Cambridge O Level

Cambridge International Examinations
Cambridge Ordinary Level

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER				

4890089326

GEOGRAPHY **2217/22**

Paper 2 **May/June 2017**

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 3, Photographs B and C and Table 4 for Question 7, and Figs. 15 and 17 and Tables 7 and 8 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 **34** printed pages, **2** blank pages and **1** Insert.

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Section A

Answer **all** questions in this section

1 Study the 1:50 000 map of Ramsey, Isle of Man.

(a) What was the date of the battle in grid square 4394?

.....[1]

(b) **(i)** Give **two** uses for the land at the disused airfield in 3598 and 3698.

.....

.....[2]

(ii) Describe **three** land uses found at the Wildlife Park, north of the road, in grid square 3694.

1 .....

2 .....

3 .....[3]

(c) Use Fig. 1 to locate the Jurby South Road Circuit.

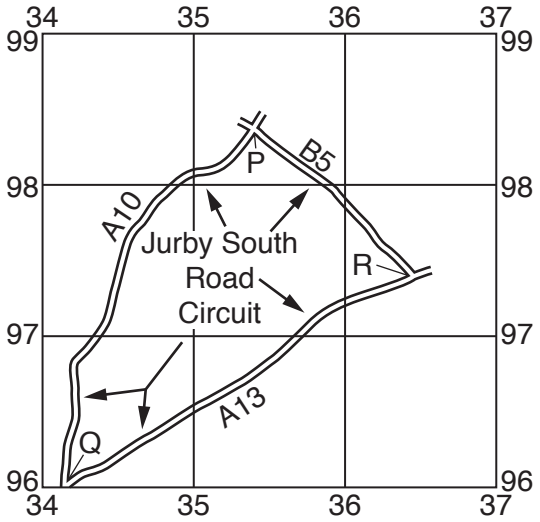

Fig. 1

(i) On the map, measure the length of the Jurby South Road Circuit, giving your answer to the nearest kilometre.

.....[1]

(ii) Along which section of the road would drivers be following a bearing of 060°?
Circle the correct answer.

- from P towards Q;
- from P towards R;
- from Q towards P;
- from Q towards R;
- from R towards Q. [1]

(d) **(i)** Give the six-figure grid reference of the 96-metre triangulation pillar, near Bride, at the north of the map.

.....[1]

(ii) Give the compass direction from the triangulation pillar

- to Bride;

.....

- to the closest mast.

.....
[2]

(e) Compare the relief of grid square A (3693) and grid square B (3795) shown on Fig. 2.

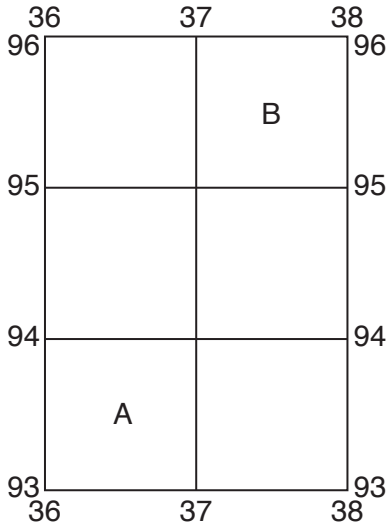

Fig. 2

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.....[3]

(f) Describe the features of the north west facing coast, within the area shown on Fig. 3.

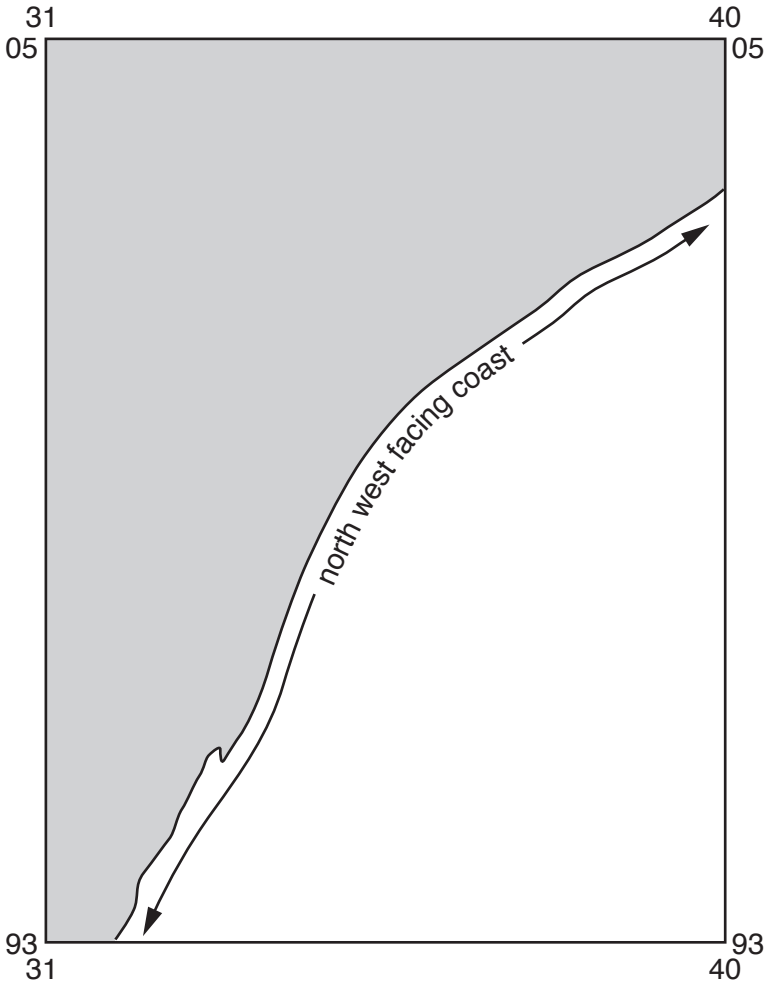

Fig. 3

Physical features

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Human features

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[6]

[Total: 20 marks]

2 Fig. 4 shows population growth per thousand for the countries of South America in 2014.

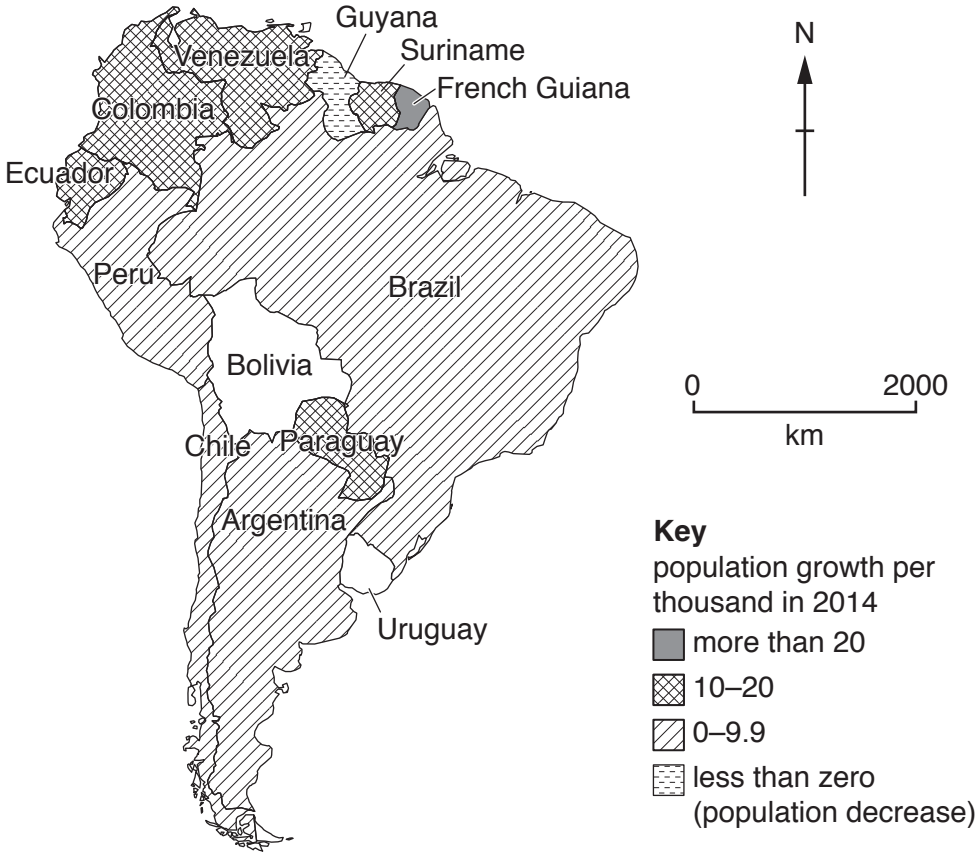

Fig. 4

(a) Use the information in Table 1 to **complete** Fig. 4.

Table 1

Country	Population Growth per thousand
Bolivia	16.0
Uruguay	2.6

[2]

(b) Which country has the highest population growth?

.....[1]

(c) Table 2 shows population data for three countries.

Table 2

Country	Birth Rate (per 1000)	Death Rate (per 1000)	Net Migration (per 1000)
Chile	14.0	6.0	0.4
Peru	18.6	6.0	–2.7
Venezuela	19.4	5.2	0

(i) Calculate the natural population increase (per 1000) in Chile. Show your calculation.

.....

.....[2]

(ii) Explain what is meant by a net migration of –2.7 for Peru.

.....

.....[2]

(iii) Venezuela has a net migration of 0. What does this mean?

.....

.....[1]

[Total: 8 marks]

3 Study Photograph A (Insert) and Fig. 5, a sketch of the same area.

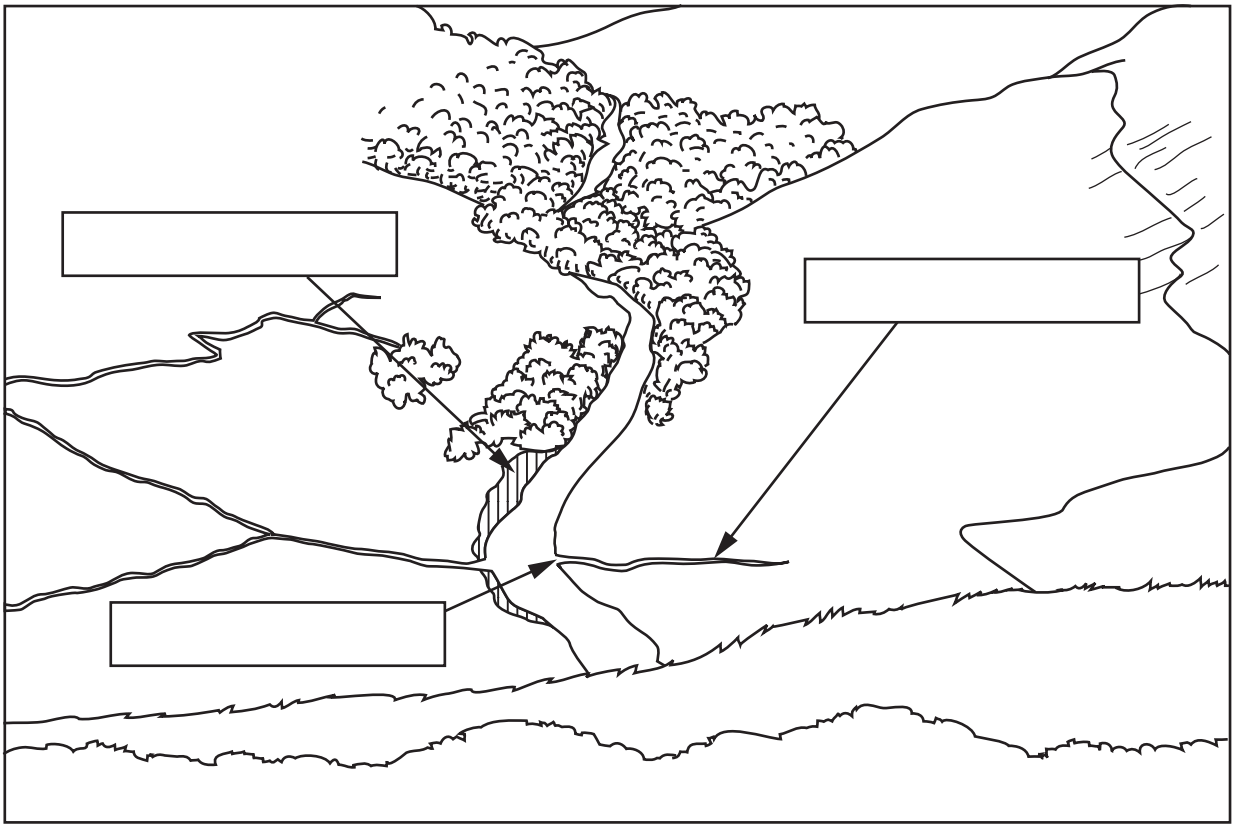

Fig. 5

(a) **Complete** Fig. 5 by adding labels in the boxes provided. Choose from:

- confluence;
- distributary;
- oxbow lake;
- plunge pool;
- pothole;
- river cliff;
- slip-off slope;
- tributary;
- waterfall;
- watershed.

[3]

(b) Photograph A was taken at midday, at a latitude of 54°N. Use the position of sunny and shaded slopes to determine the direction in which the camera was pointing. Circle the correct answer.

north east south west [1]

(c) Use evidence from Photograph A to suggest why the land is **not** used for arable farming.

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.....[4]

[Total: 8 marks]

4 Study Fig. 6, which shows the distribution of hot deserts.

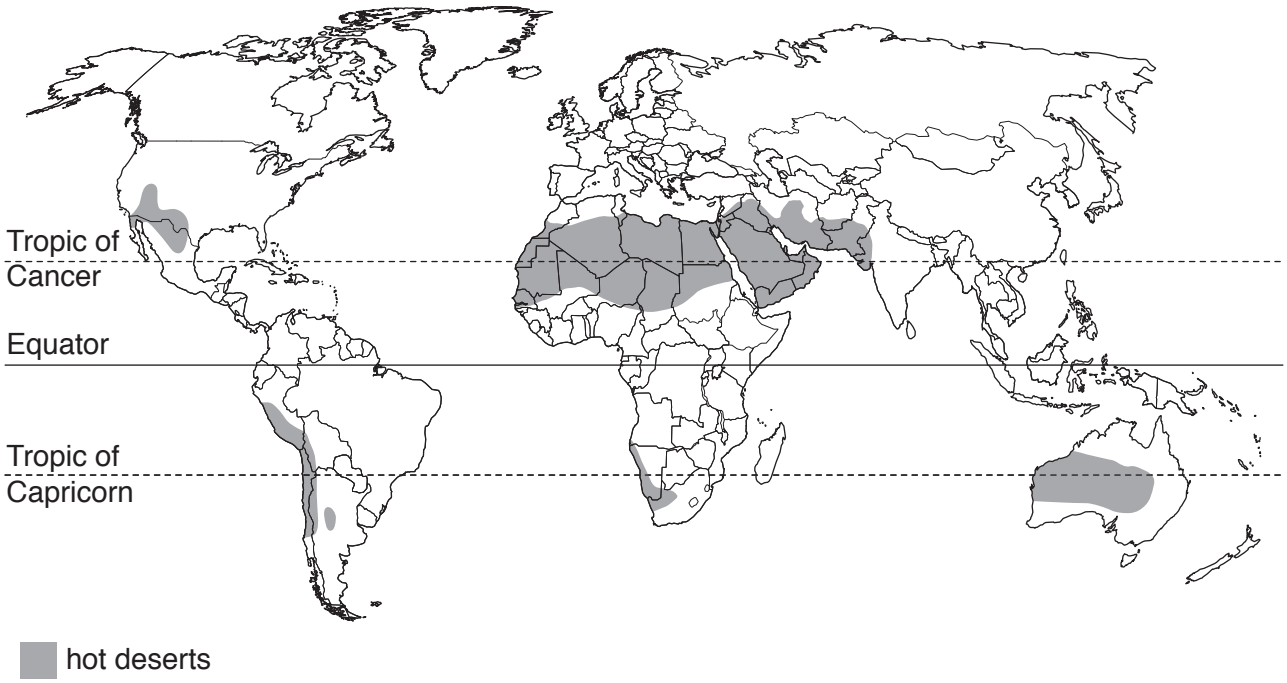

Fig. 6

(a) Describe the distribution of hot deserts.

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.....[3]

(b) Give **one** factor that causes low rainfall in these areas.

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.....[1]

(c) Study Fig. 7, which shows temperatures during one day in the Mojave Desert.

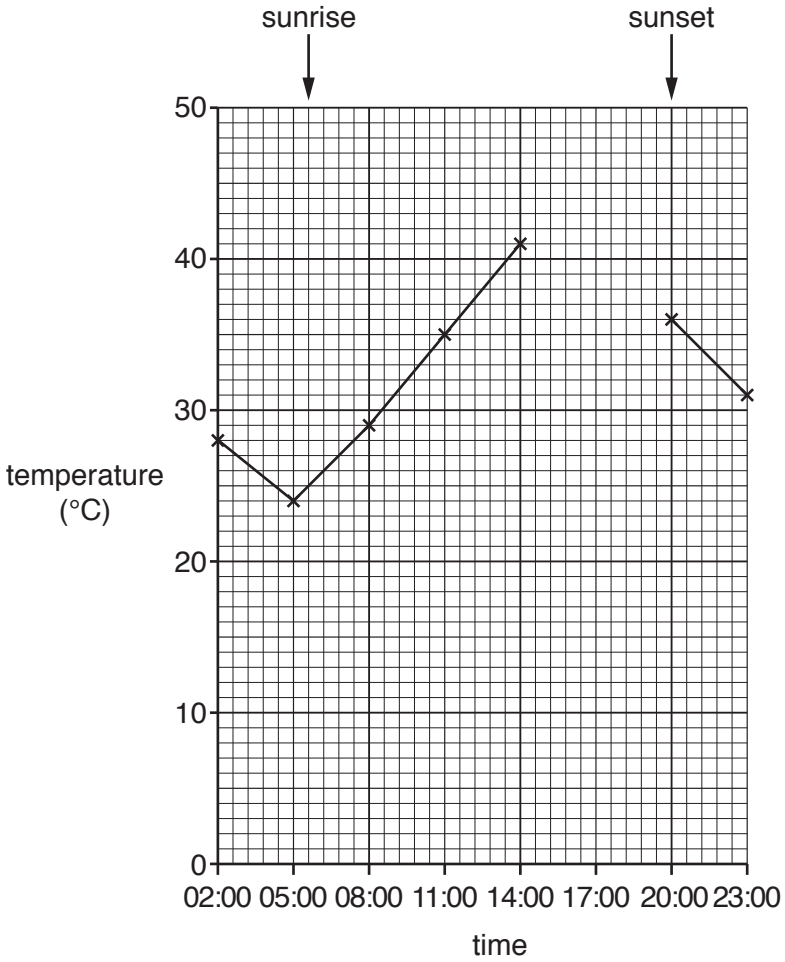

Fig. 7

(i) **Complete** Fig. 7 to show a temperature of 40 °C at 17:00. [1]

(ii) Calculate the range of temperature for the day shown on Fig. 7.

.....[1]

(iii) Describe and explain the temperature variations shown on Fig. 7.

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.....[2]

[Total: 8 marks]

5 Study Fig. 8; which shows data from a weather station in Queensland, Australia.

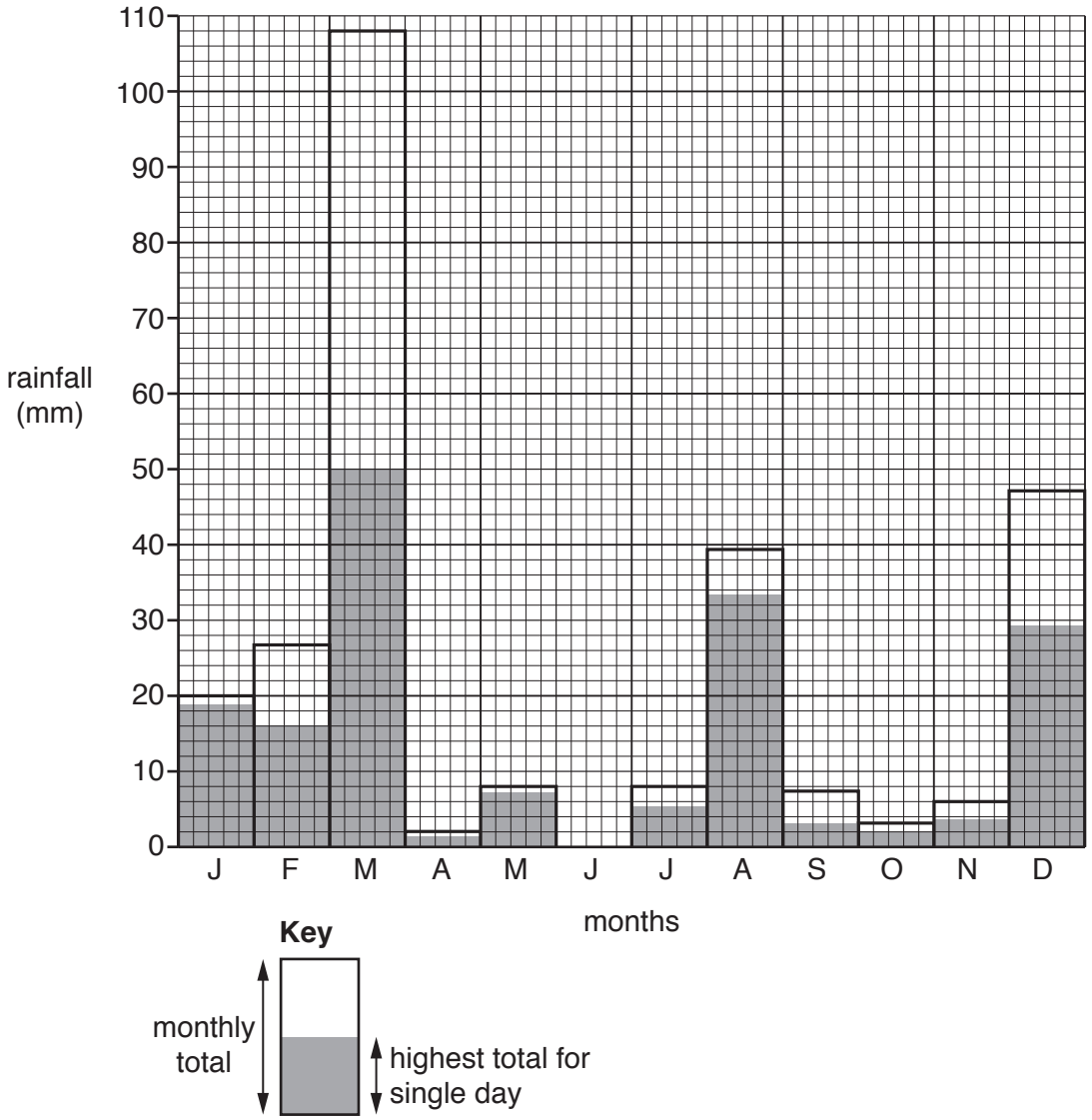

Fig. 8

(a) In June the monthly total was 13 mm and the highest total for a single day was 7 mm. Use this information to **complete** Fig. 8. [2]

(b) **(i)** Which month had the lowest total rainfall?

.....[1]

(ii) Name a month that received less than half its monthly rainfall total in a single day.

.....[1]

(iii) There was rain on only two days in January. How much rain fell on each of the two days?

.....[2]

(c) Fig. 9 shows three possible positions for a thermometer at a Stevenson screen.

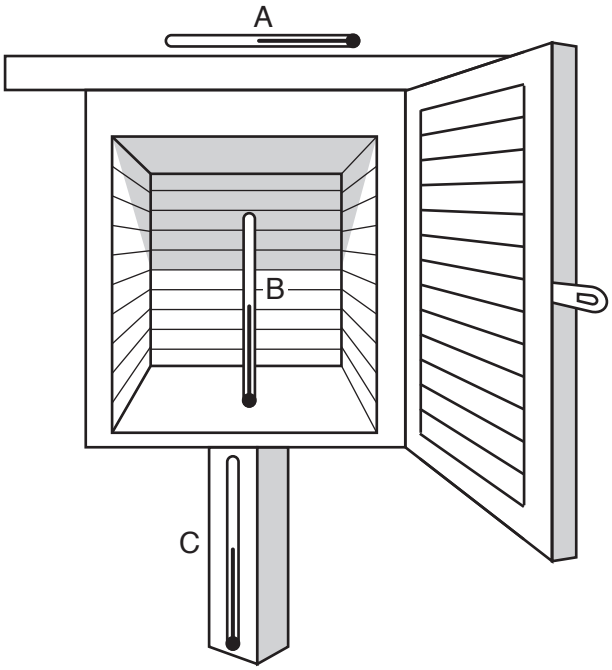

Fig. 9

(i) Which position would be the best location for the thermometer?

.....[1]

(ii) Which position would give the most inaccurate readings? Explain your answer.

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.....[1]

[Total: 8 marks]

6 Study Fig. 10; which shows changes in GDP per person. GDP is a measure of wealth.

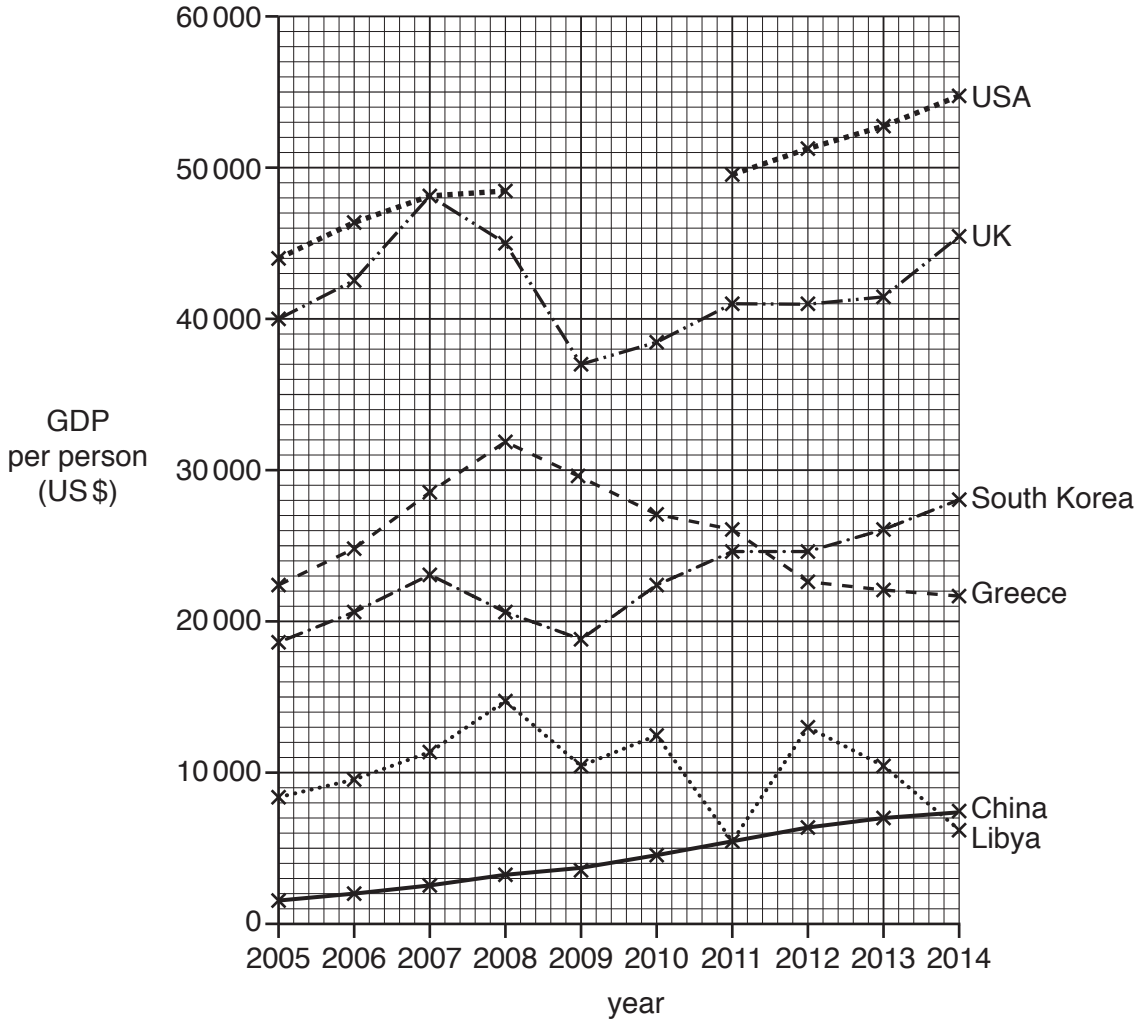

Fig. 10

(a) **(i)** Use the data for the USA, from Table 3, to **complete** Fig. 10.

Table 3

Year	GDP per person (US$)
2009	47 000
2010	48 500

[2]

(ii) What was the GDP per person in South Korea in 2005?

.....[1]

(b) **(i)** Which country matches the following description?
The GDP per person increases to 2008, then fluctuates from 2008 to 2012 and steadily decreases after 2012.

.....[1]

(ii) Describe the changes in GDP per person in Greece.

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.....[2]

(c) Compare the changes in GDP for South Korea and the UK.

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.....[2]

[Total: 8 marks]

Section B

Answer **one** question from this section.

7 Students in Wales went on a field visit to an area of coastal sand dunes near to their school. They had studied the formation of sand dunes and wanted to find out about the amount of marram grass and other vegetation growing on them. Photograph B (Insert) shows the coastal sand dunes they visited. Coastal sand dunes are popular places for people to visit and this may affect the growth of vegetation.

(a) **(i)** Explain how sand dunes like those shown in Photograph B are formed.

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.....[4]

(ii) The students used the fieldwork equipment shown in Fig. 11 (below) to measure the changing angle of slope across the sand dunes.

Measuring the changing angle of slope

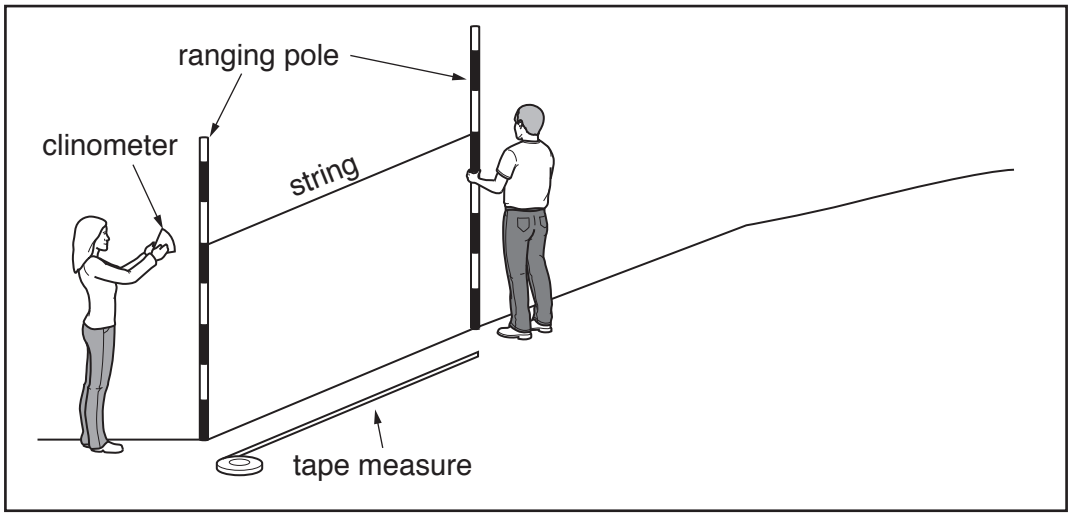

Fig. 11

Explain how the following equipment was used:

Tape measure;

.....

.....

Ranging poles;

.....

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String;

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Clinometer.

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[4]

(b) The area the students visited was in a nature reserve where visitors had limited access to some areas. Use the data and the key below to **complete the pie graph**, Fig. 12, which shows visitor access. [2]

access only with permission	13%
no access for visitors	19%

Visitor access to the nature reserve (% of area)

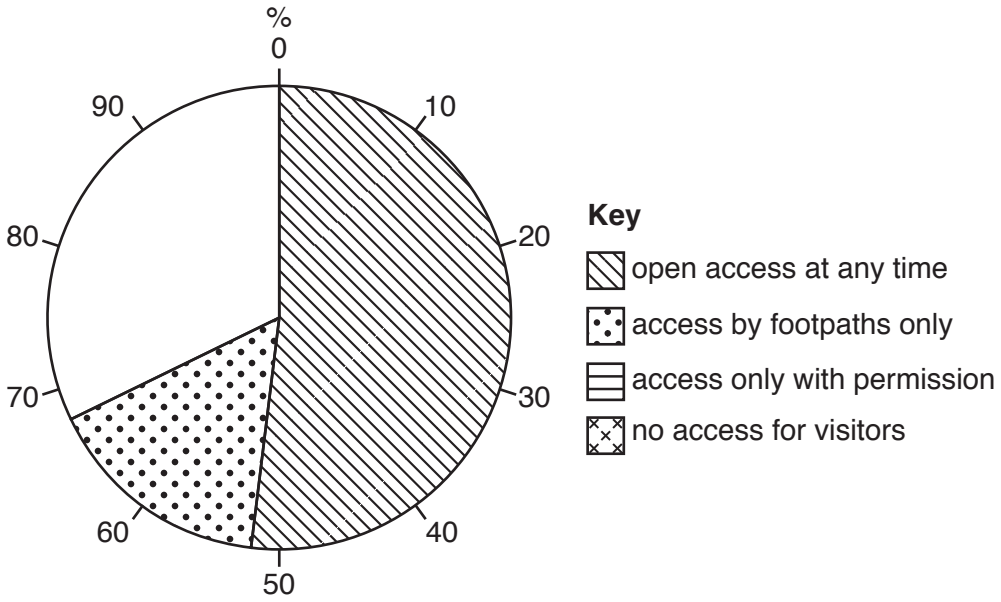

Fig. 12

The students agreed on the following two hypotheses:

Hypothesis 1: *Vegetation cover and the number of plant species are greater in areas with no visitor access.*

Hypothesis 2: *The impact of people on the sand dunes increases away from the beach.*

(c) Two students were allowed to work in an area where there was usually no visitor access. They used a quadrat to measure the vegetation cover every 10 metres along a transect through the sand dunes. Other students did the same task in an area open to visitors.

(i) Describe how the students would use a quadrat like the one shown in Photograph C (Insert) to do this fieldwork task.

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.....[3]

(ii) The results of this task are shown in Table 4 (Insert). Use these results to **plot in Fig. 13A** (below), the percentage of vegetation cover at 20 m along the transect. [1]

(iii) The students also counted the number of different plant species every 10 m along both transects. The results of this task are also shown in Table 4 (Insert).

Use these results to **plot in Fig. 13A** (below), the number of species at 20 m along the transect. [1]

Results of students' fieldwork

Area with no visitor access

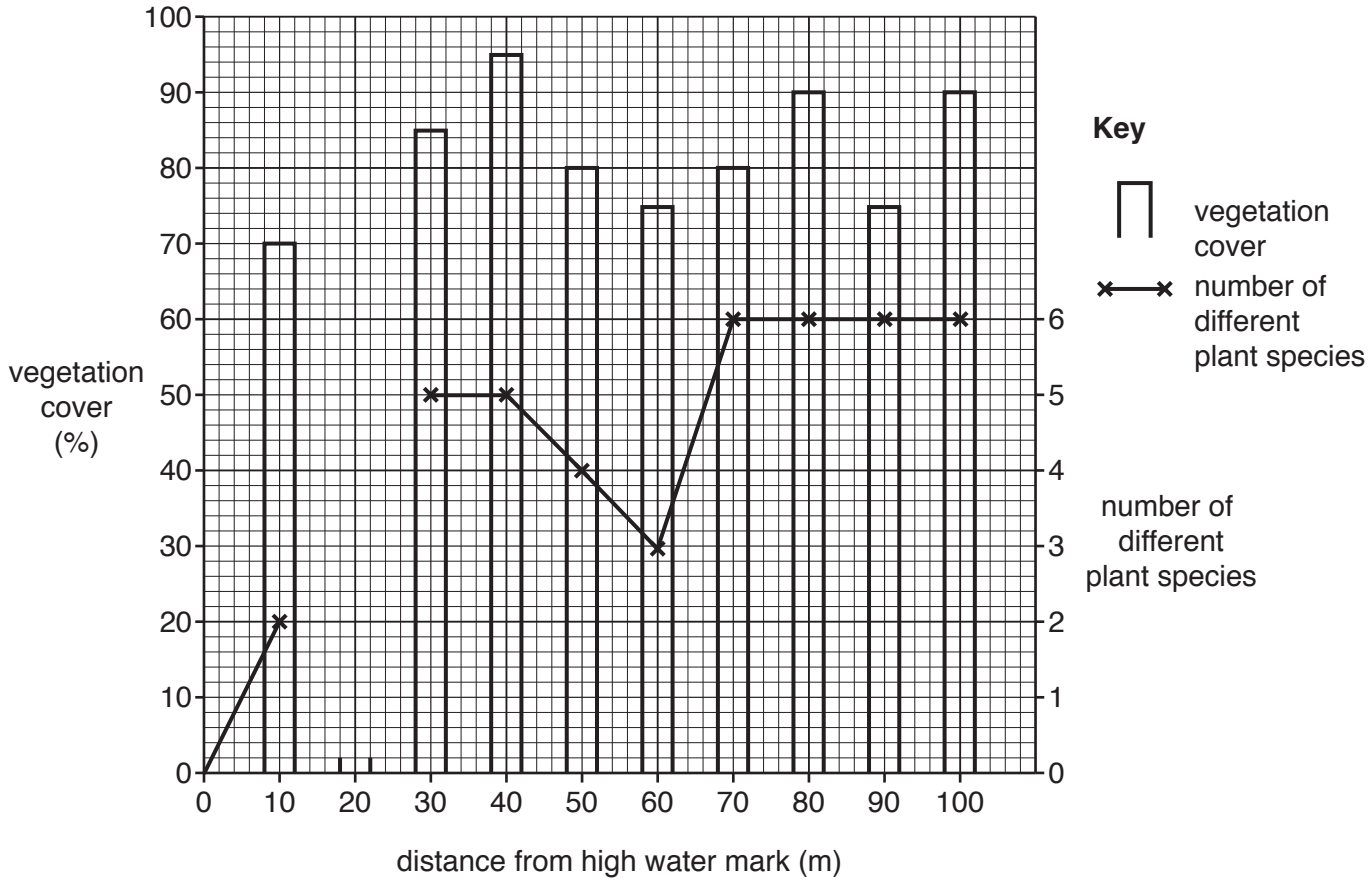

Fig. 13A

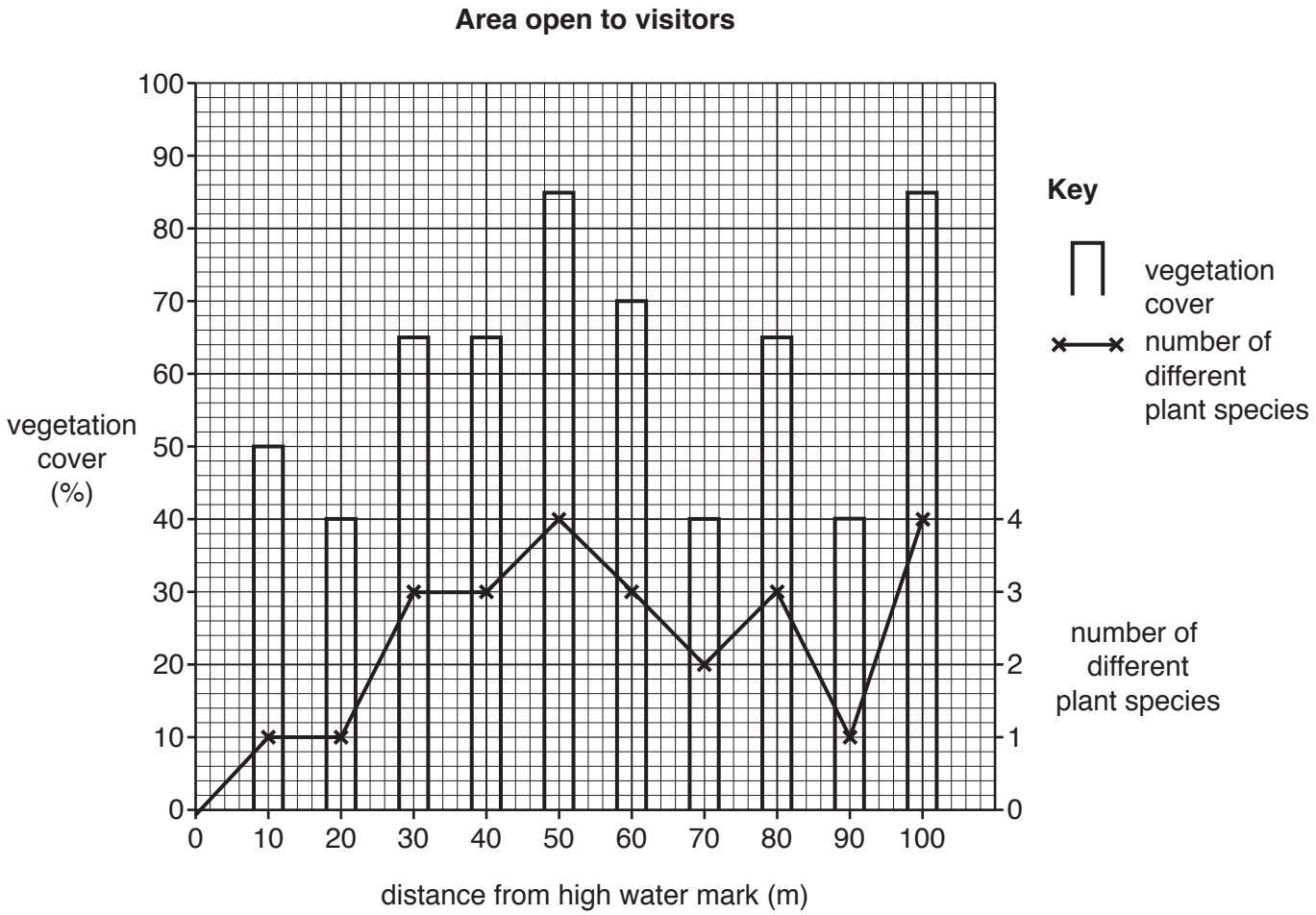

Fig. 13B

(iv) What conclusion would the students make about **Hypothesis 1:** *Vegetation cover and the number of plant species are greater in areas with no visitor access*? Support your answer with evidence from Table 4 and Figs. 13A and 13B.

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.....[4]

(d) To investigate **Hypothesis 2:** *The impact of people on the sand dunes increases away from the beach*, the students decided to do a bi-polar survey at three sites in the dunes where visitors were allowed access. A bi-polar survey is a rating system used to measure the impact of people on the sand dunes. They agreed the following plan for the surveys.

Location of survey	Time of survey
Group A at site A – 2 m inland from the beach	Monday morning 09:00
Group B at site B – 50 m inland from the beach	Friday evening at 17:00
Group C at site C – 100 m inland from the beach	Sunday afternoon at 14:00

(i) Give **two** reasons why their teacher suggested that this plan might produce unreliable results.

1 .....

.....

2 .....

.....
[2]

(ii) The results of the bi-polar survey for each group are shown in Table 5 (below). **Complete Table 5** by inserting the scores and calculating the total score at site B. [1]

Table 5

Results of the bi-polar survey

Site A (2 m inland from the beach)

Negative features	–2	–1	0	+1	+2	Positive features	Score
Lots of car tracks			✓			No car tracks	0
Noisy	✓					Quiet	–2
Lots of litter	✓					No litter	–2
Lots of footpath erosion	✓					No footpath erosion	–2
Burnt vegetation		✓				No burnt vegetation	–1
				Total environmental score			–7

Site B (50 m inland from the beach)

Negative features	–2	–1	0	+1	+2	Positive features	Score
Lots of car tracks				✓		No car tracks	
Noisy				✓		Quiet	
Lots of litter	✓					No litter	
Lots of footpath erosion		✓				No footpath erosion	
Burnt vegetation				✓		No burnt vegetation	
				Total environmental score			

Site C (100 m inland from the beach)

Negative features	–2	–1	0	+1	+2	Positive features	Score
Lots of car tracks					✓	No car tracks	+2
Noisy					✓	Quiet	+2
Lots of litter				✓		No litter	+1
Lots of footpath erosion				✓		No footpath erosion	+1
Burnt vegetation					✓	No burnt vegetation	+2
				Total environmental score			+8

(iii) Use the results in Table 5 **to complete the results** of the bi-polar survey at site B in Fig. 14 (below). [2]

Results of bi-polar survey

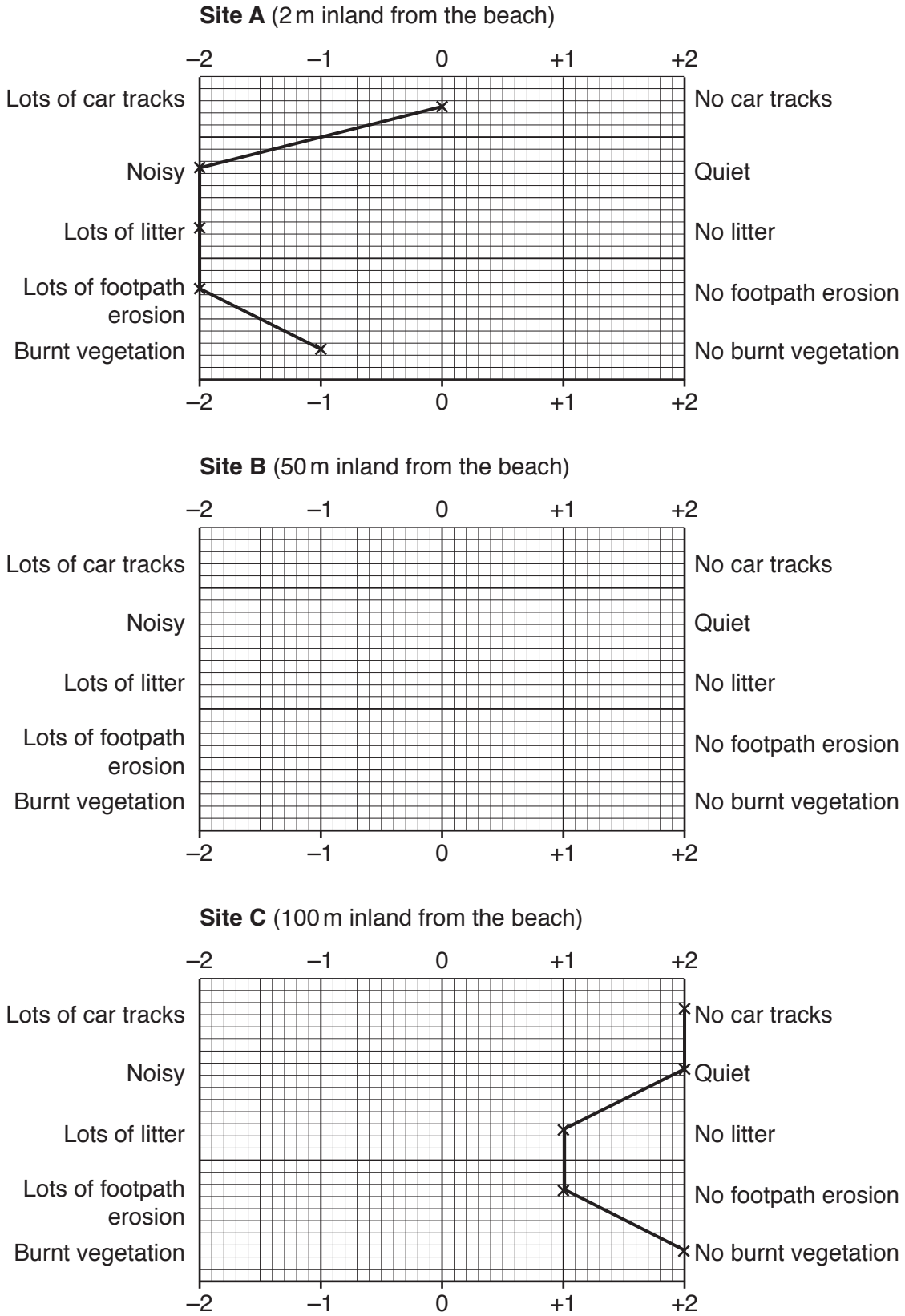

Fig. 14

(iv) Do the results of the bi-polar survey in Table 5 and Fig. 14 support **Hypothesis 2:** *The impact of people on the sand dunes increases away from the beach*? Support your conclusion with evidence.

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.....[3]

(e) Fig. 12 shows that visitors are allowed access at any time to more than half of the area of sand dunes.

Suggest how the sand dunes and vegetation in this area can be protected from visitors.

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.....[3]

[Total: 30 marks]

8 Members of a water charity were doing research into the water supply in six rural villages in India before beginning a water improvement scheme.

(a) The water charity published information about differences in water access and use in different parts of the world.

(i) Fig. 15 (Insert) shows the world distribution of people with no access to clean water. Use the data on Fig. 15 to **complete the table** below which ranks the different areas. [2]

Number of people with no access to clean water	Areas of the world
Most people ↕ Least people	
	More economically developed areas in North America, Europe, Asia and Australasia

(ii) Fig. 16 (opposite) compares one resident's daily use of water in Delhi, the capital city of India, and one resident's daily use in one of the rural villages where research was being done. Use the data in Table 6 (below) **to complete** the Delhi resident's use of water in Fig. 16 (opposite). [3]

Table 6

Delhi resident's use of water

Activity	Amount of water (litres) used in one day by resident of Delhi
Flushing the toilet	45
Having a shower	20
Preparing food and drinks	7
Using the dishwasher	**28**
Using the washing machine / washing clothes	**102**
Washing	**6**

Amount of water used in one day

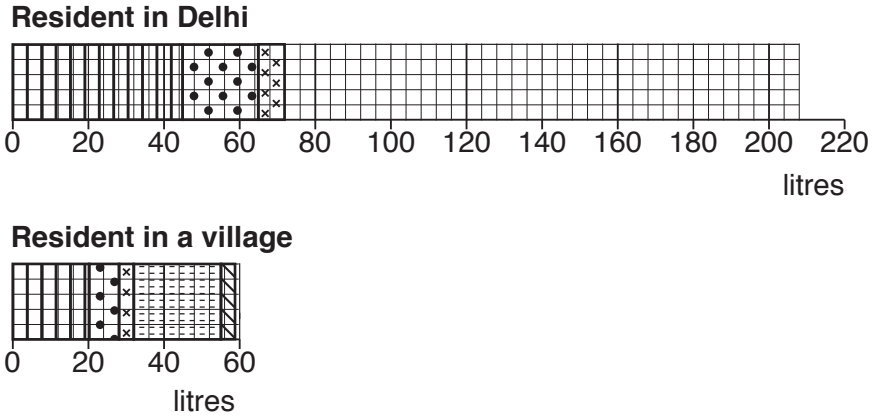

Fig. 16

(iii) Using Fig. 16 and Table 6, identify **two main** differences between the use of water by the residents in Delhi and in the village.

1 .....

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2 .....

.....

[2]

The researchers wanted to find out if the following hypotheses were correct:

Hypothesis 1: *There is a positive relationship between the average time spent by villagers collecting water and the average distance they travel to collect it.*

Hypothesis 2: *There is a positive relationship between the average time spent by villagers collecting water and the average amount of water used per family.*

(b) To investigate the two hypotheses the researchers used a questionnaire with residents of 20 houses in each village. The questionnaire is shown in Fig. 17 (Insert).

(i) Describe an appropriate method to choose a fair sample of 20 houses in each village.

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.....[3]

(ii) Suggest **two** practical difficulties for the researchers of collecting data using a questionnaire.

1 .....

.....

2 .....

.....
[2]

(c) The results of Questions 1, 2 and 3 in the questionnaire are shown in Table 7 (Insert).

(i) Fig. 18 (below) shows distance travelled and time spent collecting water. Use the results in Table 7 to **plot the data** for Bacharna in Fig. 18. [1]

Scatter graph of time spent collecting water and distance travelled

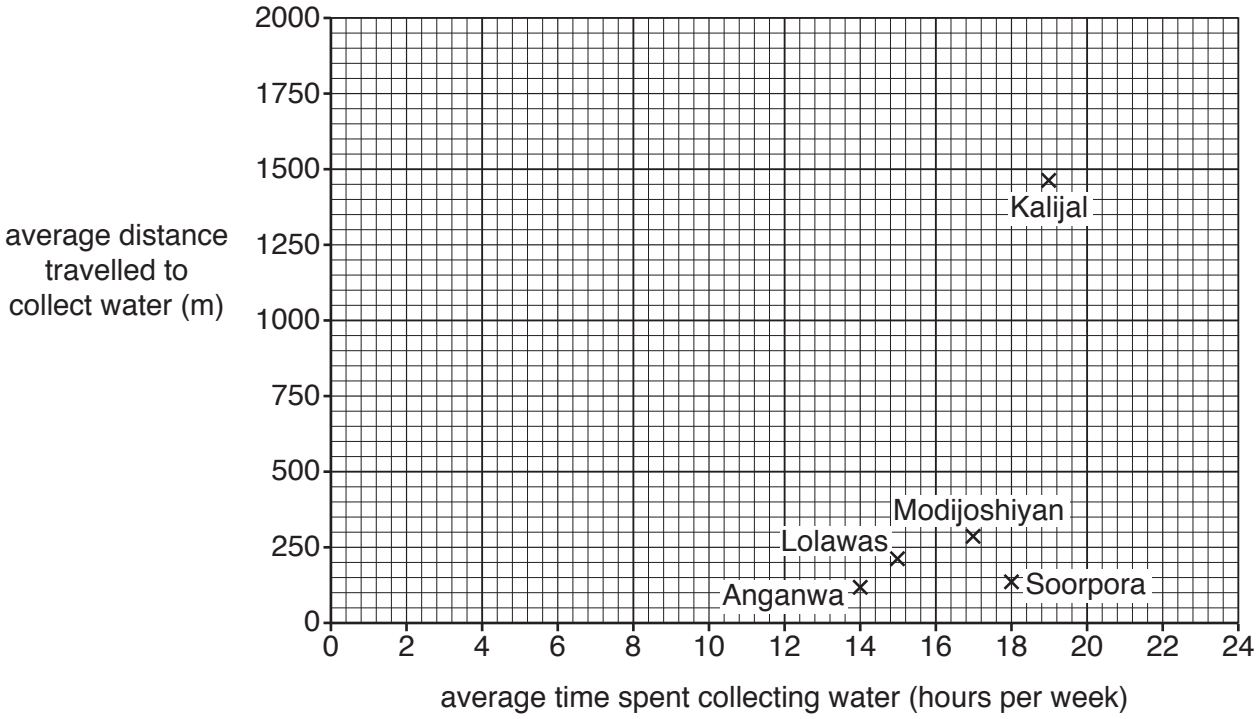

Fig. 18

(ii) The researchers made the conclusion that **Hypothesis 1:** *There is a positive relationship between the average time spent by villagers collecting water and the average distance they travel to collect it* was partly true. What evidence in Table 7 and Fig. 18 supports this conclusion?

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.....[4]

(iii) Fig. 19 (below) shows the average time spent collecting water and the amount of water used per family. Use the results in Table 7 **to plot the data** for Kalijal in Fig. 19. [1]

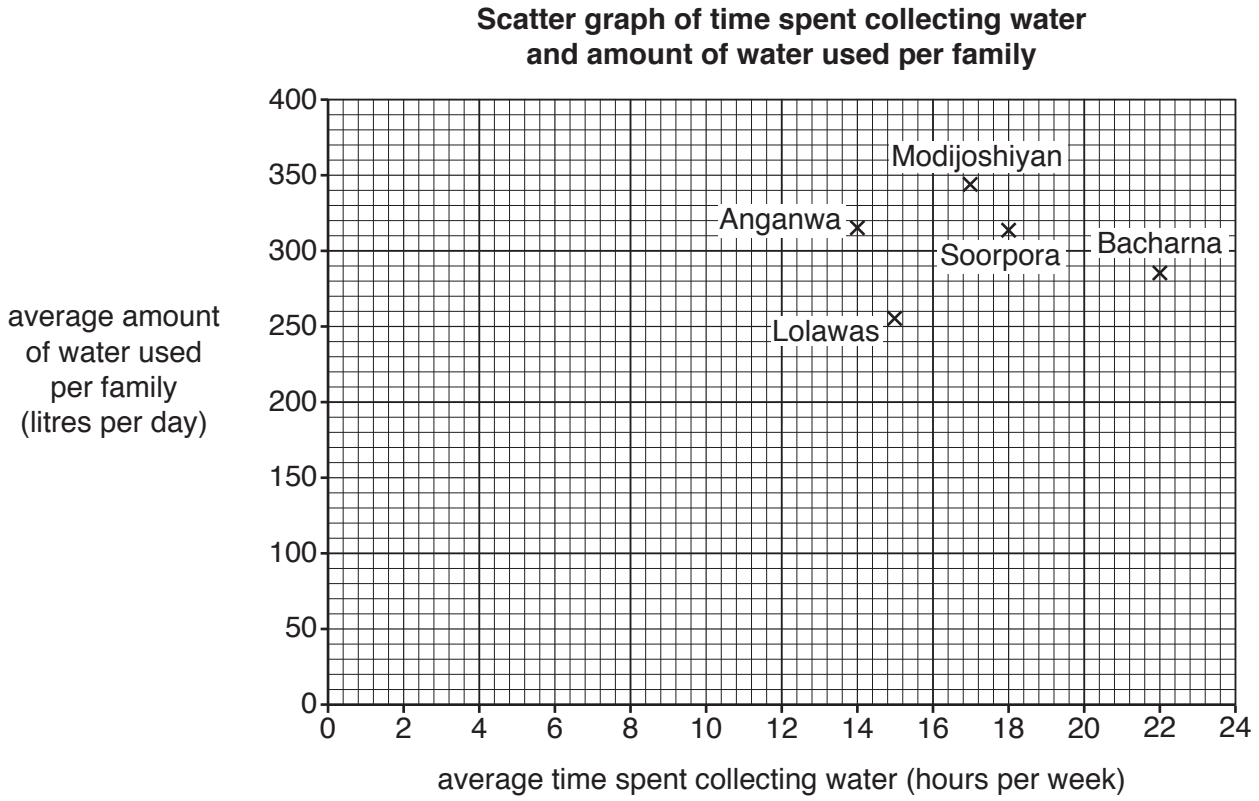

Fig. 19

(iv) What conclusion would the researchers make about **Hypothesis 2:** *There is a positive relationship between the average time spent by villagers collecting water and the average amount of water used per family*? Support your decision with evidence from Table 7 and Fig. 19.

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.....[4]

(d) The results of Question 4 in the questionnaire are shown in Table 8 (Insert).

(i) In which village did **all** families get some of their water from wells?

..... [1]

(ii) In which village did families get their water from the greatest variety of sources?

..... [1]

(iii) Suggest reasons why families in Soorpora obtained their water from different sources than families in Bacharna.

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.....[3]

(iv) As well as having to travel long distances or taking a long time to collect water, suggest other problems with the water supply in villages like Bacharna and Kalijal.

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[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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