



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

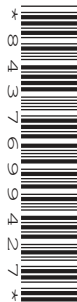
CANDIDATE
NAME

CENTRE
NUMBER

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CANDIDATE
NUMBER

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ENVIRONMENTAL MANAGEMENT

0680/22

Paper 2

October/November 2016

1 hour 45 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

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 an HB pencil for any diagrams or graphs.

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

DO **NOT** WRITE IN ANY BARCODES.

Answer **both** questions.

Electronic calculators may be used.

You may lose marks if you do not show your working or if you do not use appropriate units.

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.

This document consists of **14** printed pages and **2** blank pages.

2

1 (a) (i) State what is meant by the terms *birth rate* and *life expectancy*.

birth rate

life expectancy

[2]

(ii) Look at the table below, which gives information about the birth rates and the death rates in some countries for the same year.

country	birth rate per 1000	death rate per 1000	natural increase per 1000
country A	23.0	6.0	17.0
country B	12.2	7.0	5.2
country C	12.6	8.0	4.6
country D	21.0	7.0	14.0
country E	8.5	9.0	−0.5
country F	12.0	9.0	

Natural increase is the difference between the birth rate and the death rate. Complete the table by calculating the natural increase for country F. [1]

(iii) State the letter of the country which has:

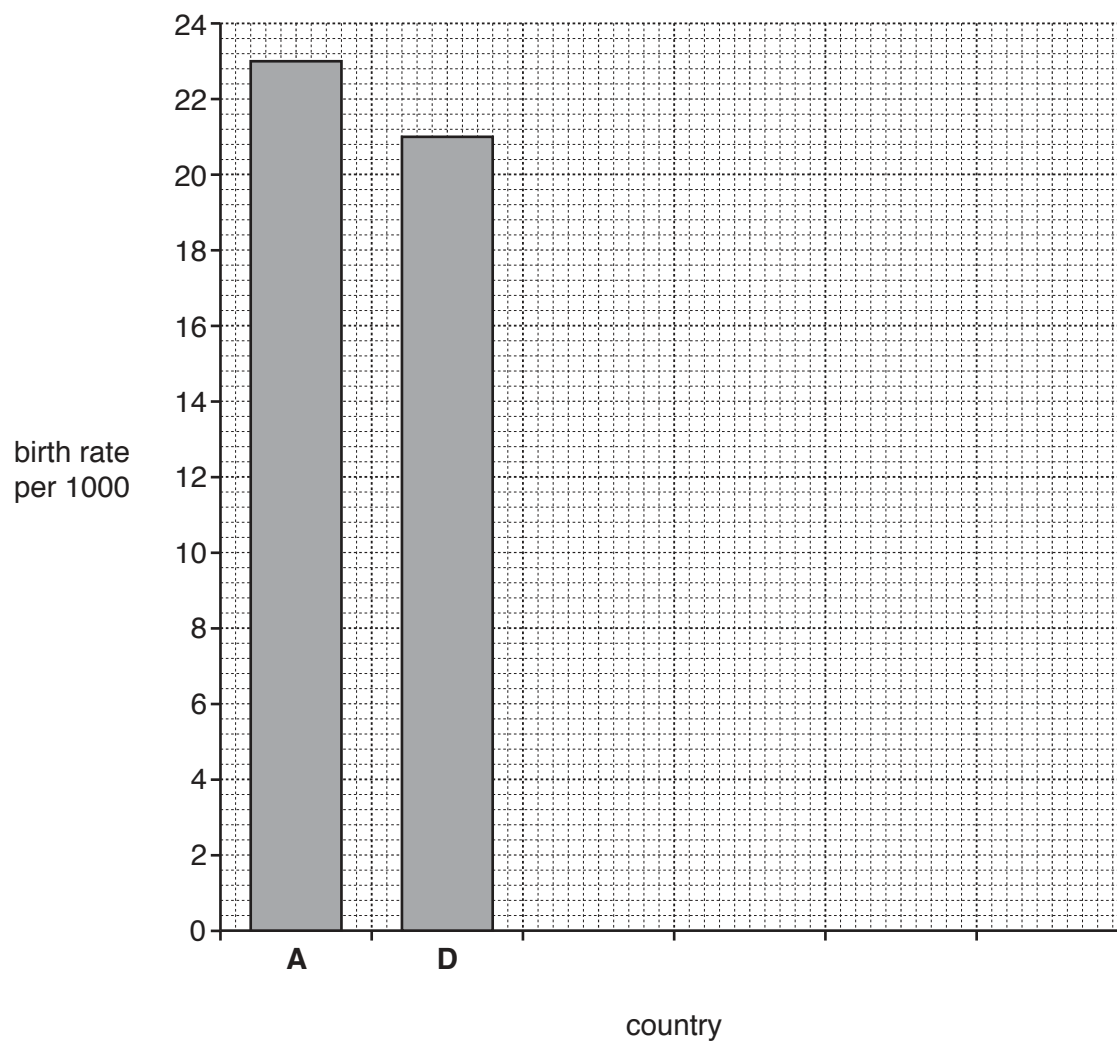
the highest natural increase,

a natural population decrease.

[2]

3

- (iv) Use the information in the table to complete the bar graph of birth rates. You should place the countries in rank order of birth rates (highest to lowest). [3]



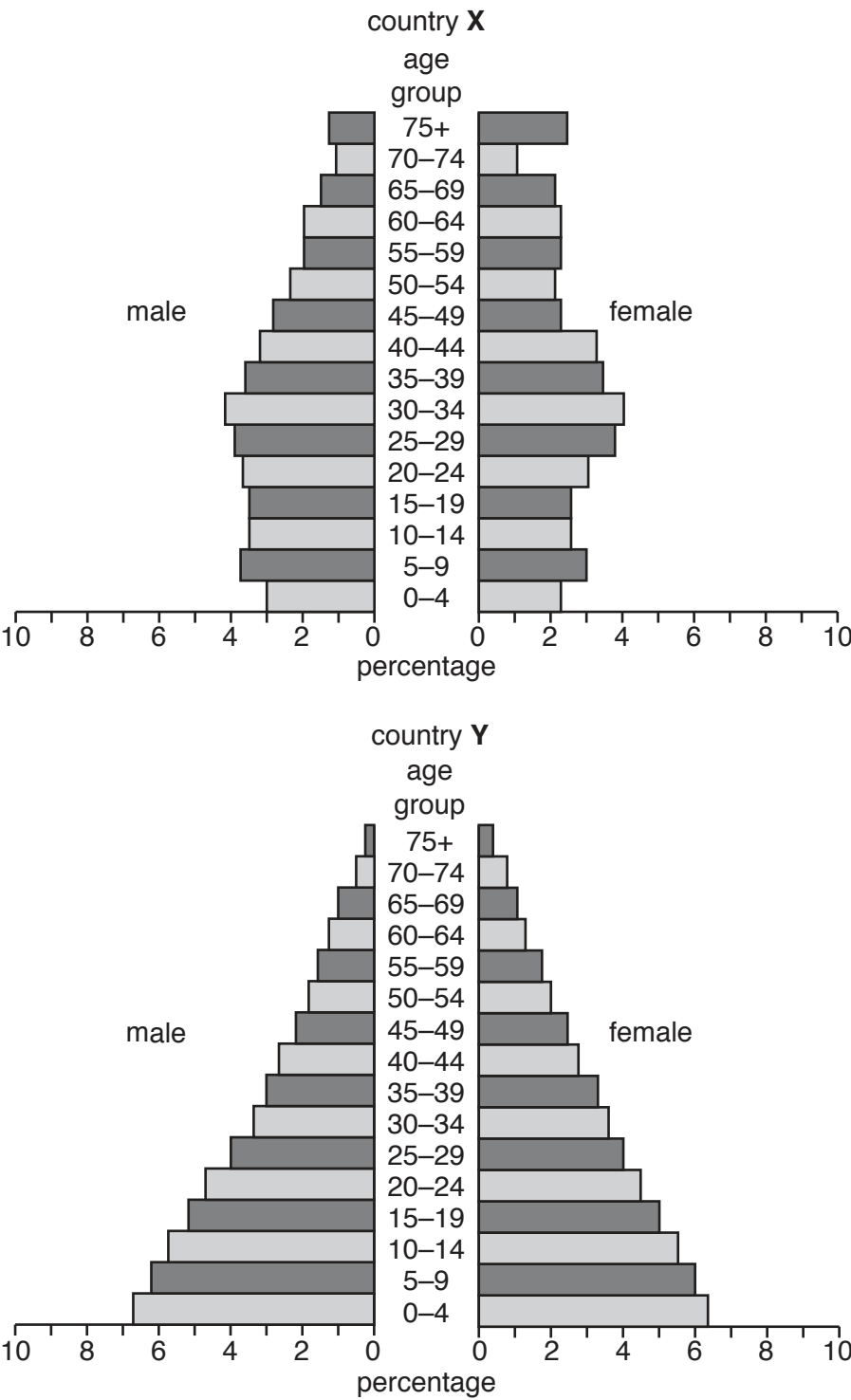
- (v) Suggest a way in which the population of a country might grow other than by natural increase.

.....

.....[1]

4

(b) Look at the population pyramids below for country X and country Y.



(i) Use the information from the population pyramids to complete the table below. [3]

the percentage of males in country X aged between 0–4	
the percentage of females in country Y aged between 5–9	
the letter of the country with the largest percentage of people aged 75+	

(ii) Suggest what would happen to the shape of the pyramid for country **Y** in the future if birth rates decrease.

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

(iii) Describe **three** differences in the shape of the population pyramid for country **X** and country **Y**.

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.....[3]

(iv) Suggest reasons for the differences you have described in **(b)(iii)**.

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.....[3]

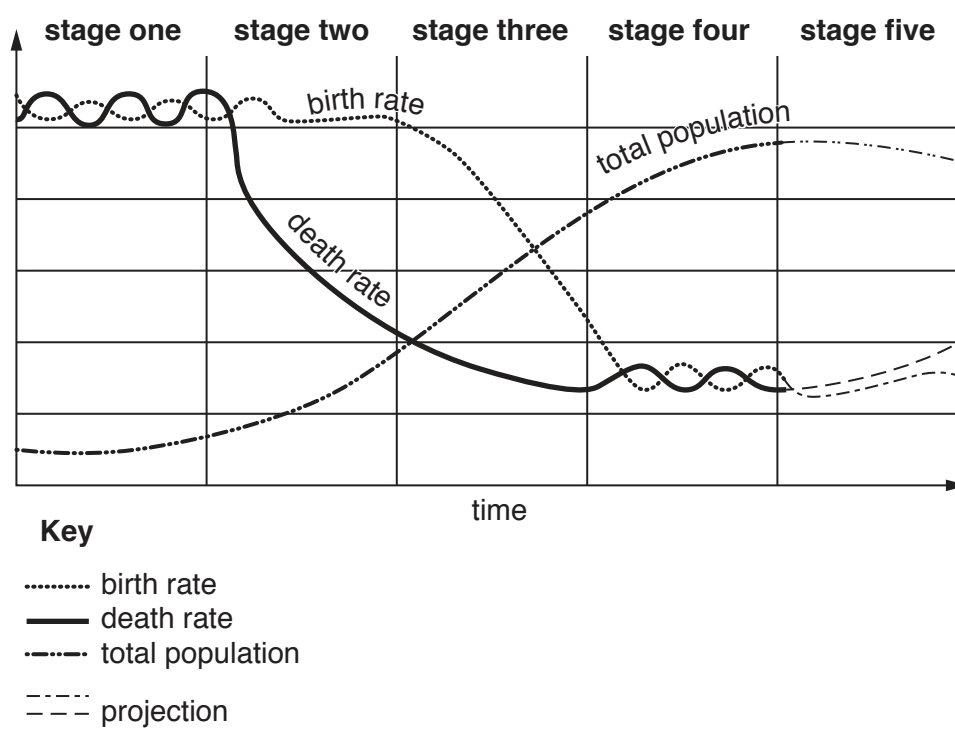
(v) Suggest strategies which a country can use to control its population growth.

.....
.....
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.....
.....
.....[4]

(vi) Suggest what problems a country might face as a result of having an ageing population.

.....[3]

(c) Look at the diagram below, which shows the demographic transition model.



(i) State what happens to the birth rate in **stage three** of the model.

.....[1]

(ii) State the stage with the fastest increase in total population.

stage [1]

- (iii) Death rates decrease in **stage two** of the model.
Suggest reasons why death rates decrease in a country.

.....[5]

- (iv) State **one** limitation of the demographic transition model.

.....[1]

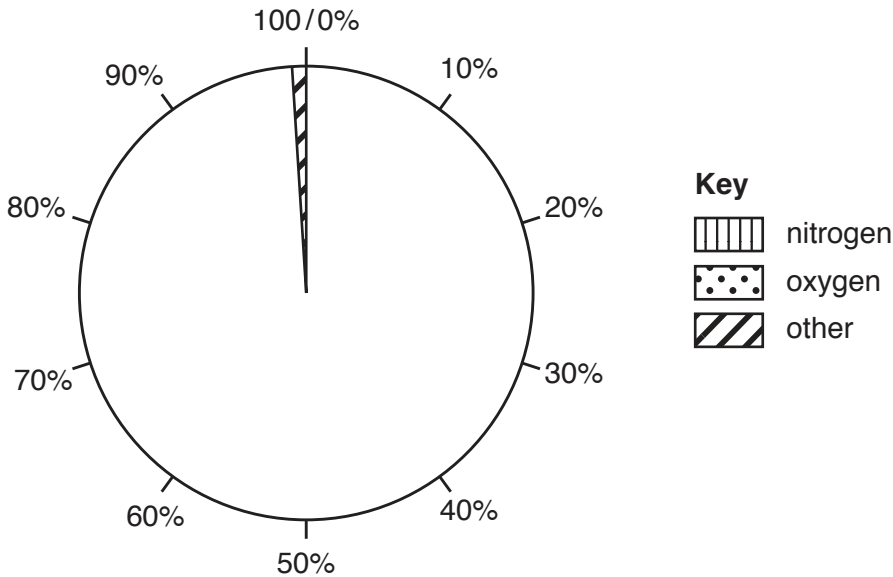
- (d)** Population growth is a global concern because it increases pressure on the environment. Explain how population growth can lead to soil erosion and desertification.

[6]

- 2 (a) Look at the table below, which shows information about the percentage of the main gases in the atmosphere.

gas	percentage of atmosphere
nitrogen	78
oxygen	21
other	1

- (i) Use the information in the table to complete the pie graph below. [2]



- (ii) State **two** gases that could be included in the category 'other'. [2]
- and

- (iii) Human activities increase the percentage of some gases in the atmosphere causing pollution. State **one** gas that causes pollution and suggest **one** human activity which produces this gas.

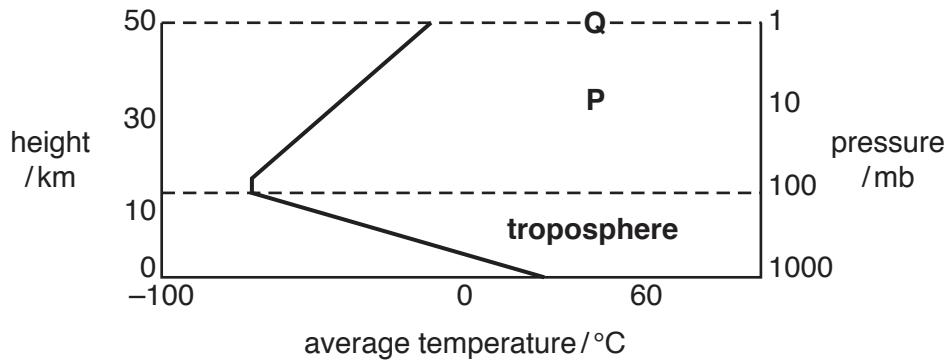
name of gas

human activity [2]

- (iv) Describe ways in which changes in the atmosphere and climate can affect human health.
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-
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-
-
- [3]

9

- (b) Look at the diagram below (not to scale), which shows information about the structure of the atmosphere.

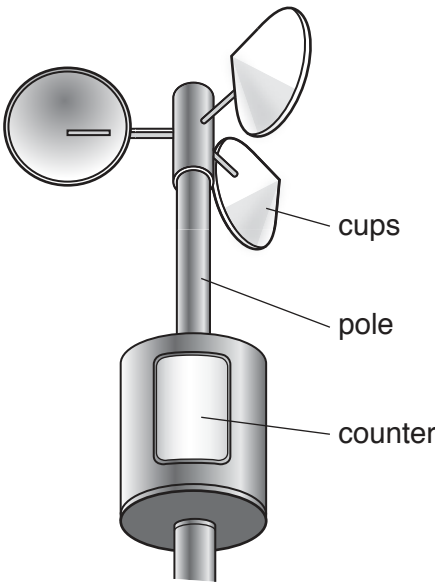


- (i) Name the layer at **P**. [1]
- (ii) State the height of the boundary **Q**.
..... km [1]
- (iii) State the range of pressure for the troposphere layer as shown in the diagram.
..... mb [1]
- (iv) State the relationship between height and average temperature in the **troposphere** as shown in the diagram.
.....
..... [1]
- (v) Describe **two** characteristics of the troposphere **not** shown in the diagram.
.....
.....
.....
..... [2]

(c) (i) Look at the table below, which shows elements of the weather. Complete the table by stating the instrument used to measure each element of the weather. [3]

element of weather	instrument used
temperature	
sunshine hours	
atmospheric pressure	

(ii) Look at the diagram below, which shows an instrument used to measure wind speed.



Explain how this instrument measures wind speed.

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.....[4]

11

- (iii)** Wind is used to generate electricity. Suggest reasons why some people might agree with using wind power to generate electricity but other people do not agree.

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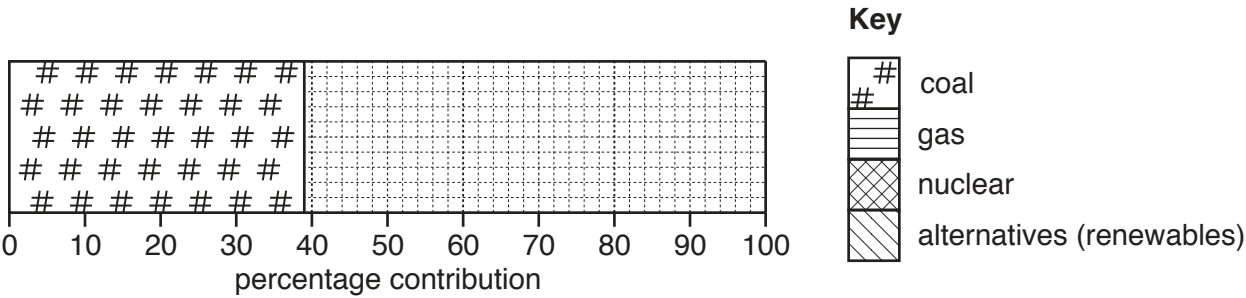
.....[5]

12

(d) The table shows the energy sources used to generate electricity in a developed country.

source	percentage contribution
coal	39
gas	28
nuclear	19
alternatives (renewables)	14

(i) Use the information in the table to complete the divided bar graph below. [3]



(ii) Calculate the percentage of electricity which is generated from the two fossil fuels named in the table.

Space for working.

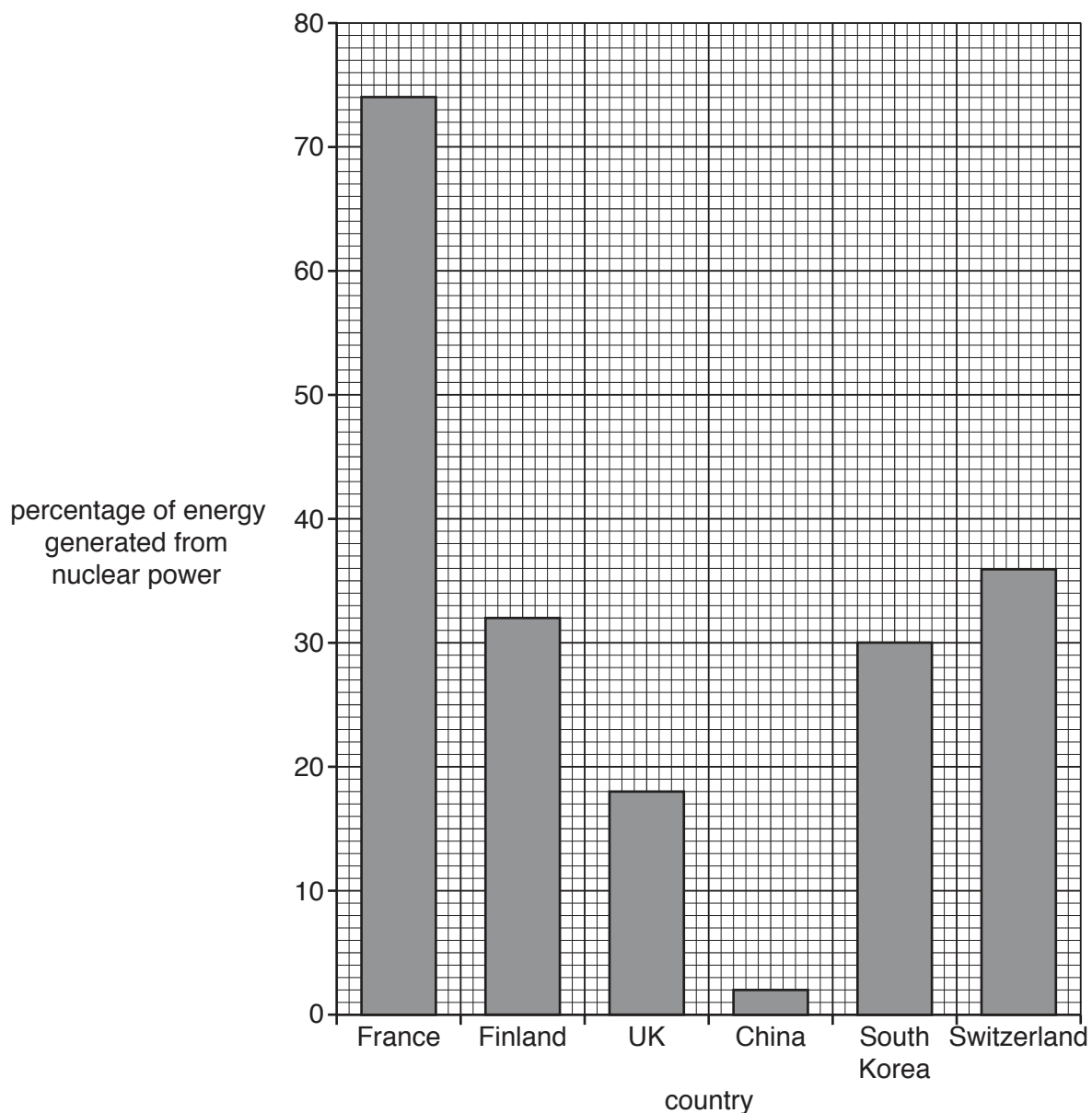
..... % [1]

(iii) Name a fossil fuel **not** included in the table.

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

13

- (iv) Look at the bar graph below, which shows the percentage of energy generated from nuclear power in some countries.



Write the countries in rank order (highest to lowest) in the spaces below. France and Finland have been completed for you. [2]

1. France
2.
3. Finland
4.
5.
6.

14

- (e)** Suggest reasons why some countries may use nuclear power for electricity generation rather than fossil fuels and alternative sources.

.....[6]

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