** causes of river flooding in areas such as Mozambique.   [3]

(iii) Why is river flooding on the scale seen in Mozambique both difficult to prepare for and so serious for the people living in the area affected?   [5]

5 (a) Study Fig. 11 which gives information about oil production and its use in areas important for supplying most of the world's oil.

Region I North America, South America, Europe

Region II The Middle East

Region III Asia (excluding the Middle East)

USED
51

USED
4

USED
21

PRODUCED
45

PRODUCED
22

PRODUCED
8

DEFICIT
6

SURPLUS
18

DEFICIT
13

Key   Figures in million barrels per day

Fig. 11

(i) Compare **Region I** (North America, South America and Europe) with **Region II** (The Middle East) in terms of

A   the amount of oil produced,
B   the amount of oil used,
C   the relationship between **A** and **B**   [3]

(ii) What evidence is there on Fig. 11 to suggest why oil is of great importance in world trade?   [3]

(iii) Why is oil in such great demand throughout the world?   [3]

(iv) Why is oil referred to as a non-renewable fuel and also as a fossil fuel?   [2]

(v) Name **two** other fossil fuels.   [2]

(b) The newspaper extract opposite (Fig. 12) gives details about a plant (factory) in southern France which processes used nuclear fuel, making some of it into new fuel for nuclear power stations.

(i) Study the newspaper article and explain why some people are concerned about this plant.   [2]

(ii) What other safety concerns do some people have about nuclear power?   [2]

(iii) Apart from safety factors, describe **two** other factors which influence the siting and location of nuclear power stations.   [2]

(c) What are your views about the development and use of alternative energy sources?
You may wish to refer to **one** or **more** of:
hydro-electric power,
tidal energy,
wind power,
wave energy,
solar energy,
geothermal energy.   [6]

Earthquake fear for nuclear plant

David Hearst in Paris

The French nuclear safety inspectorate has demanded the closure of a nuclear reprocessing plant in the south of the country because it is built on an earthquake zone which seismologists fear could soon become active.

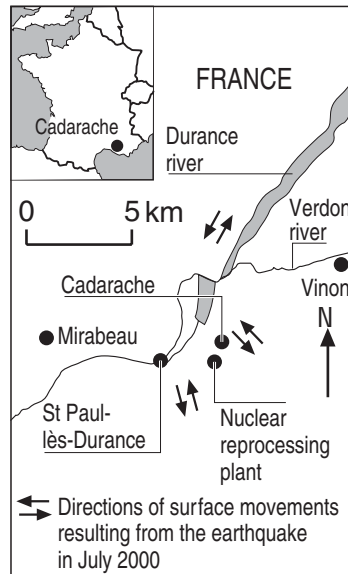The last big earthquake in the area was in 1913, but there could be a major earthquake once every hundred years
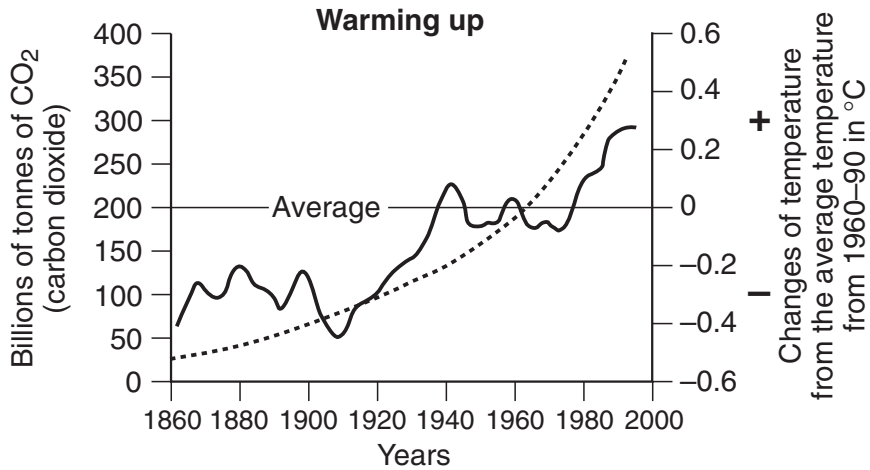

Fig. 12

[Turn over

6 Figs 13A, 13B and 14 are about global warming.

(a) (i) What do you understand by the term 'global warming'? [2]

(ii) From Fig. 13A, describe the changes from 1860 to 2000 in

A CO_2 (carbon dioxide) in the atmosphere, [2]
B temperatures. [2]

Warming up

Key

···· Buildup of CO_2 in the atmosphere (billions of tonnes)

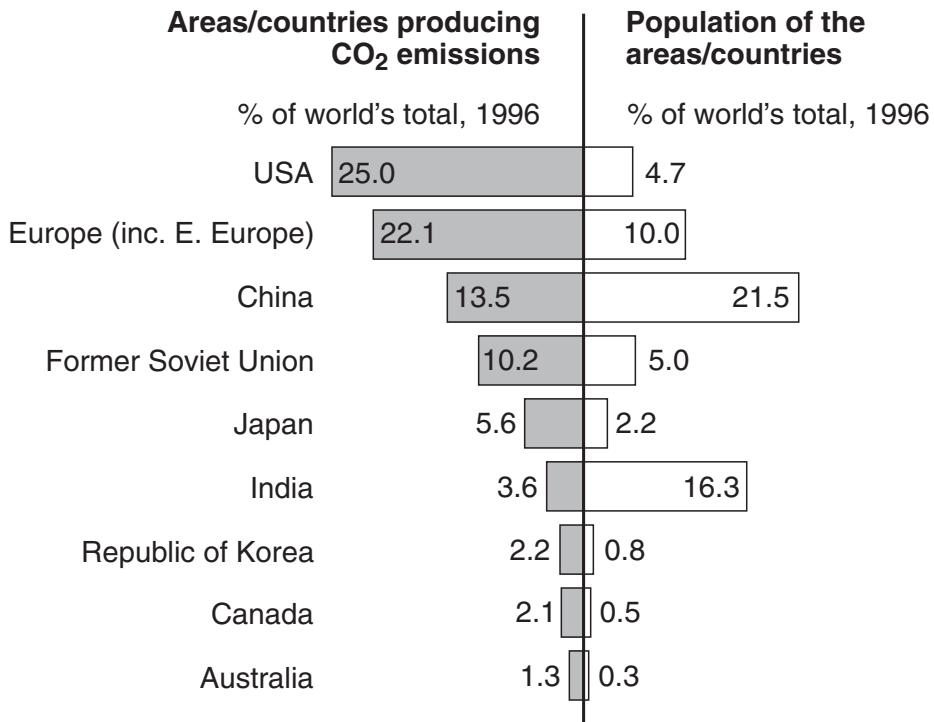— World temperature changes from the 1960–90 average (°C)

Fig. 13A

Areas/countries producing CO_2 emissions	Population of the areas/countries
% of world's total, 1996	% of world's total, 1996
USA 25.0	4.7
Europe (inc. E. Europe) 22.1	10.0
China 13.5	21.5
Former Soviet Union 10.2	5.0
Japan 5.6	2.2
India 3.6	16.3
Republic of Korea 2.2	0.8
Canada 2.1	0.5
Australia 1.3	0.3

Fig. 13B

(b) From Fig. 13B:

(i) state the percentage of the world total of CO_2 produced by USA and Europe combined; [1]

(ii) state how the amount of air pollution from the production of CO_2 per person in the USA compares with that of India; [2]

(iii) suggest why the areas/countries named in Fig. 13B produce more CO_2 than other world areas such as Africa and South America. [2]

(Question 6 continues on page 14)

[Turn over

(c) With reference to Fig. 14 (opposite) and other information, answer the following.

    (i) How does global warming cause a rise in sea level? [1]

   (ii) Name **one** city in Europe (E) and **one** city in Asia (A) which is in danger of flooding from a rise in sea level.
Label each named city **either** A **or** E as appropriate. [2]

  (iii) Describe **three** problems for island areas in many parts of the world as they are affected by a rise in sea level. [3]

  (iv) Apart from a rise in sea level, describe **one** other way in which global warming may cause problems for people in many parts of the world. [1]

(d) **(i)** What can be done to reduce the problem of global warming? [3]

   (ii) Why is it difficult to reduce global warming? [4]

How global warming threatens some major world cities and island nations
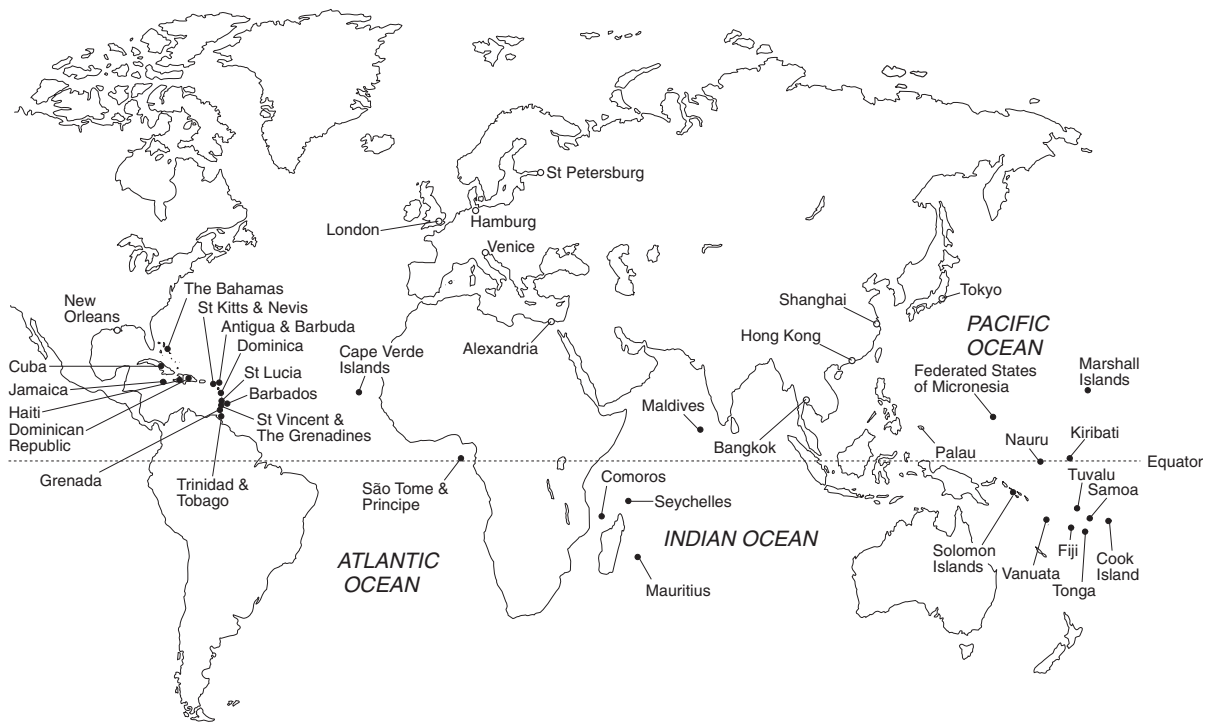
Key

- Members of the Alliance of Small Island States in danger of flooding from a rise in sea level
- ○ Cities in danger of flooding from a rise in sea level

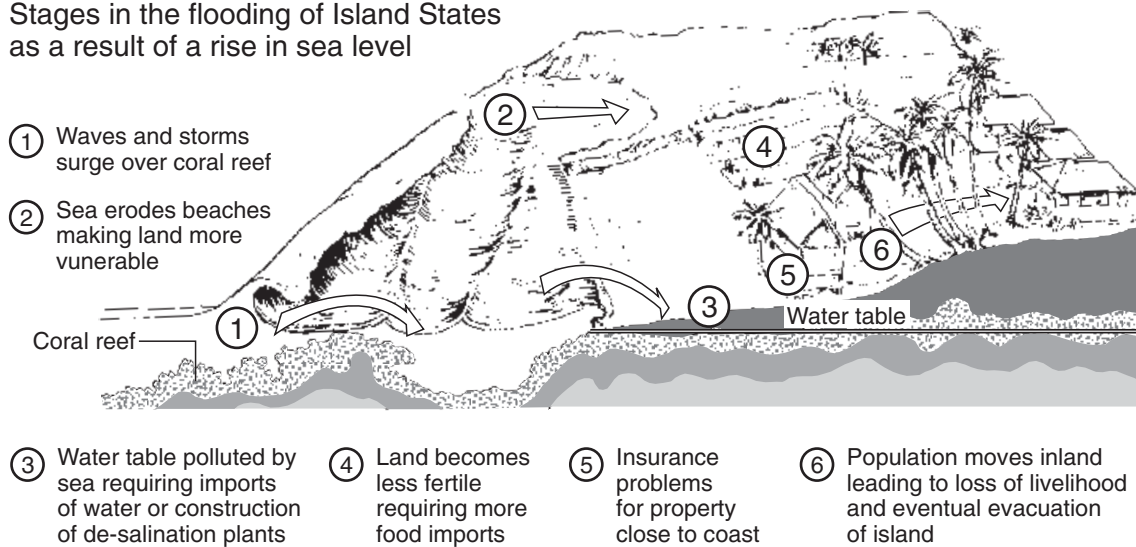Stages in the flooding of Island States as a result of a rise in sea level

1. Waves and storms surge over coral reef

2. Sea erodes beaches making land more vunerable

3. Water table polluted by sea requiring imports of water or construction of de-salination plants

4. Land becomes less fertile requiring more food imports

5. Insurance problems for property close to coast

6. Population moves inland leading to loss of livelihood and eventual evacuation of island

Fig. 14