UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

GEOGRAPHY **2217/22**

Paper 2 **October/November 2011**

2 hours 15 minutes

Candidates answer on the Question Paper.

Additional Materials: Calculator
Ruler
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 a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

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

Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.
The Insert contains Photograph A for Question 3, Figs 10, 12 and 13 for Question 7 and Table 5 for Question 8.
The Survey Map Extract and the Insert are **not** required by the Examiner.

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

Section A

Answer **all** questions in this section.

1 Study the 1:50 000 map of Buhwa, Zimbabwe.

(a) (i) In which grid square is the confluence of the Ngezi and Runde rivers?

..... [1]

(ii) Give the six-figure grid reference of **one** of the reservoirs in Ingezi Station.

..... [1]

(b) (i) What is the height of the trigonometrical station in grid square 3721?

..... [1]

(ii) Descending from this trigonometrical station, in which direction is the steepest slope?

..... [1]

(c) Study the section of the map shown on Fig. 1.

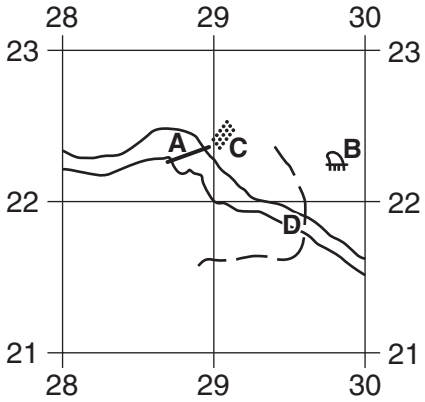

Fig. 1

(i) Name feature **A**.

..... [1]

(ii) Name feature **B**.

..... [1]

(iii) Name feature **C**.

..... [1]

(iv) What type of river crossing is used by the road at **D**?

..... [1]

(d) Study Fig. 2, which shows a cross-section from 300200 to 360200.

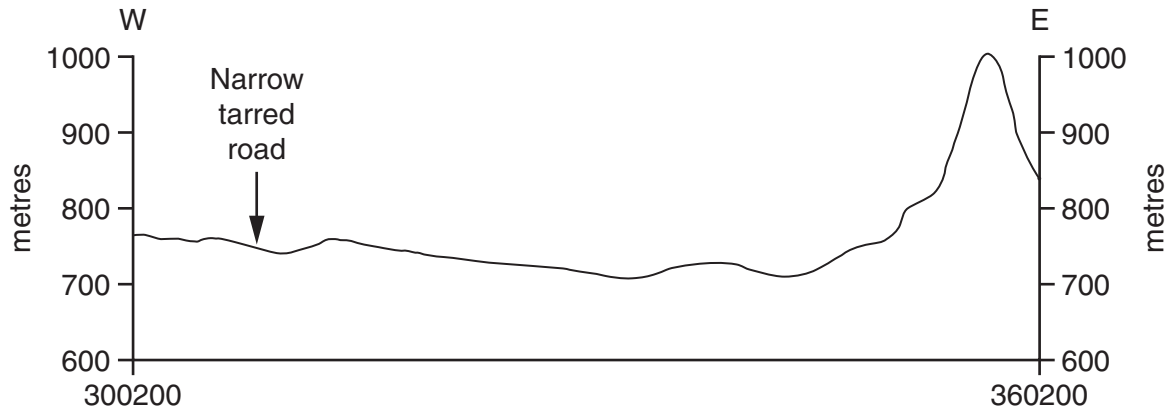

Fig. 2

Use labelled arrows on Fig. 2 to show the position of:

- the railway;
- Ngezi river;
- the west slope of Gwembudzi above 800 m. [3]

(e) Study the area of the map shown in Fig. 3.

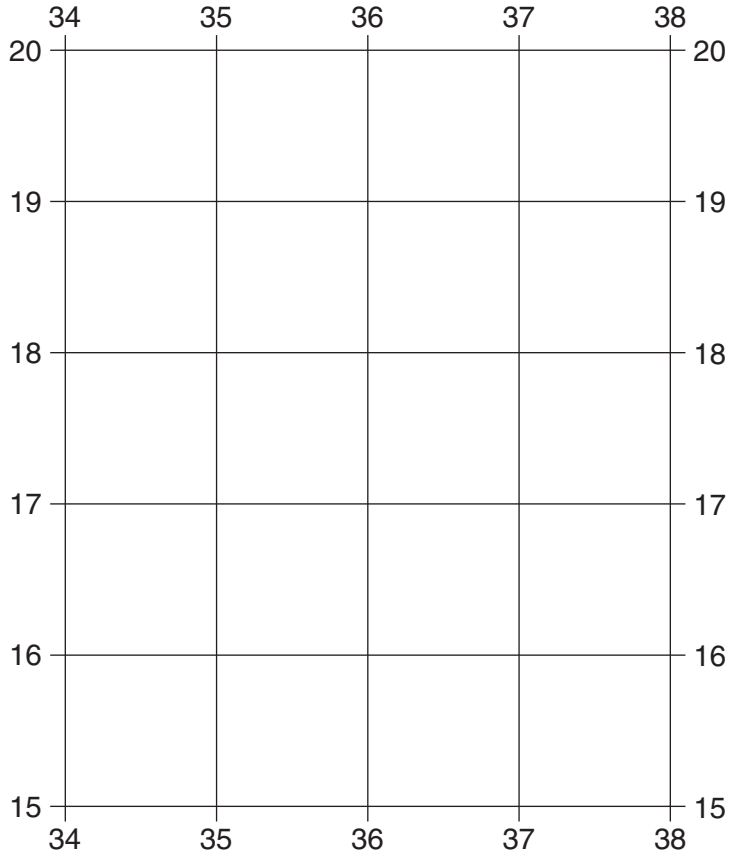

Fig. 3

(i) Which square contains a hut at an altitude of more than 800 m?

..... [1]

(ii) Describe the distribution of the huts in the area of Fig. 3.

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.....

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..... [3]

(iii) Describe the relief and drainage of the area in Fig. 3.

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.....[5]

[Total: 20 marks]

2 Study Fig. 4, which shows major urban areas in Australia.

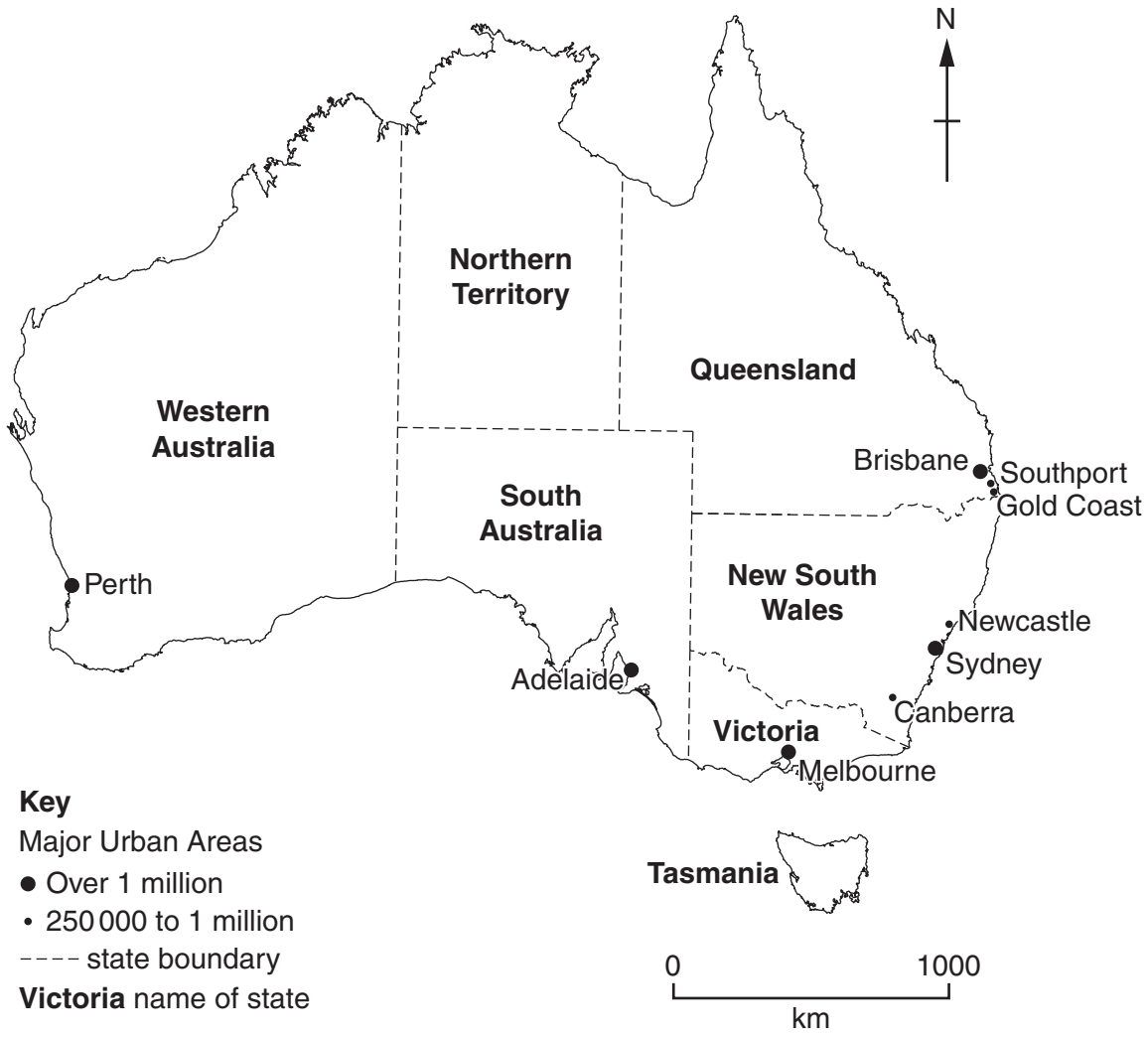

Fig. 4

(a) Describe the distribution of the major urban areas shown on Fig. 4.

.....

.....

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.....

.....

.....[3]

(b) In the area of Canberra, 340 000 people live in an area of 2000 square kilometres. Calculate the population density of this area.

.....people per square kilometre [1]

(c) Study Fig. 5, which shows population density of the states of Australia.

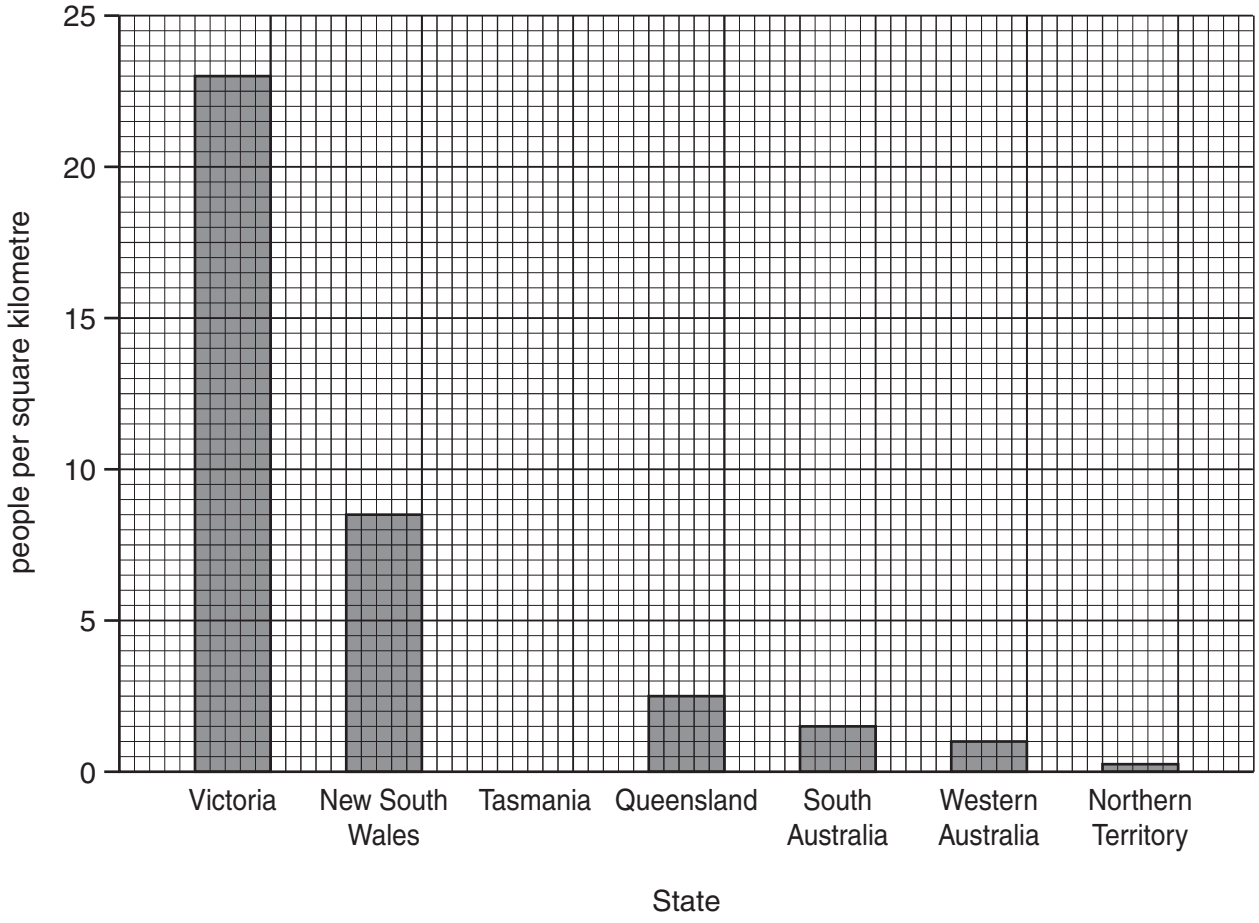

Fig. 5

(i) What is the population density of Queensland?

.....[1]

(ii) Complete Fig. 5 to show a population density of 7.5 people per square kilometre in Tasmania. [1]

(iii) The average population density for the whole of Australia is 2.8 people per square kilometre. How many states have a lower than average population density?

.....[1]

(d) On Fig. 4, shade the most densely populated state. [1]

[Total: 8 marks]

3 Study Photograph A (Insert) of a rural area in the United Kingdom.

(a) Describe the relief of the area shown on Photograph A.

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.....

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..... [3]

(b) Describe the vegetation in each of the three areas **X**, **Y** and **Z** shown on Photograph A.

X .....

.....

.....

Y .....

.....

.....

Z .....

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..... [5]

[Total: 8 marks]

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PLEASE TURN OVER FOR QUESTION 4.

4 Study Fig. 6, which shows the global distribution of fold mountains.

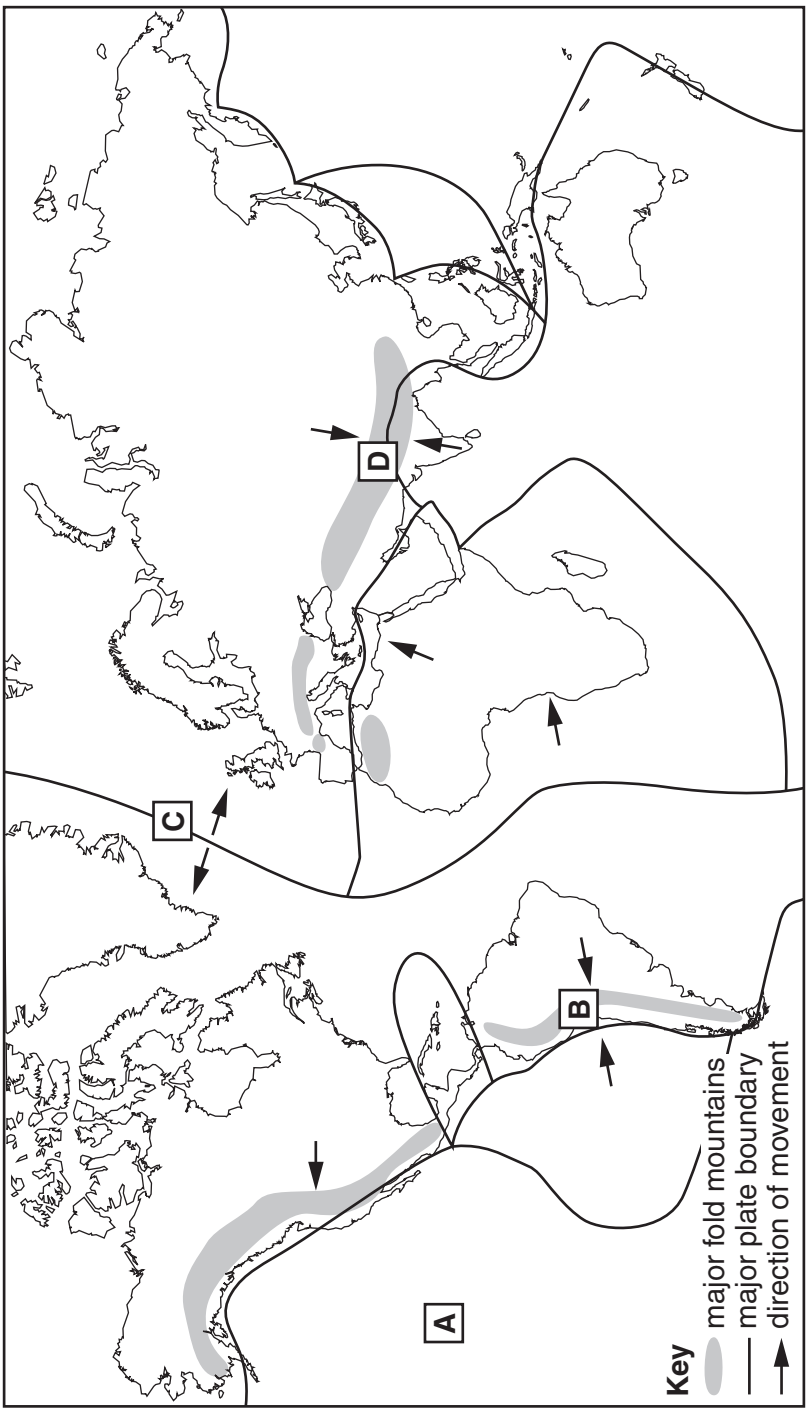

Fig. 6

(a) Describe the distribution of fold mountains shown on Fig. 6.

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..... [4]

(b) At which type of plate boundary do fold mountains form?

..... [1]

(c) **(i)** Areas **A**, **B**, **C** and **D** are shown on Fig. 6. Complete Table 1 using ticks and crosses (✓ or ✗) to show which of these areas has fold mountains.

Table 1

	fold mountains	earthquakes	volcanoes
A		✓	✓
B		✓	✓
C		✓	✓
D		✓	✗

[1]

(ii) Use Table 1 to identify the correct statements in Table 2 below. Tick **two** correct statements.

Table 2

All volcanoes are in earthquake zones.	
All earthquakes are in volcanic areas.	
All earthquakes are in areas of fold mountains.	
All fold mountains are in earthquake zones.	

[2]

[Total: 8 marks]

5 Fig. 7 shows a rain gauge.

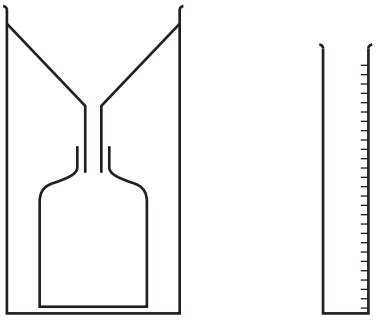

Fig. 7

(a) Use labelled arrows on Fig. 7 to locate the following:

- funnel,
- collecting cylinder,
- measuring cylinder,
- outer casing. [2]

(b) In the space below, sketch the type of graph that could be used to display data collected at different times using the rain gauge. Label the axes.

[3]

(c) Fig. 8 is a map showing the area where this type of rain gauge is to be located. **S1**, **S2** and **S3** have been identified as possible sites.

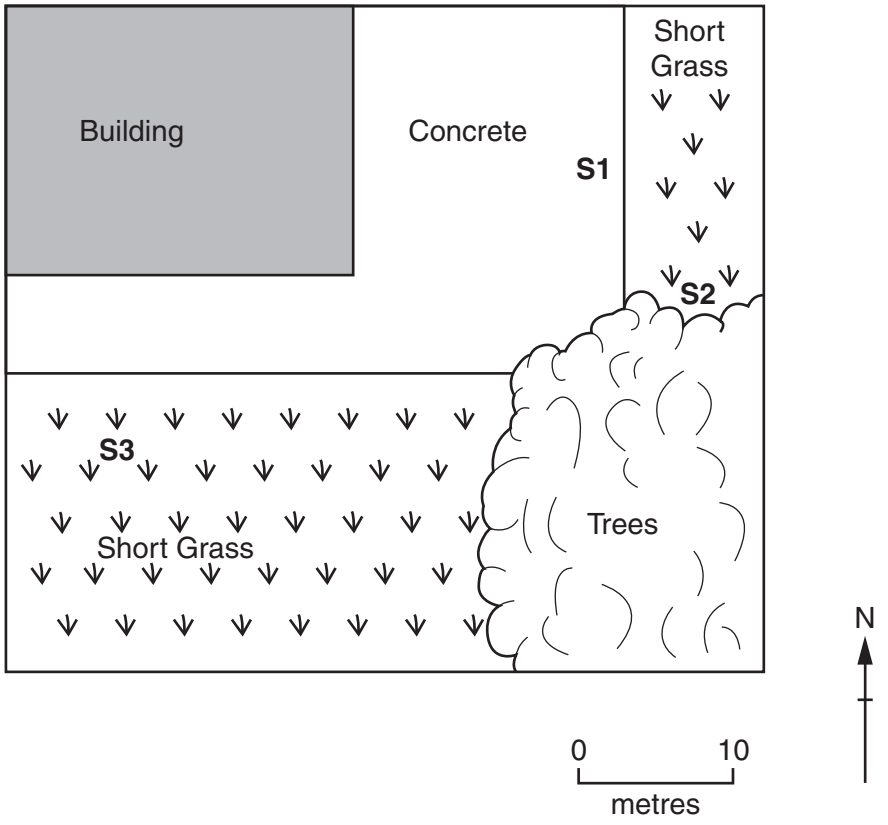

Fig. 8

(i) On Fig. 8, circle the best site for the rain gauge. [1]

(ii) Suggest why the rain gauge may record inaccurate measurements at each of the other two sites.

.....

.....

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..... [2]

[Total: 8 marks]

6 Study Fig. 9, which shows coal-fired power stations in Great Britain.

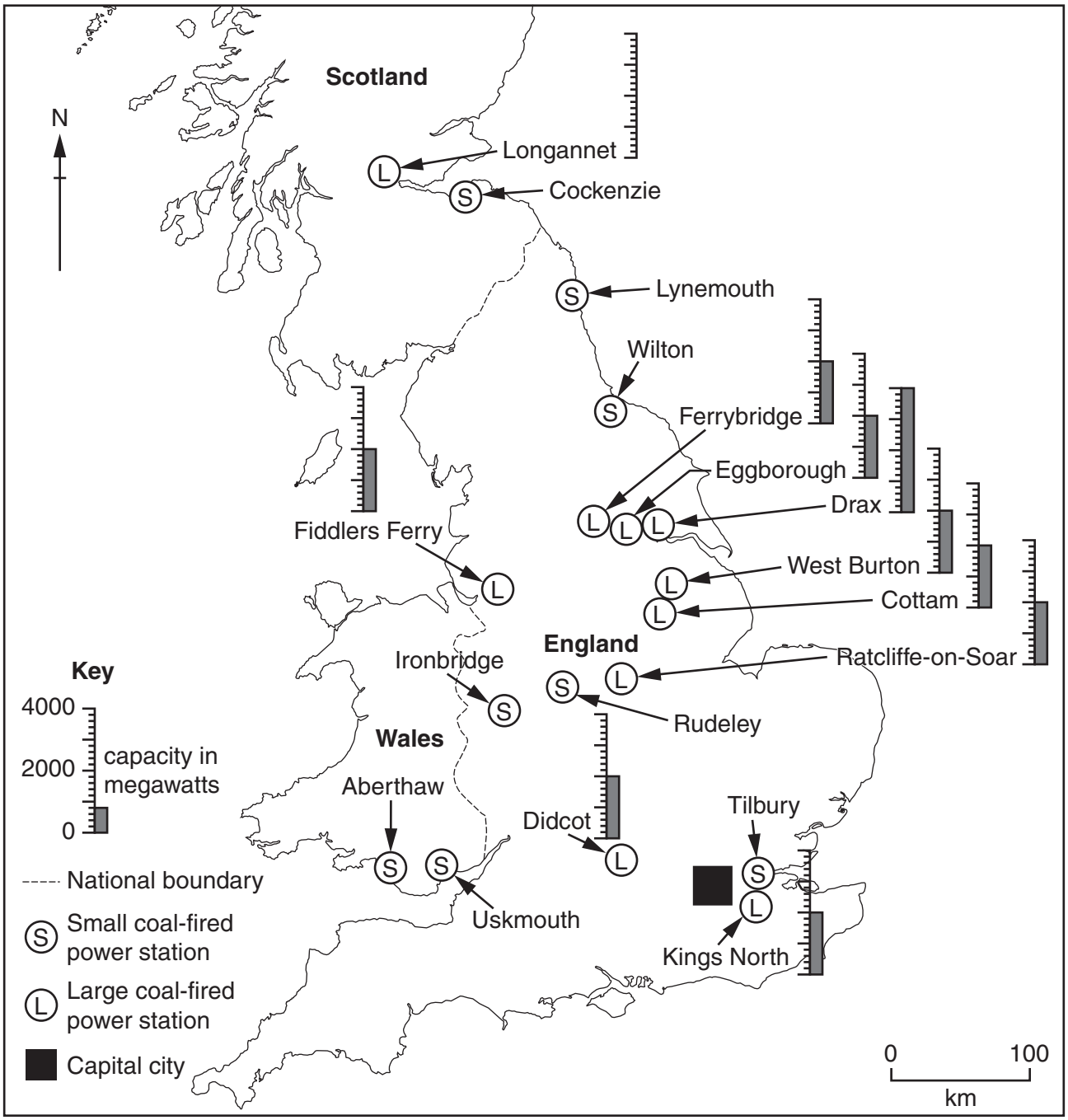

Fig. 9

(a) (i) How many coal-fired power stations are shown in Scotland?

.....[1]

(ii) Which coal-fired power station is furthest south?

.....[1]

(b) Describe the distribution of the small coal-fired power stations, indicated by Ⓢ on Fig. 9.

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.....

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.....[3]

(c) **(i)** What is the capacity of Ratcliffe-on-Soar power station?

.....[1]

(ii) Complete Fig. 9 to show that Longannet power station has a capacity of 2300 megawatts. [1]

(iii) Which power station has the largest capacity?

.....[1]

[Total: 8 marks]

Section B

Answer **one** question in this section.

7 Some students were investigating two local beaches made up of different materials. The beaches were about 5 km apart in a popular tourist area. The beaches are shown in Fig. 10 (Insert).

They decided to test the following hypotheses:

Hypothesis 1: *The size of beach material increases away from the low water mark.*

Hypothesis 2: *The environmental impact of tourism varies between the two beaches.*

(a) To investigate **Hypothesis 1** the students used a tape measure to plot a transect line from the edge of the sea at the low water mark to the top of each beach. They then used a quadrat to systematically sample the beach material at points along the transect line of each beach.

(i) What is systematic sampling?

.....

..... [1]

(ii) Give **two** advantages of using this method over random sampling.

1 .....

.....

2 .....

..... [2]

(b) The results of the investigation at selected sites are shown in Table 3, below.

Table 3

Results of beach material investigation at selected sites

	Beach material (%)		
	Sand	Shingle	Pebbles
Site 1 – Beach X	90	10	0
Site 2 – Beach X	95	5	0
Site 3 – Beach Y	75	20	5
Site 4 – Beach Y	0	50	50

(i) Suggest **one** problem of using a classification of beach material as sand, shingle or pebbles.

.....

..... [1]

(ii) Complete the pie graph for site 3 at beach Y in Fig. 11 below. [2]

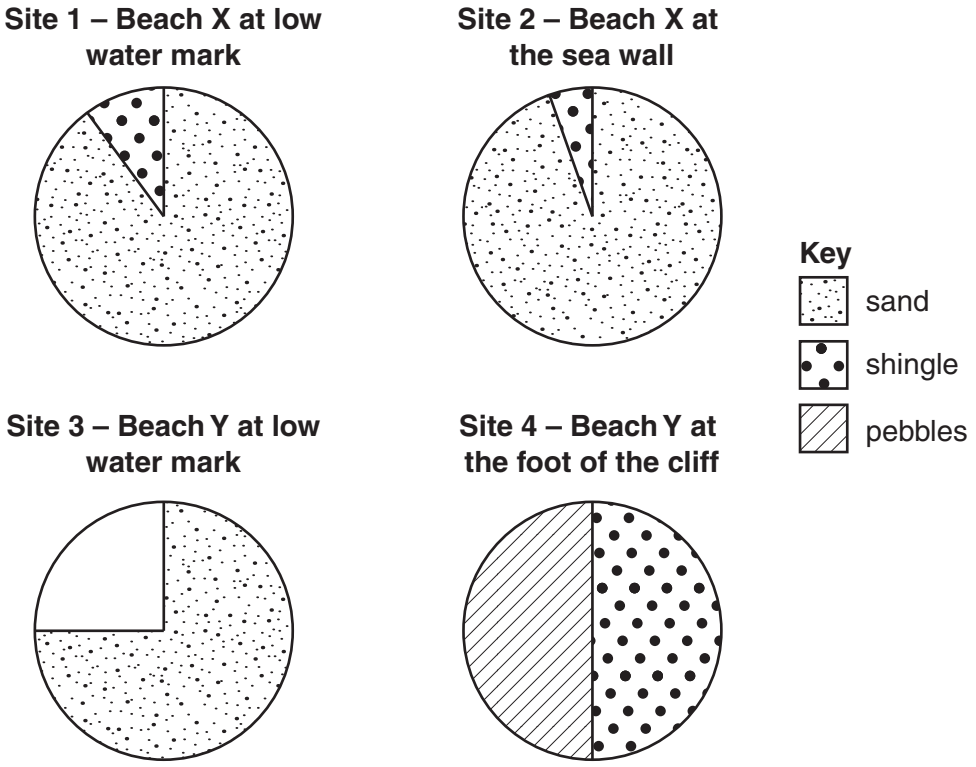

Fig. 11

(iii) Describe how proportions of the three materials differ between beaches **X** and **Y**.

Sand: .....

.....

Shingle: .....

.....

Pebbles: .....

..... [3]

(iv) Is **Hypothesis 1:** *The size of beach material increases away from the low water mark* true for

neither beach beach **X** beach **Y** beaches **X** and **Y** ?

Circle your answer. Support your conclusion with data from Table 3 and Fig. 11.

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..... [4]

(c) To investigate **Hypothesis 2:** *The environmental impact of tourism varies between the two beaches* the students produced a bi-polar scoring index which they used to survey the amount of litter on the beaches at four different sites (A, B, C and D), shown in Fig. 10.
Fig. 12 (Insert) shows their bi-polar scoring sheet.

(i) What decisions would the students have to make in planning the bi-polar survey?

.....

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.....

..... [3]

(ii) The results of the survey of the impacts of tourism are shown on Fig. 13 (Insert). Complete Fig. 14, below, by plotting the results for plastic at sites C and D. [2]

Results of the survey of the impact of tourism

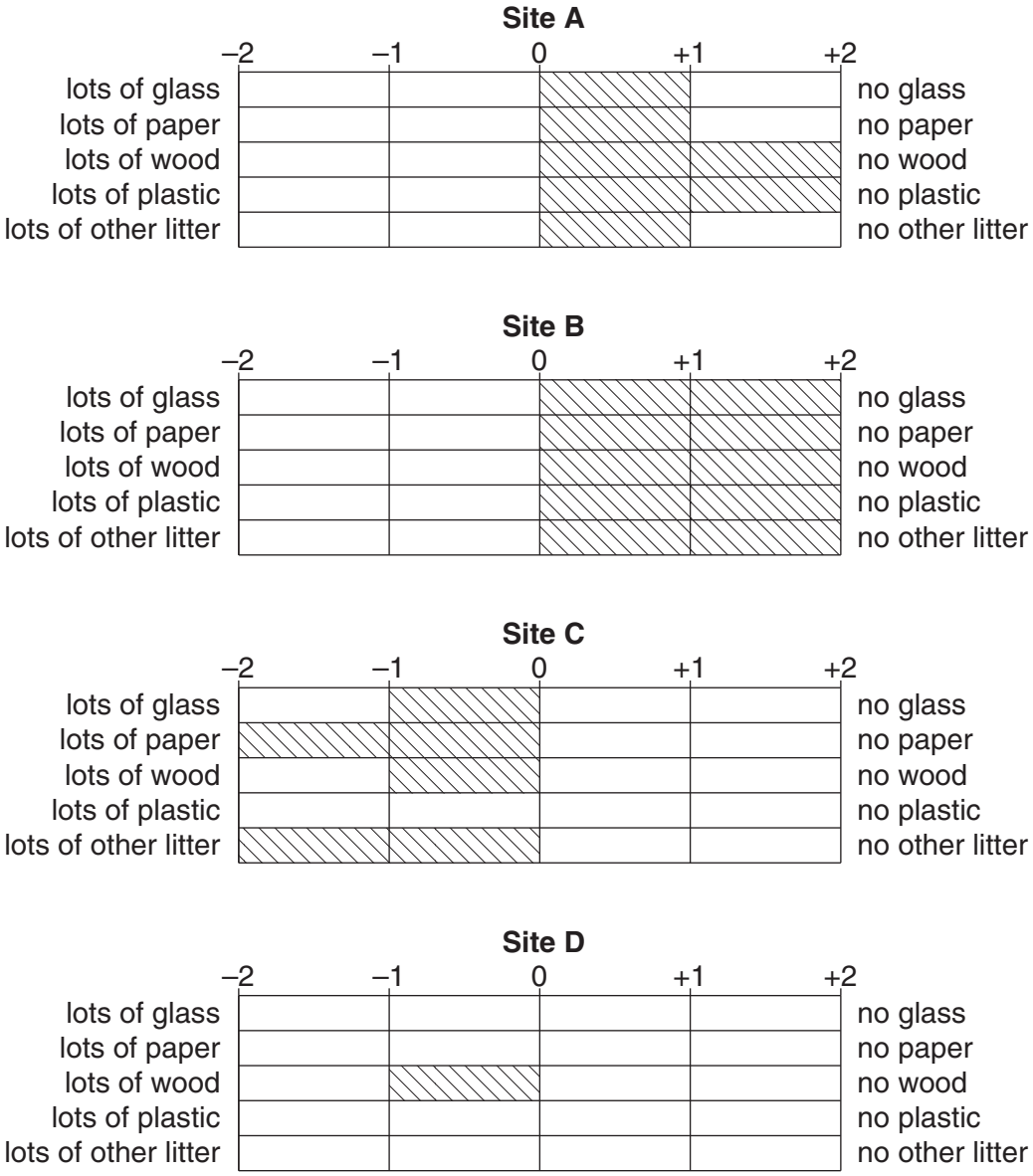

Fig. 14

(iii) Identify **one** similarity and **one** difference between the results for sites A and B.

Similarity .....

.....

Difference .....

..... [2]

(iv) Do the results of the bi-polar litter survey in Figs 13 and 14 support **Hypothesis 2:** *The environmental impact of tourism varies between the two beaches*? Explain your conclusion.

.....

.....

.....

.....[2]

(v) Suggest reasons for the results of the bi-polar survey of the environmental impact of tourism.
Refer back to Fig. 10 (Insert) to help you to answer.

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.....[3]

(d) (i) Suggest another hypothesis that the students could have investigated to compare the **natural** features of the two areas of coast they studied.

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.....[1]

(ii) Describe how they could investigate the hypothesis you have chosen.

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.....[4]

[Total: 30 marks]

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PLEASE TURN OVER FOR QUESTION 8.

8 A group of students who were studying rural settlement in an MEDC decided to do some fieldwork in five local villages. They decided to test the following hypotheses:

Hypothesis 1: *As the population of a village increases there is an increasing number of different types of service found there.*

Hypothesis 2: *The three main reasons why people live in a village are the attractive scenery, peaceful location and the fact that they were born there.*

(a) To investigate **Hypothesis 1** the students needed to collect some data about the five villages. They decided to split into five pairs; each pair visited one village.

(i) Their first task was to find out the population of the five villages.
Suggest **two** ways they could have done this.

1 .....

.....

2 .....

..... [2]

(ii) Each pair of students discussed how they would be able to compare the types of service found in each village. They thought of the following methods:

A Make a list of all the services found in the village,

B Decide on the types of service to look for and tick them off when they were seen in the village.

Which do you think is the best method? Give **two** reasons for your choice.

Method .....

1 .....

.....

2 .....

..... [2]

(iii) Suggest **one** disadvantage of each pair of students working in a different village.

.....

..... [1]

(b) The results of students' fieldwork are shown in Table 4 opposite.

Table 4

Results of fieldwork

Village	Population	Types of service									
		Bus stop	Cafe	Doctors' surgery/ clinic	Garage	General store	Place of worship	Post box	Primary school for ages 5–11	Railway station	Total
Ince	1500	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Albany	729	✓	✓	✗	✓	✓	✓	✓	✗	✗	
Bethel	542	✓	✗	✓	✗	✓	✓	✓	✓	✗	6
Mead	234										3
Stanley	40	✗	✗	✗	✗	✗	✗	✓	✗	✗	1

(i) Add the following information to Table 4:
In Mead there is a general store, post box and a cafe. [1]

(ii) Complete Table 4 by adding the total number of types of service found in Albany. [1]

(iii) Identify the highest order service shown in Table 4.

..... [1]

(iv) The students plotted the results onto a scatter graph, Fig. 15, opposite.
Label the horizontal axis of the graph. [1]

(v) Plot the results for Ince on Fig. 15. [1]

(vi) The students decided that their results supported **Hypothesis 1**: *As the population of a village increases there is an increasing number of different types of service found there*.
What evidence from Table 4 and Fig. 15 supports their decision?

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..... [3]

(vii) Suggest why larger villages have a greater number of different types of service.

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..... [2]

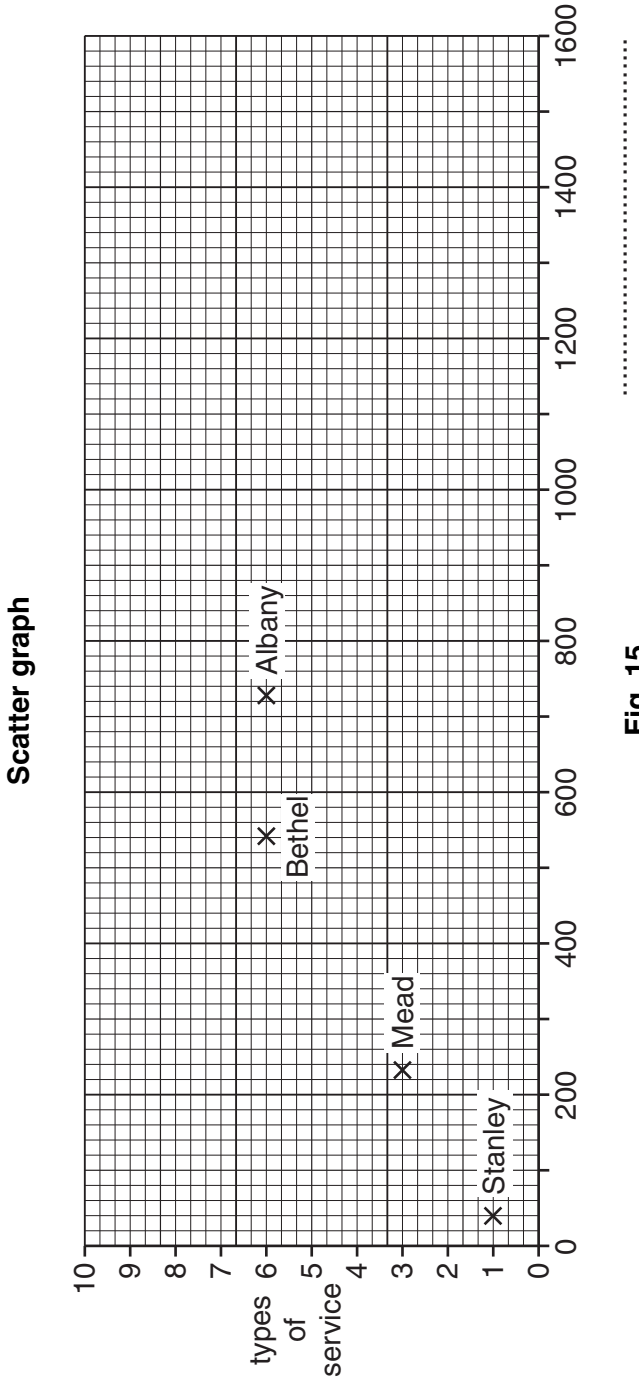
Scatter graph
types of service
0
1
2
3
4
5
6
7
8
9
10
0
200
400
600
800
1000
1200
1400
1600
Albany
Bethel
Mead
Stanley

Fig. 15

.....

(c) To investigate **Hypothesis 2**: *The three main reasons why people live in a village are the attractive scenery, peaceful location and the fact that they were born there* the students asked a sample of the population of Bethel 'What is the main reason you live in Bethel?' They grouped the answers they received as shown in Table 5 (Insert).

(i) Under which reason in Table 5 would the following answers be included?

1 I have always lived in the village.

Reason .....

2 Even though I work in an office in the city 40 kms away, I can get there in 30 minutes.

Reason .....

3 The views of the hills and lake are spectacular, especially at sunset.

Reason ..... [3]

(ii) Complete Fig. 16, below, by plotting the results for:
- moved to the village on retirement
- low crime rate. [2]

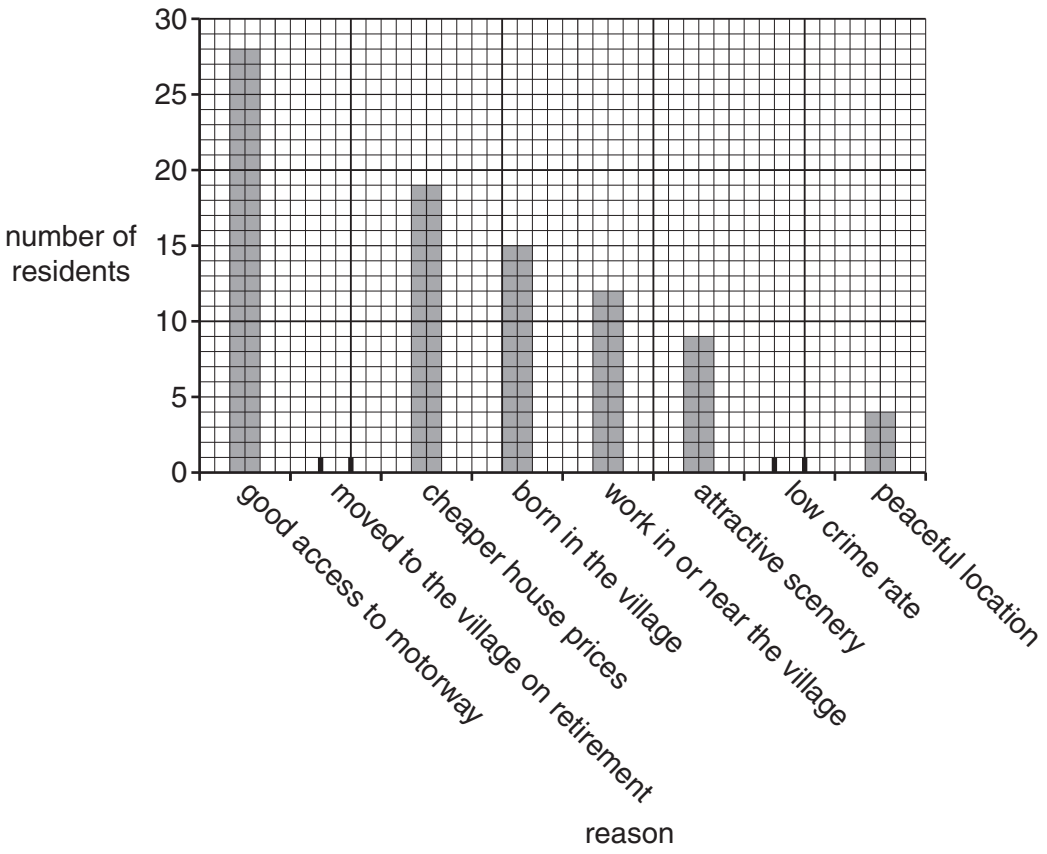

Fig. 16

(iii) What conclusion would the students have made about **Hypothesis 2**: *The three main reasons why people live in a village are the attractive scenery, peaceful location and the fact that they were born there*? Support your answer with data from Fig. 16.

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.....[4]

(d) Suggest **two** problems which the pair of students may have faced in doing their survey in Bethel.

1.....

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2.....

.....[2]

(e) Some students wanted to find out more about how the villages were changing in addition to population changes. Suggest a suitable investigation and describe how it could be done.

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.....[4]

[Total: 30 marks]

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