Cambridge O Level

Cambridge International Examinations
Cambridge Ordinary Level

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER					

GEOGRAPHY **2217/23**

Paper 2 **October/November 2016**

2 hours 15 minutes

Candidates answer on the Question Paper.

Additional Materials: Ruler
Calculator
Protractor
Plain paper

1:50 000 Survey Map Extract is enclosed with this Question Paper.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces provided.
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.

Section A
Answer **all** questions.
Section B
Answer **one** question.

The Insert contains Photograph A for Question 4, Fig. 8, Table 1 and Photograph B for Question 7, and Figs. 12 and 13 for Question 8.
The Survey Map Extract and the Insert are **not** required by the Examiner.
Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

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 **29** printed pages, **3** blank pages and **1** Insert.

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CAMBRIDGE International Examinations

Section A

Answer **all** questions in this section.

1 The 1:50 000 map is of Tullaghan Bay, Ireland.

(a) Study the area of the map show in Fig. 1.

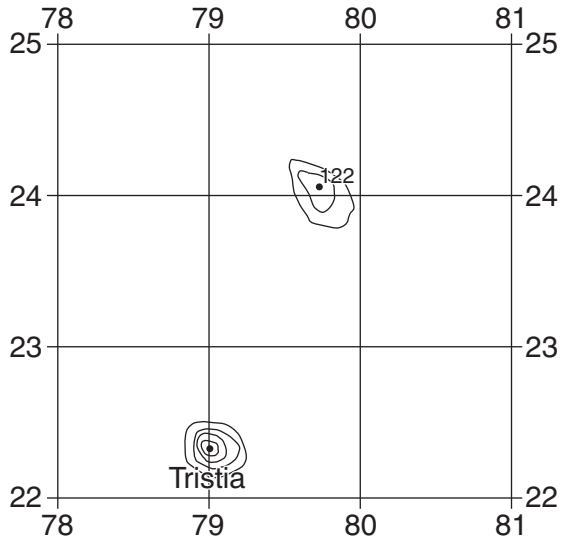

Fig. 1

(i) Give the compass direction from the summit (highest point) at Tristia to the summit at the 122 m spot height.

.....[1]

(ii) What is the difference in height between the two summits?

.....[1]

(b) Measure the road distance, along the R313, from the cross-roads at Bunnahowen to Bangor, beyond the eastern edge of the map. Show your working and give your answer in kilometres.

.....

.....[2]

(c) State the general direction of flow of the Owenmore River in the east of the map and give **two** pieces of map evidence in support of your answer.

Direction of flow .....

Evidence .....

.....

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.....[3]

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(d) **(i)** Describe the physical features of the coast in the area of the map.

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.....[6]

(ii) The track crossing squares 7127 and 7226 is sometimes covered by the sea. Circle the answer below which shows at which time this happens.

at low tide at high tide only during storms

[1]

(e) Study the area of the map shown in Fig. 2.

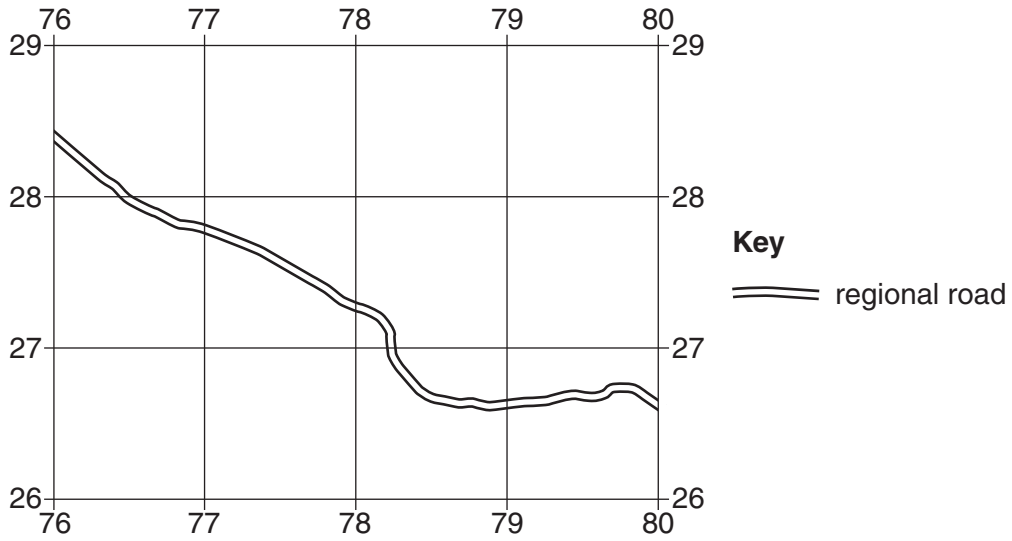

Fig. 2

(i) On Fig. 2, draw the 200 m contour and shade the area of land over 200 m.

.....[1]

(ii) The regional road passes along a valley. Compare the relief on the north and the south of the road.

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.....

.....

.....[4]

(f) Give the six-figure grid reference of the graveyard in the south-west of the map.

.....[1]

[Total: 20 marks]

TURN PAGE FOR QUESTION 2

2 Study Fig. 3, which shows a population pyramid for each continent in 2010.

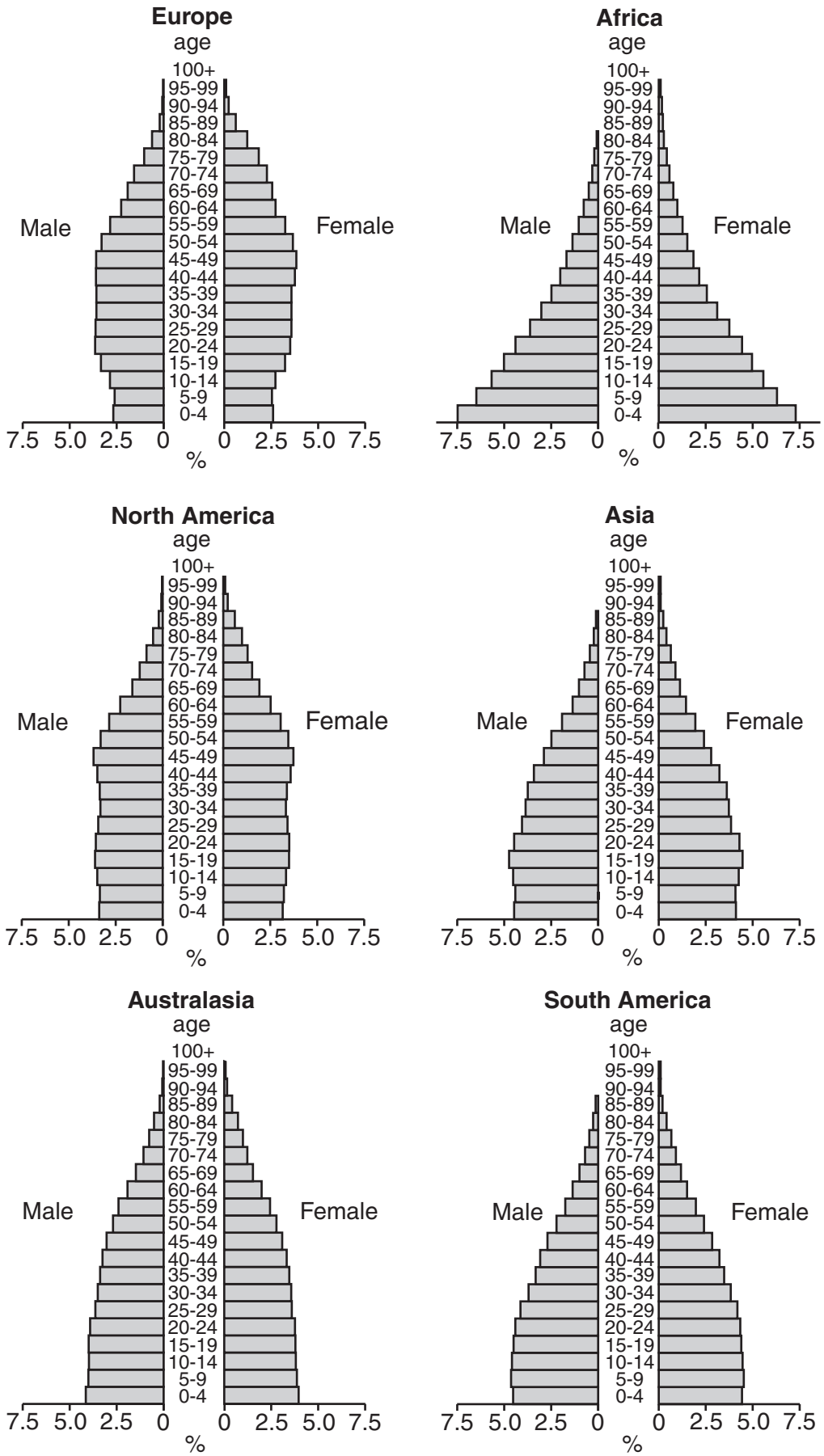

Fig. 3

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(a) **(i)** Name a continent which has a smaller percentage of people in the 0–4 age group than in the 5–9 age group.

.....[1]

(ii) Which continent has the greatest difference in percentage between males and females in the 75–79 age group?

.....[1]

(b) **(i)** Using Fig. 3, identify the continent which is likely to have the highest birth rate. Explain your answer with evidence from Fig. 3.

.....

.....

.....[2]

(ii) Using Fig. 3, identify which pyramid shows the longest life expectancy. Explain your answer with evidence from Fig. 3.

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.....[2]

(c) Describe the population structure for those aged less than 30 in Asia.

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.....[2]

[Total: 8 marks]

3 Study Fig. 4, which is a map of an area of beach.

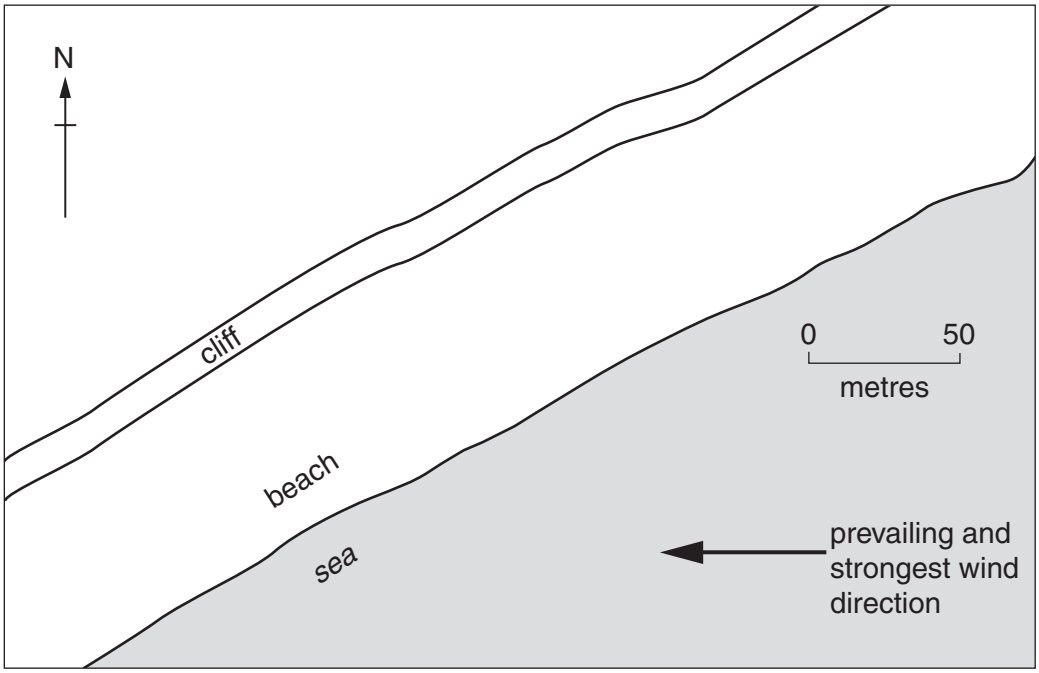


Fig. 4

(a) **(i)** What is meant by the term *prevailing* wind?

.....

.....[1]

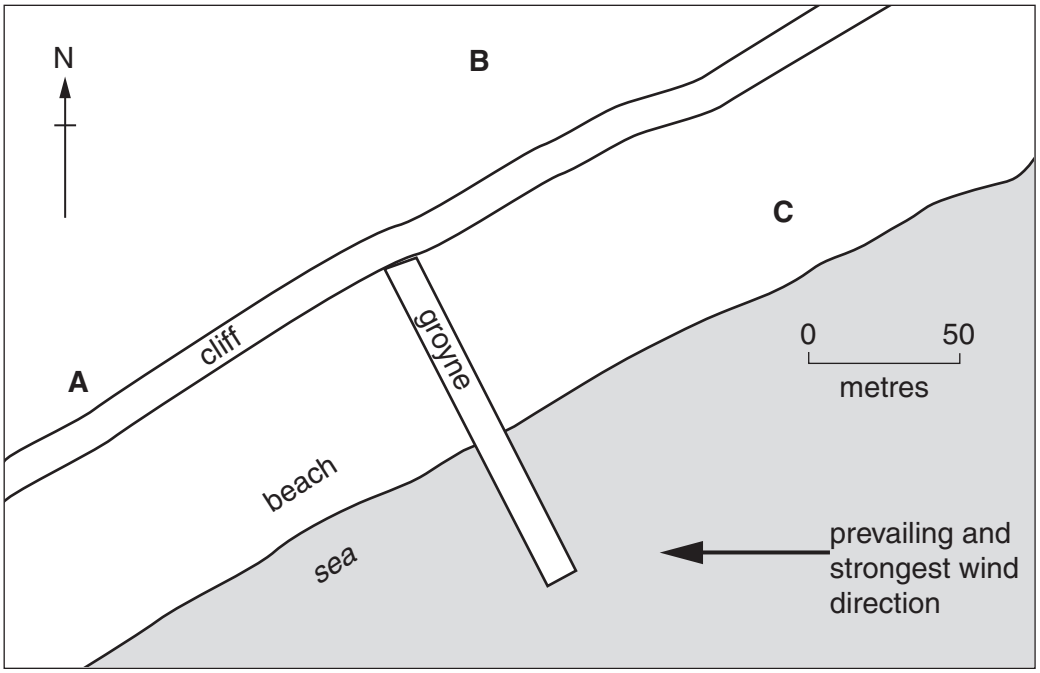
(ii) What is the direction of the prevailing and strongest wind?

.....[1]

(iii) On Fig. 4, draw and label lines to indicate the wave-crests generated by this wind direction. [1]

(iv) On Fig. 4, draw and label an arrow on the beach to indicate the direction of longshore drift. [1]

(b) Study Fig. 5, which shows the same location with proposed developments in the area.



Key

A B C proposed hotel sites

Fig. 5

(i) Draw and label on Fig. 5 to indicate how the beach is likely to change in response to the construction of the groyne. [2]

(ii) Which location **A**, **B** or **C** would be the best place to build a new hotel? Give **two** reasons for your answer.

Choice of location .....

1 .....

.....

2 .....

.....[2]

[Total: 8 marks]

4 Study Photograph A (Insert), which shows a river in Uganda.

(a) **(i)** Give **one** use of the river, at this location, which is suggested by the photograph.

.....[1]

(ii) Why should drinking water not be taken from the river here, at this time?

.....

.....[1]

(iii) Should drinking water be collected upstream or downstream of this location? Give a reason for your answer.

.....

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.....[1]

(b) **(i)** Suggest reasons for the bare ground next to the river.

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.....[2]

(ii) Give **one** piece of evidence from Photograph A which shows that the river sometimes flows faster.

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.....[1]

(c) Describe the vegetation seen in the background of Photograph A.

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.....[2]

[Total: 8 marks]

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TURN PAGE FOR QUESTION 5

5 Study Fig. 6, which shows the location of chemical manufacturing in the USA.

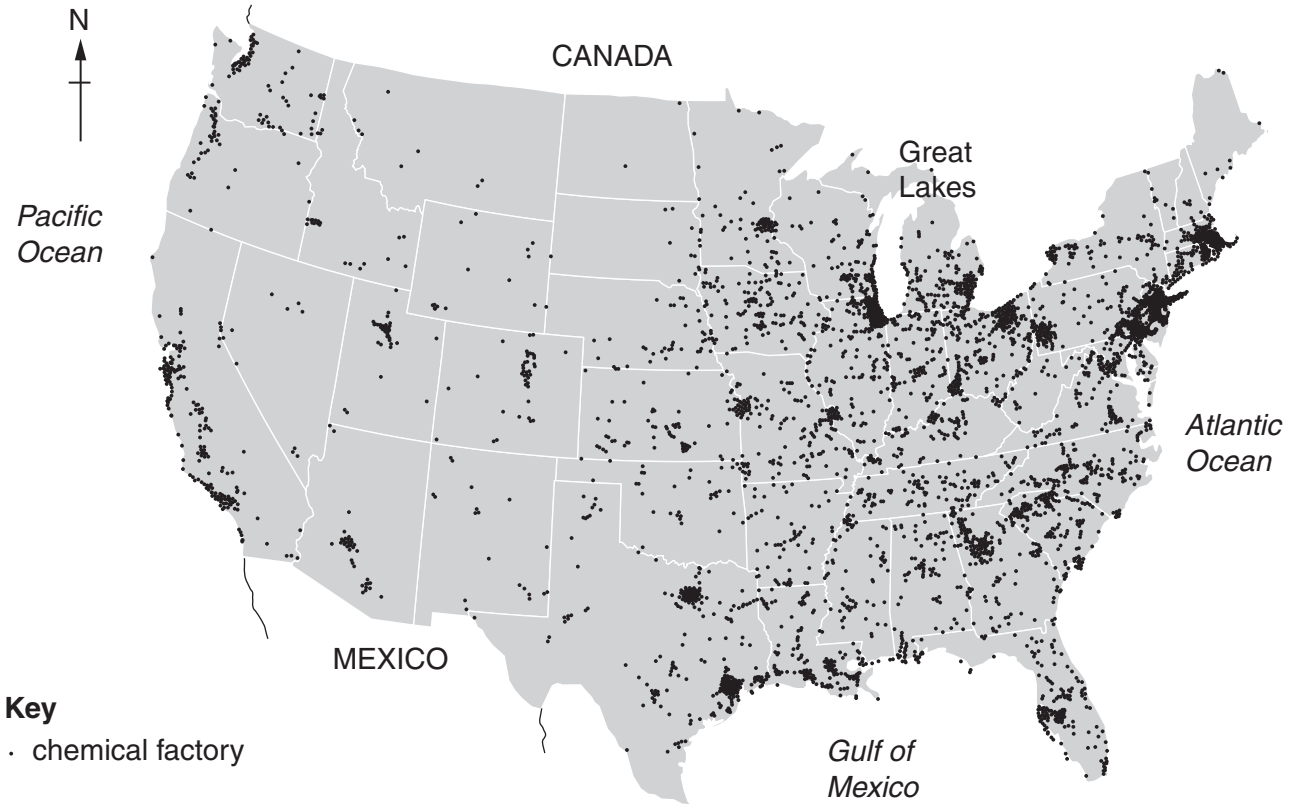

Fig. 6

(a) Describe the distribution of chemical manufacturing in the USA.

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.....[4]

(b) Suggest why manufacturing is found at these locations.

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.....[4]

[Total: 8 marks]

6 Study Fig. 7, which shows some indicators of development for selected countries in Africa.

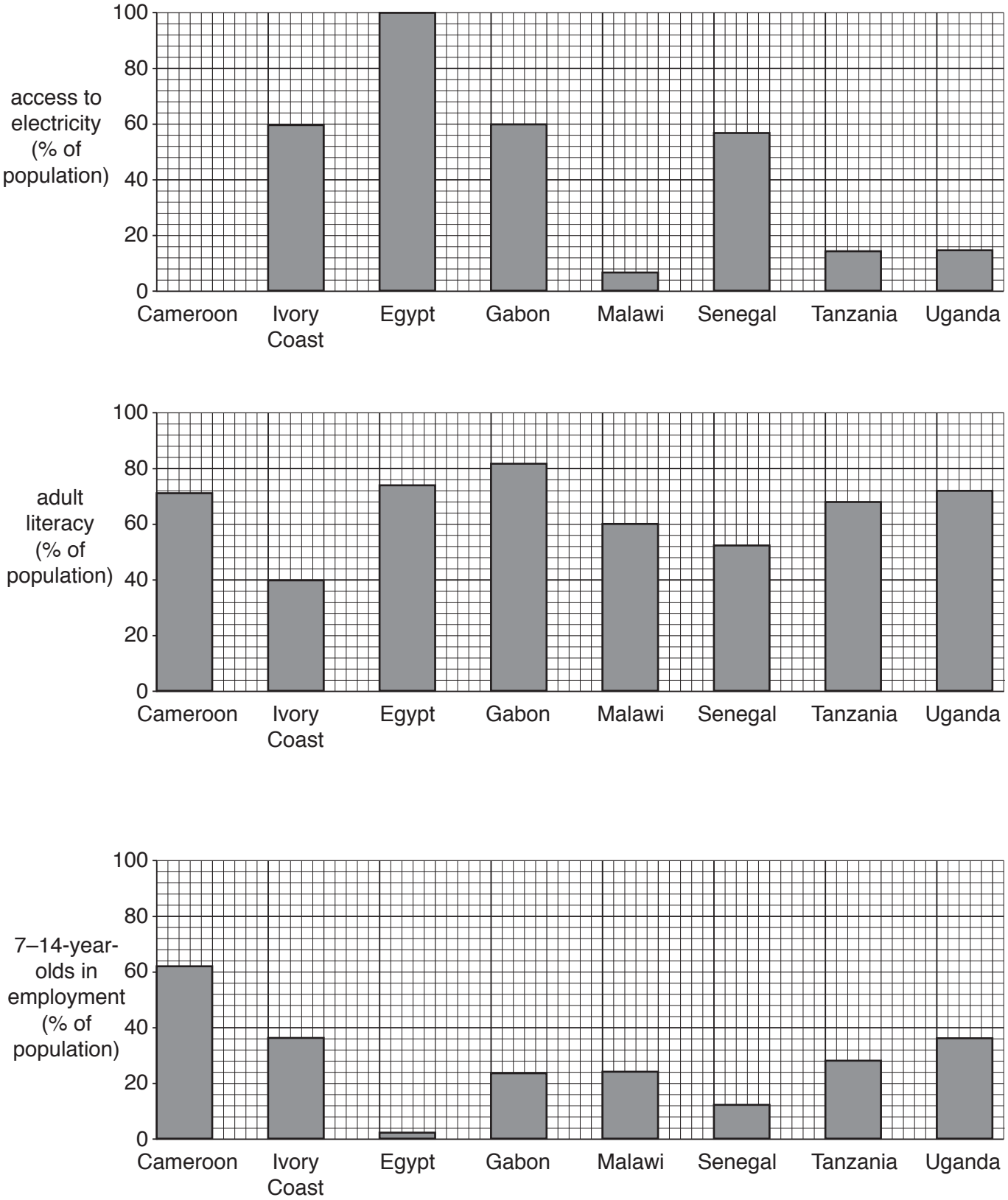

Fig. 7

(a) **(i)** Complete Fig. 7 to show 54% of the population with access to electricity in Cameroon. [1]

(ii) What is the adult literacy percentage in Gabon?

.....[1]

(iii) Which country has a lower percentage of 7–14-year-olds in employment than Senegal?

.....[1]

(b) From the evidence in Fig. 7 **only**, which country is the most developed? Give reasons for your answer.

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.....[4]

(c) Egypt's population is concentrated along the valley of the River Nile. Suggest how this makes it easy to make electricity available to most of the population.

.....

.....[1]

[Total: 8 marks]

Section B

Answer **one** question from this section.

7 Students at a school in Paris, France, used the school's weather station to measure atmospheric pressure, temperature and rainfall during 15 days in January. They tested the following hypotheses:

Hypothesis 1: *Temperature increases as atmospheric pressure increases.*

Hypothesis 2: *Rainfall decreases as atmospheric pressure increases.*

(a) (i) Complete the table below to show which measuring instruments are used in or outside a Stevenson screen. Put the following instruments under the correct heading:

wind vane — wet-and-dry bulb thermometer

minimum-maximum thermometer — rain gauge [2]

Used **in** a Stevenson screen	Used **outside** a Stevenson screen

(ii) Which **one** of the following instruments would the students use to measure atmospheric pressure? Circle your answer.

anemometer barometer hygrometer [1]

(b) (i) To measure atmospheric pressure the students took readings at the same time each day. Why was taking the readings at the same time each day important?

.....

.....[1]

(ii) The label 'mb' is usually given to the unit of atmospheric pressure. What does 'mb' stand for?

.....[1]

(iii) The students also measured the maximum temperature for each day using a thermometer like the one shown in Fig. 8 (Insert). What was the maximum temperature recorded by the thermometer in Fig. 8?

Circle your answer.

8 °C 20 °C 30 °C 35 °C 38 °C [1]

(c) **(i)** The results of the students' measurements are shown in Table 1 (Insert). Use these results to plot the atmospheric pressure and maximum temperature for 7 and 10 January on the scatter graph, Fig. 9 below. [2]

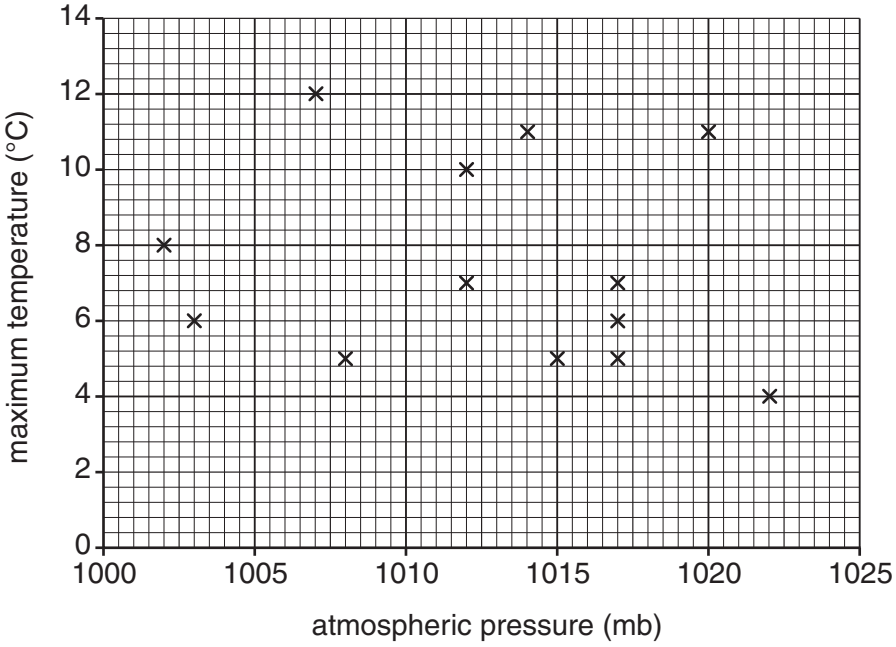

Fig. 9

(ii) What conclusion did the students make about **Hypothesis 1**: *Temperature increases as atmospheric pressure increases*?

Support your answer with evidence from Table 1 and Fig. 9.

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.....[4]

(d) **(i)** The students used a rain gauge to measure daily rainfall. In the box below draw and label a simple rain gauge. [3]

(ii) Why did their teacher recommend that the rain gauge should be located:

– away from the school playground;

.....

.....

– away from trees?

.....

.....[2]

(iii) Describe how the students would make their measurements using the rain gauge.

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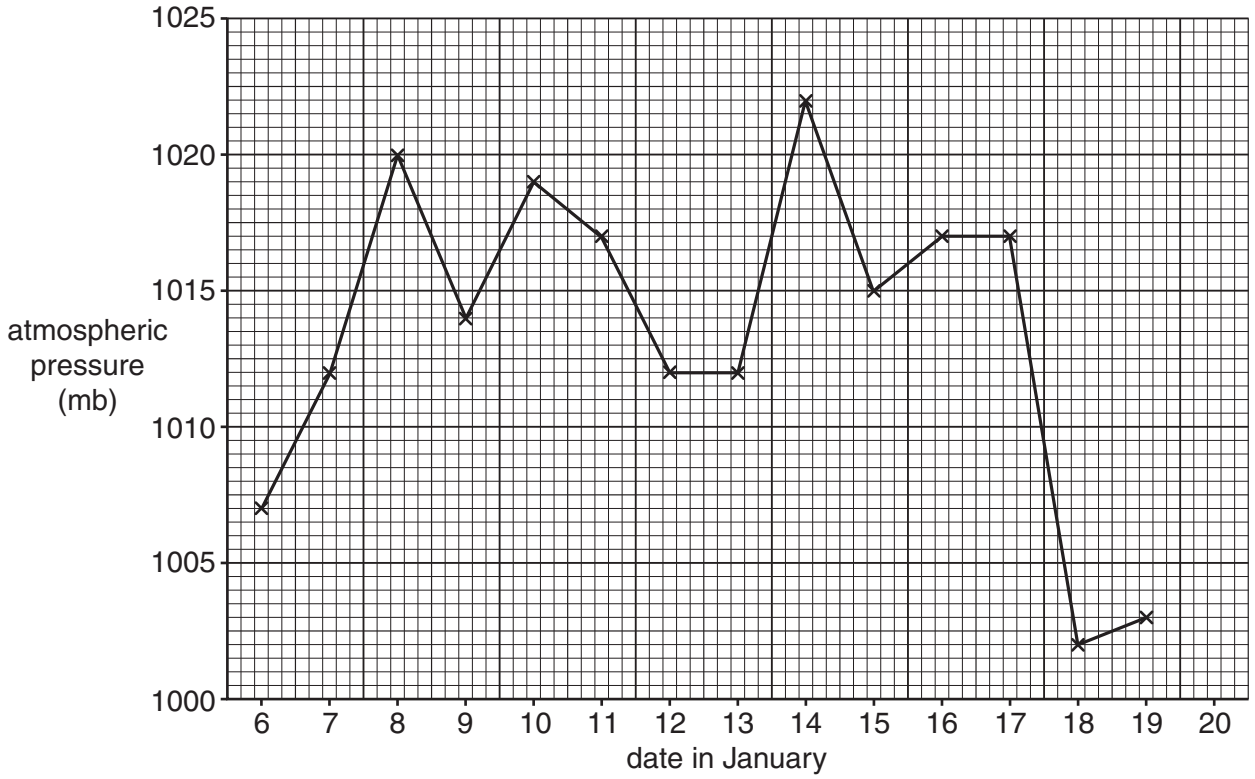
.....[4]

(iv) The students' measurements are shown in Table 1 (Insert). Use these results to plot the atmospheric pressure and rainfall for 20 January on Fig. 10 below. [2]

Results of students' measurements



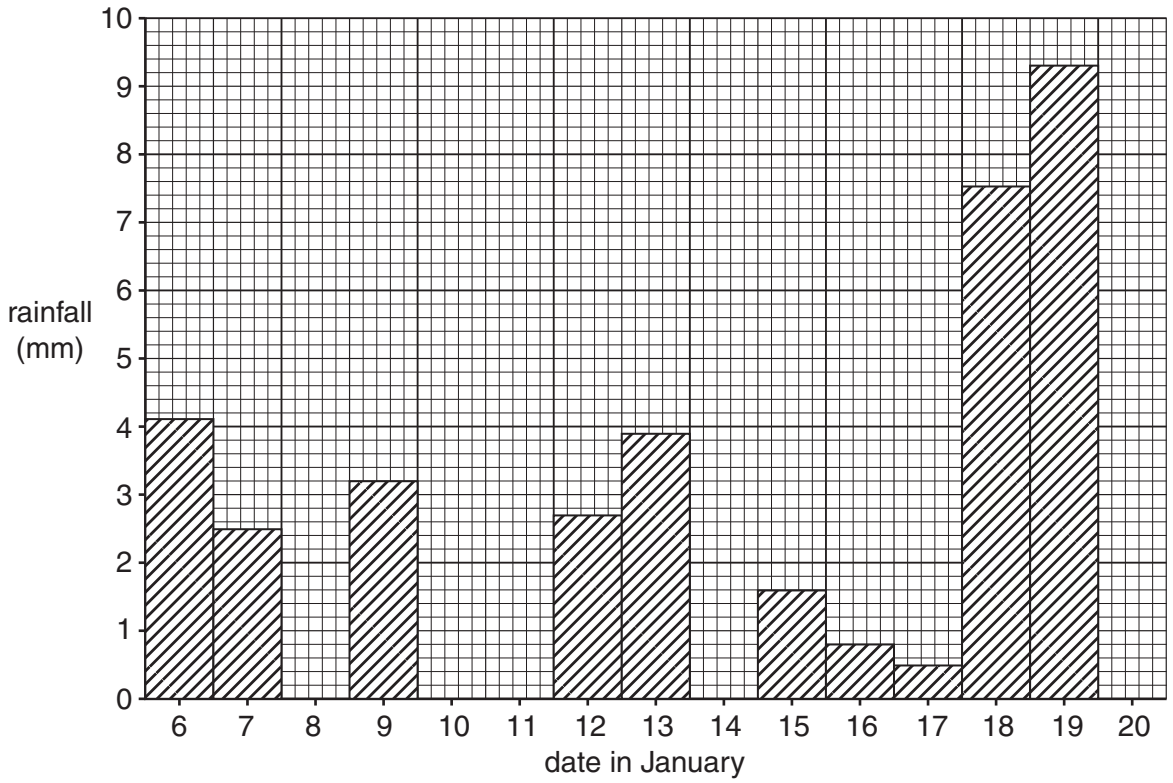


Fig. 10

(v) Do the results shown in Fig. 10 and Table 1 support **Hypothesis 2**: *Rainfall decreases as atmospheric pressure increases*? Use data to support your decision.

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.....[3]

(e) To extend their fieldwork the students decided to use a sunshine recorder to measure the amount of sunshine on each day. Photograph B (Insert) shows a sunshine recorder. Describe how a sunshine recorder is used.

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.....[4]

[Total: 30 marks]

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8 A student was studying how renewable energy sources are used to generate electricity in the UK.

(a) (i) Which **one** of the following is the correct definition of renewable energy?
Tick (✓) your choice.

	Tick (✓)
Energy which comes from rocks under the sea	
Energy which is produced from plants and animals	
Energy which comes from resources that will not run out	
Energy which is created in thermal power stations	
Energy which is stored in a nuclear power station	

[1]

(ii) Fig. 11 below shows the fuel sources used to generate electricity in the UK in 1990 and 2013. What percentage of electricity was generated by renewable sources in 1990?

..... % [1]

Fuel sources used to generate electricity in the UK

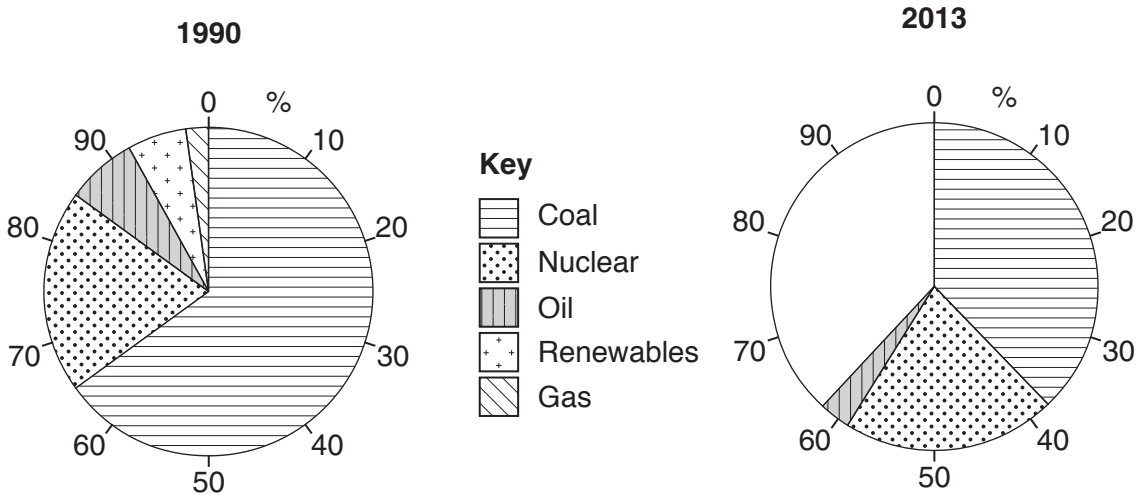

Fig. 11

(iii) Complete the pie chart for 2013 using the following information:

Energy source	%
Renewables	11
Gas	27

[2]

(iv) Identify **two** main changes in the production of electricity from fossil fuels in the UK between 1990 and 2013.

1 .....

.....

2 .....

.....[2]

(b) The students looked at plans to build a tidal barrage across the estuary of the River Severn. This area is shown in Fig. 12 (Insert). They decided to find out the opinions of local residents in Weston-super-Mare about the planned tidal barrage scheme.

The students investigated the following hypotheses:

Hypothesis 1: *Most local people think that tidal power is a good way to generate electricity.*

Hypothesis 2: *Local people think that the tidal barrage built across the estuary will benefit the area.*

(i) To begin their investigation the students produced a questionnaire which is shown in Fig. 13 (Insert).

Suggest **three** reasons why their teacher approved the questionnaire.

1 .....

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2 .....

.....

3 .....

.....[3]

(ii) The students decided to ask the opinions of 100 local people. Name a suitable sampling method to select the people.

..... [1]

(iii) Describe how the students would use your chosen sampling method.

.....

.....

.....

.....[2]

(c) The results of the question: *Do you think that generating electricity by tidal power is a good idea?* and reasons for the answer, are shown in Table 2 below.

Table 2

Answers to question: *Do you think that generating electricity by tidal power is a good idea?*

Answer	Number of people	Answer	Number of people
Yes	71	No	29
Tidal power does not pollute the atmosphere	45	Turbines only work when the tide is coming in or going out	**17**
Tidal power is renewable	18	A tidal barrage does not produce much power	7
Tidal power is free	**8**	A tidal barrage is expensive to build	5

(i) Which reason is given by most of the people questioned who were in favour of using tidal power to generate electricity?

.....

.....[1]

(ii) Use the results in Table 2 to complete Fig. 14 below by drawing in the **two** missing bars. [2]

Reasons given by local people

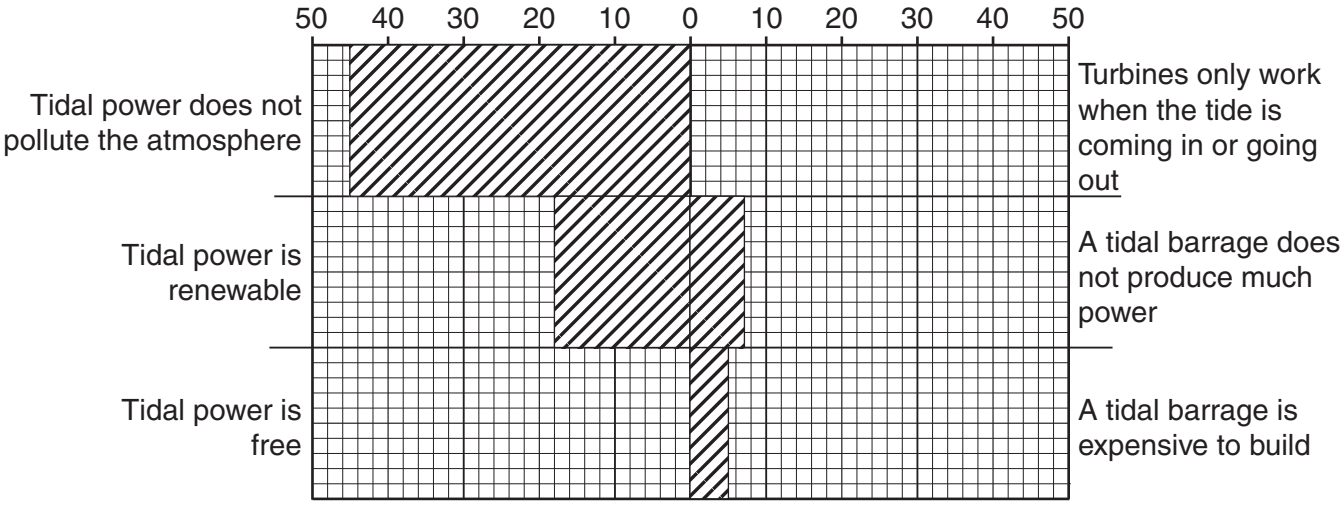

Fig. 14

(iii) Do the results shown in Table 2 and Fig. 14 support **Hypothesis 1**: *Most local people think that tidal power is a good way to generate electricity*?

Use data to support your conclusion.

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.....

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.....[2]

(d) The opinions of 100 local people about whether the local area is a good location in which to build a tidal barrage are shown in Table 3 below.

Table 3

The opinions of 100 local people

Opinion	Agree strongly	Agree	Disagree	Disagree strongly
The tidal barrage will threaten natural habitats of seabirds and fish	70	20	7	3
There will be a lot of disruption to the area whilst the barrage is being built	31	36	19	14
The tidal barrage will spoil the view of the estuary	20	40	28	12
Total number of responses	121	96	54	29
The tidal barrage will be a tourist attraction	70	23	5	2
The tidal barrage will help to stop flooding in the local area around the estuary	37	**37**	**20**	**6**
Construction of the barrage will create jobs in the area	21	31	26	22
Total number of responses	128	91	51	30

(i) Use the results in Table 3 to complete Fig. 15 below, which shows the results of the statement 'The tidal barrage will help to stop flooding in the local area around the estuary'. [3]

The opinions of 100 local people

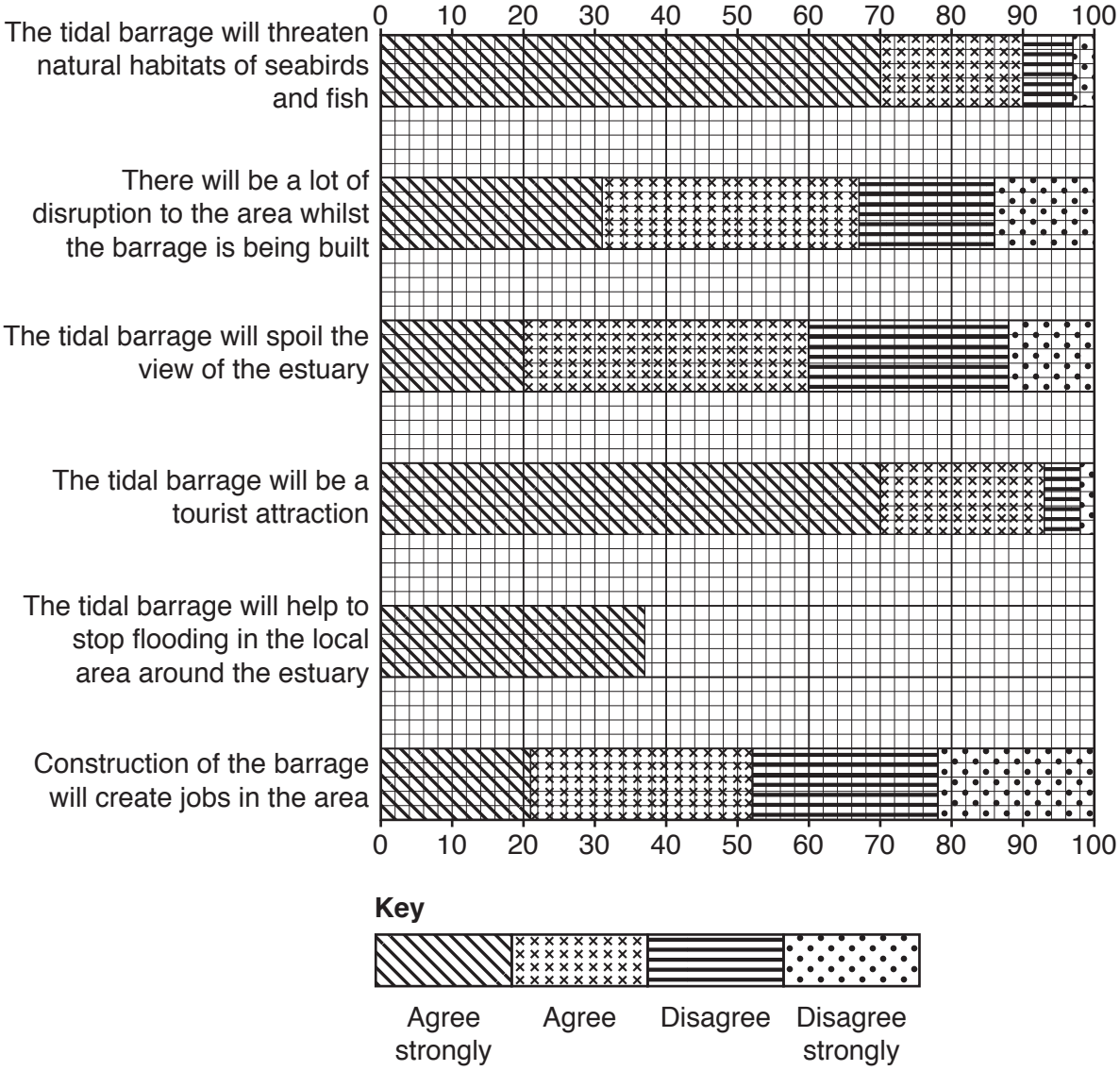

Fig. 15

(ii) Which **one** of the statements has the most even balance of opinions given by 100 local people?

.....

.....[1]

(iii) The students reached the conclusion that **Hypothesis 2**: *Local people think that the tidal barrage built across the estuary will benefit the area* was both true and false to a certain extent. What evidence in Table 3 and Fig. 15 supports this conclusion?

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.....[3]

(e) To extend their study the students asked some local people for their opinions on renewable energy and global warming. However, some of the people they spoke to did not know what these terms meant. So the students decided to produce an information sheet to give to people. The following answers will be part of this information.

(i) Tidal power is one type of renewable energy. Give **two** other examples of renewable energy.

1 .....

2 .....[2]

(ii) Explain how global warming occurs.

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.....[4]

[Total: 30 marks]

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Additional Pages

If you use the following lined pages to complete the answer(s) to any question(s), the question number(s) must be clearly shown.

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