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.

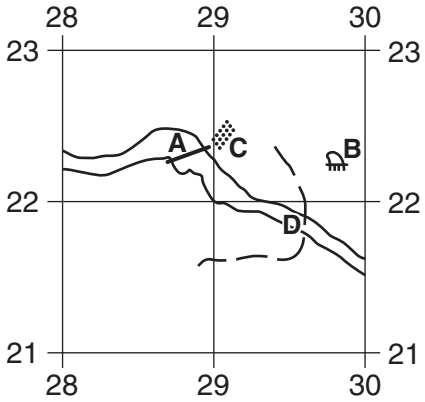


**Fig. 1**

**(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.

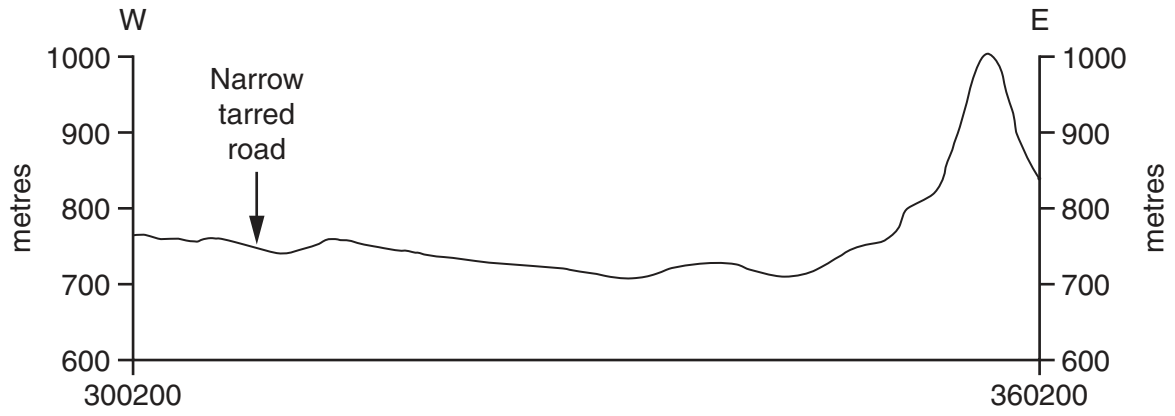


**Fig. 2**

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.

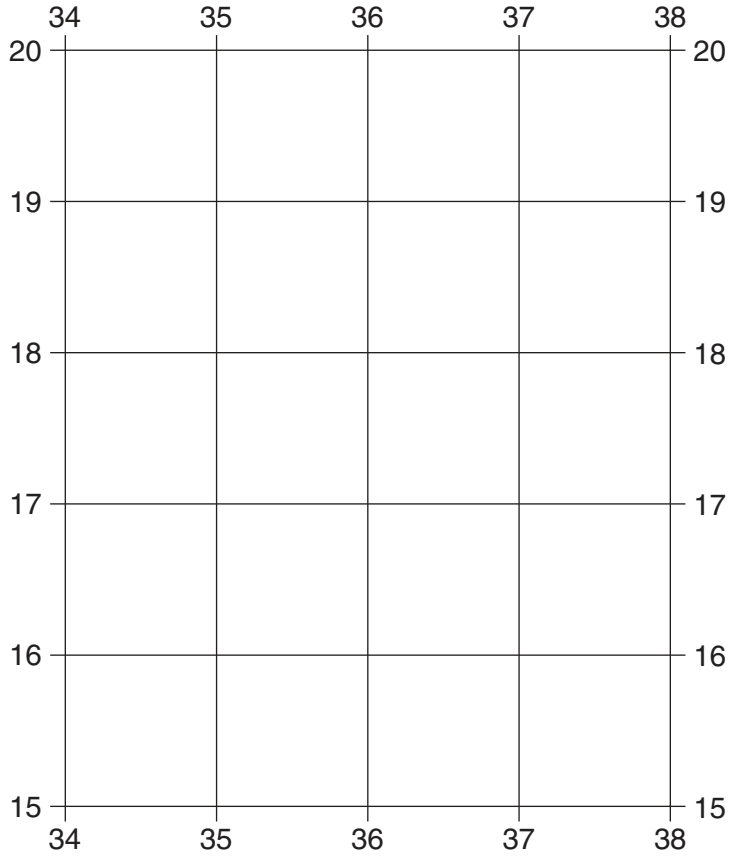


**Fig. 3**

**(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.

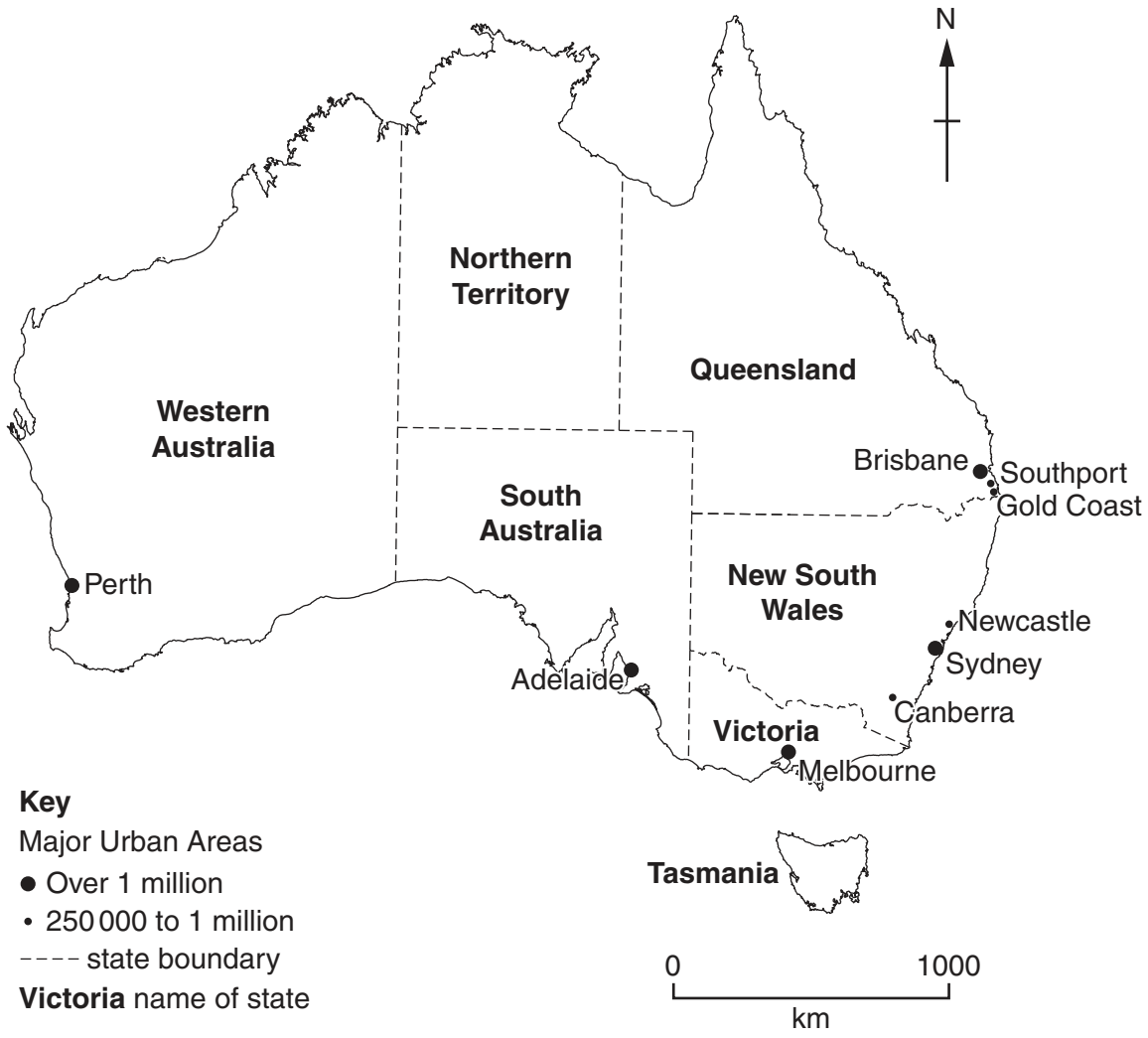


**Fig. 4**

**(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.

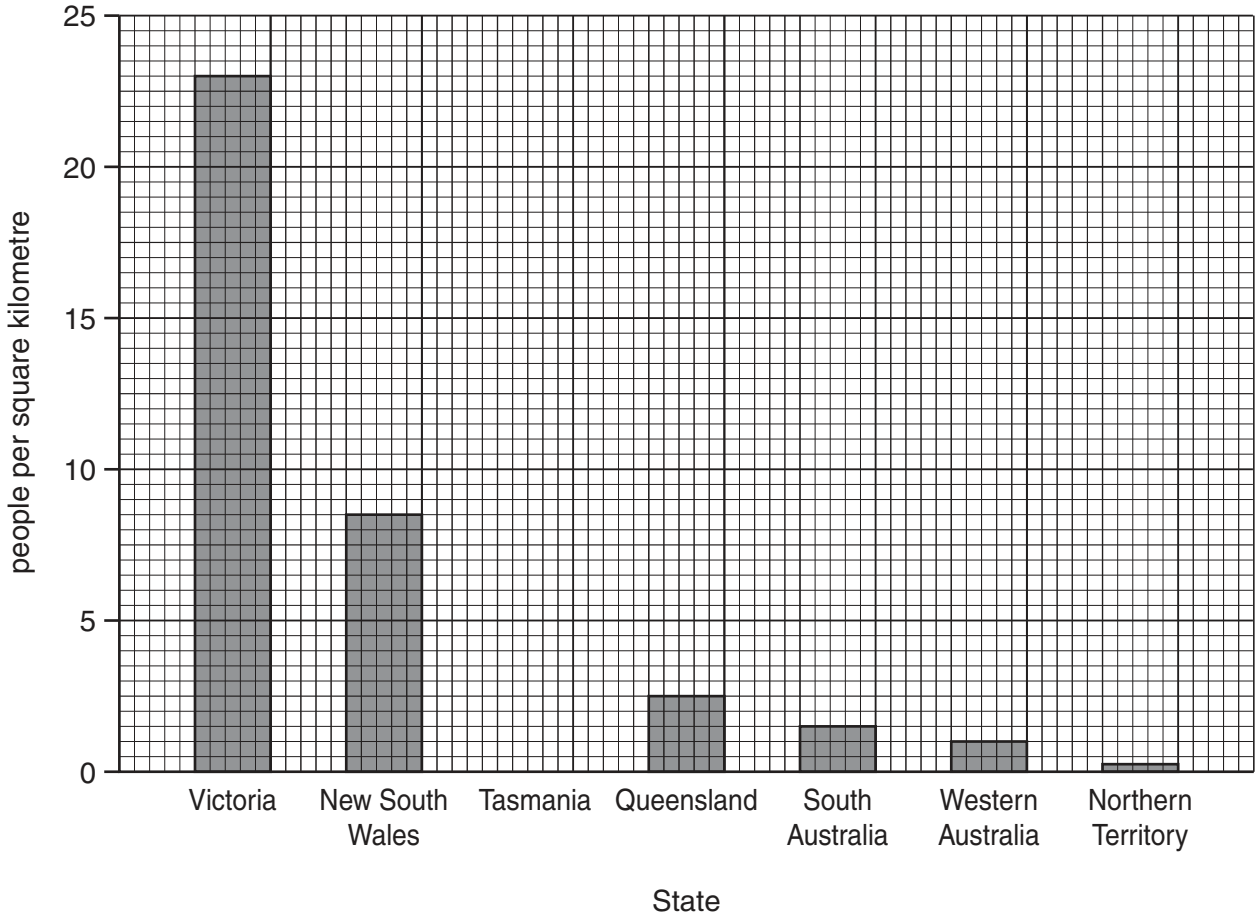


**Fig. 5**

**(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.

.....

.....

.....

.....

.....

..... [3]

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

**X** .....

.....

.....

**Y** .....

.....

.....

**Z** .....

.....

..... [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.

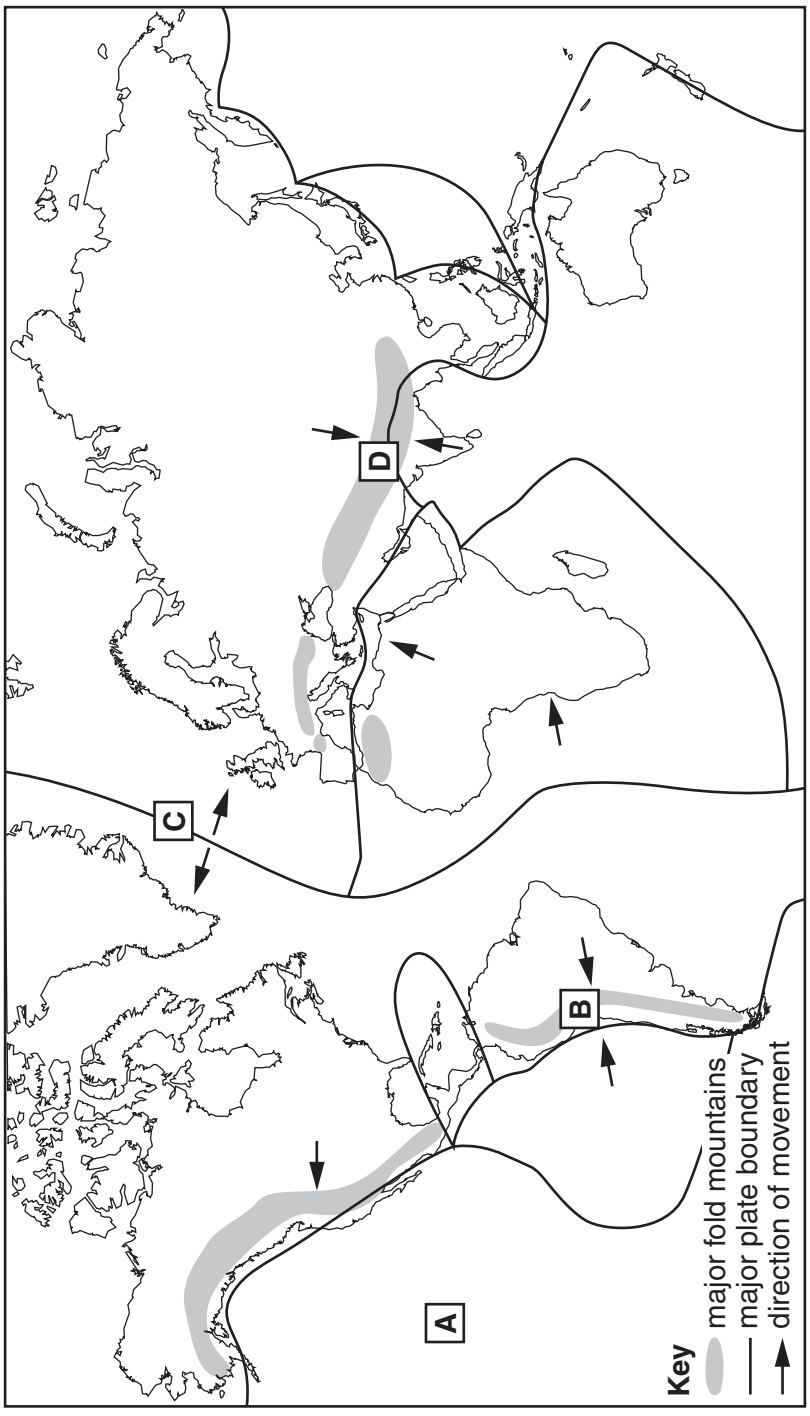


**Fig. 6**

**(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.

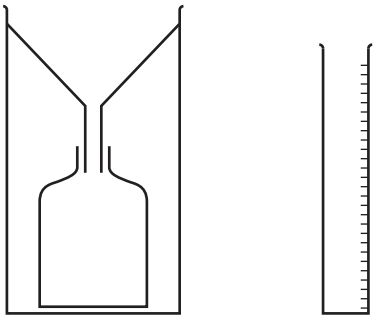

**Fig. 7**

**(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.

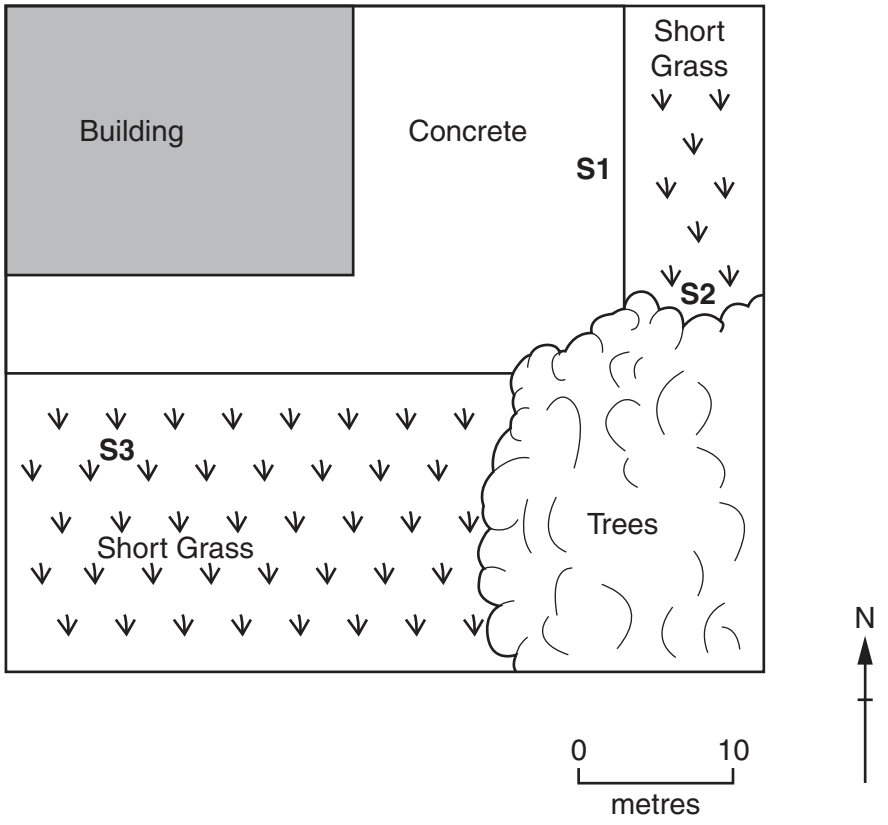


**Fig. 8**

**(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.

.....

.....

.....

..... [2]

[Total: 8 marks]

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

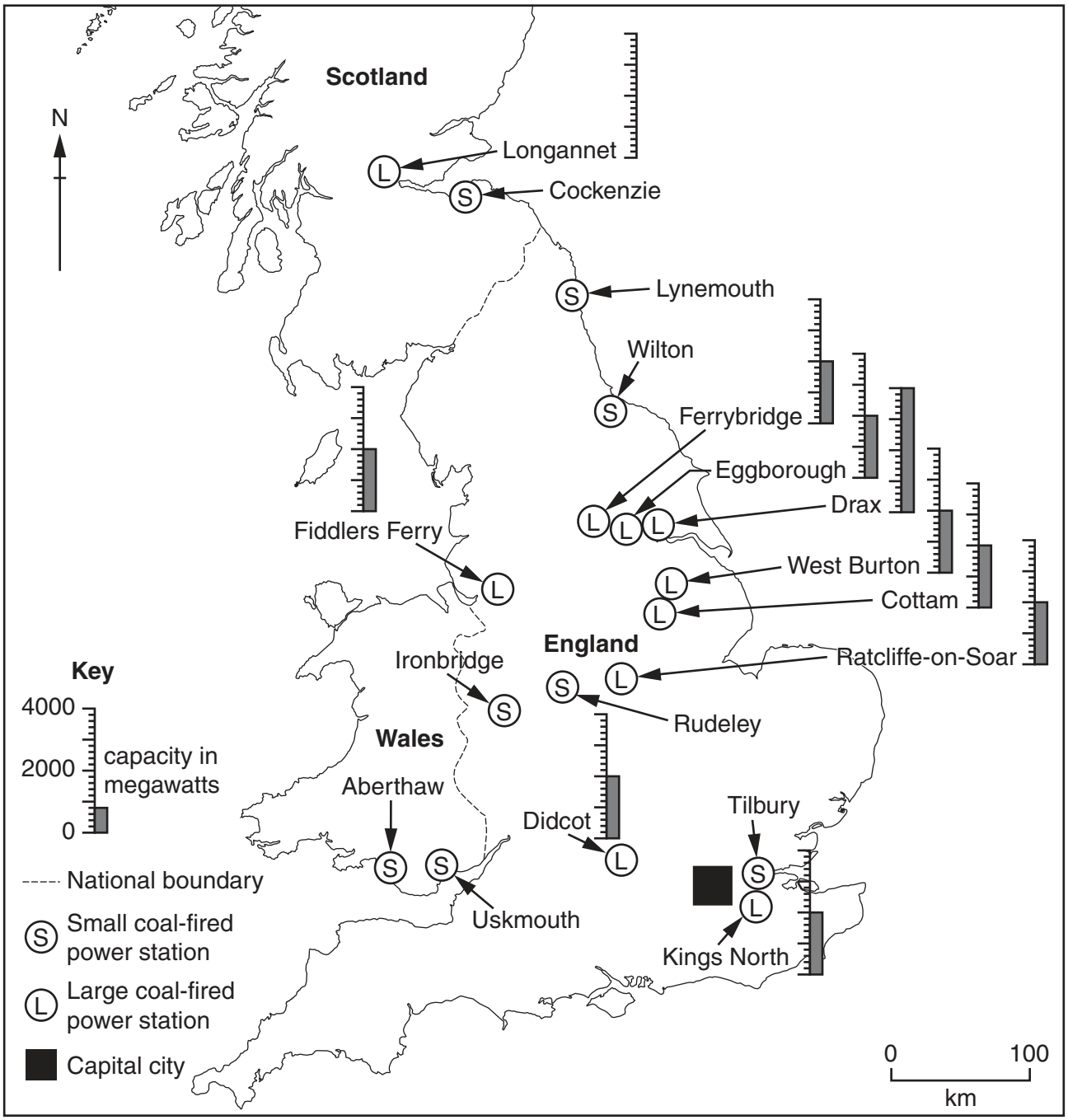


**Fig. 9**

**(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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.....[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]

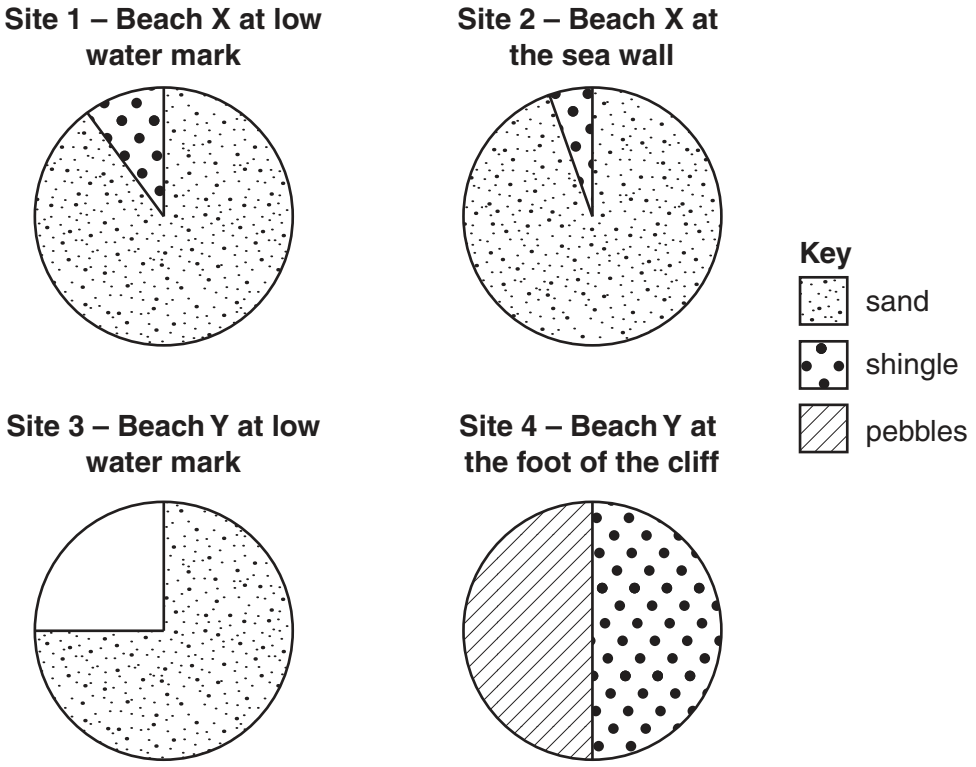


**Fig. 11**

**(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**

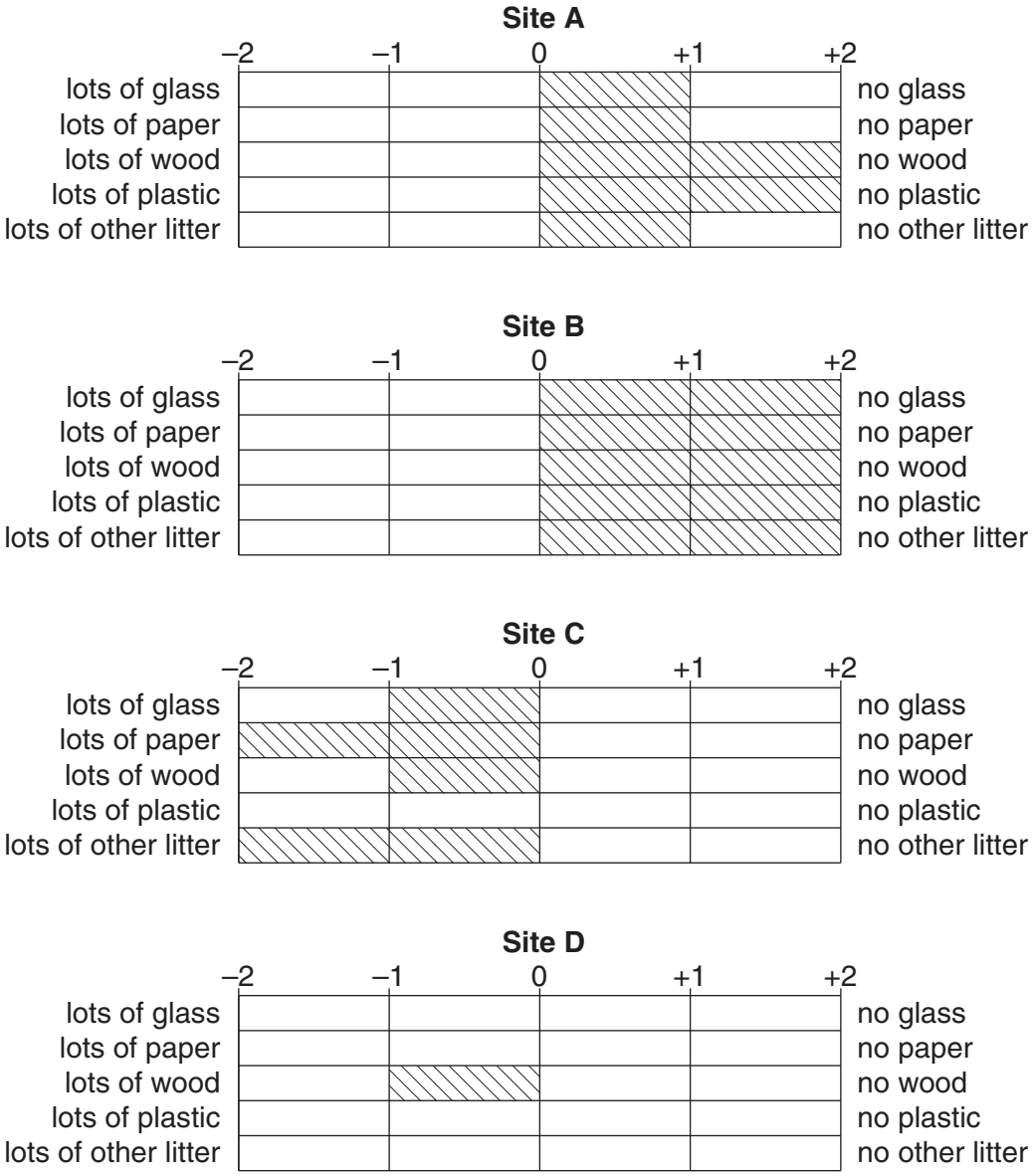


**Fig. 14**

**(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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.....

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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 | | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Bus stop | Cafe | Doctors' surgery/ clinic | Garage | General store | Place of worship | Post box | Primary school for ages 5–11 | Railway station | | |
| 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]

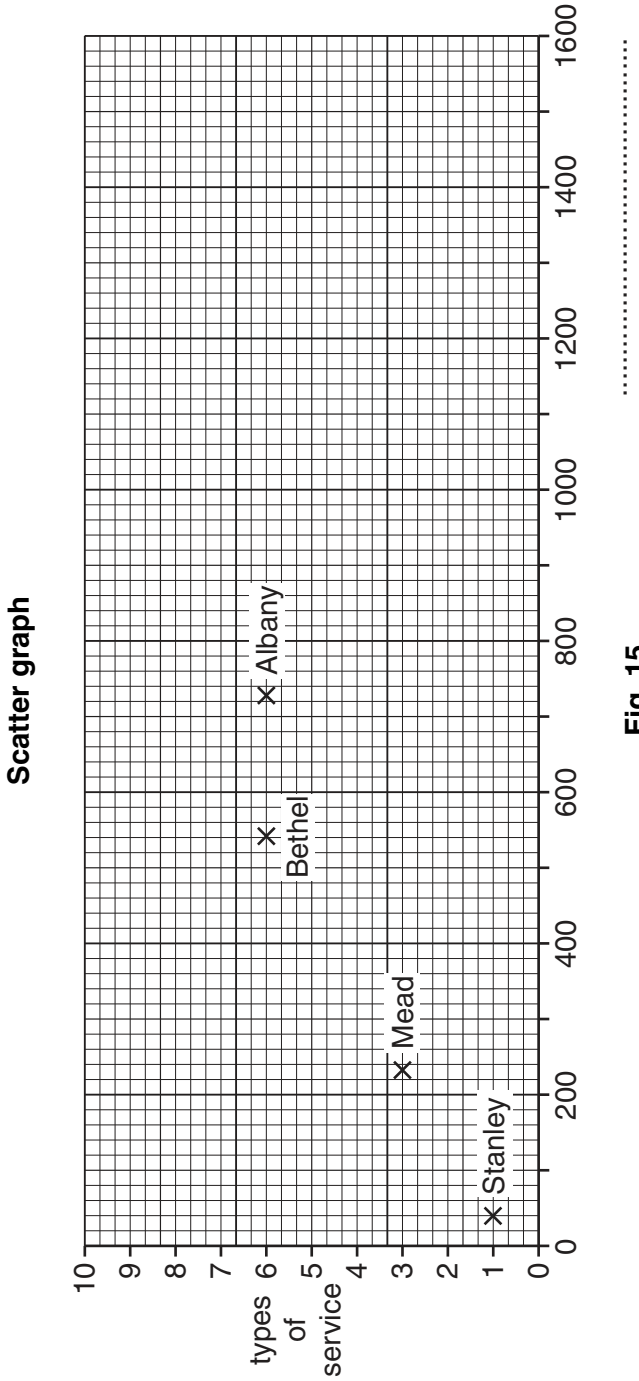


Fig. 15

.....

**(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]

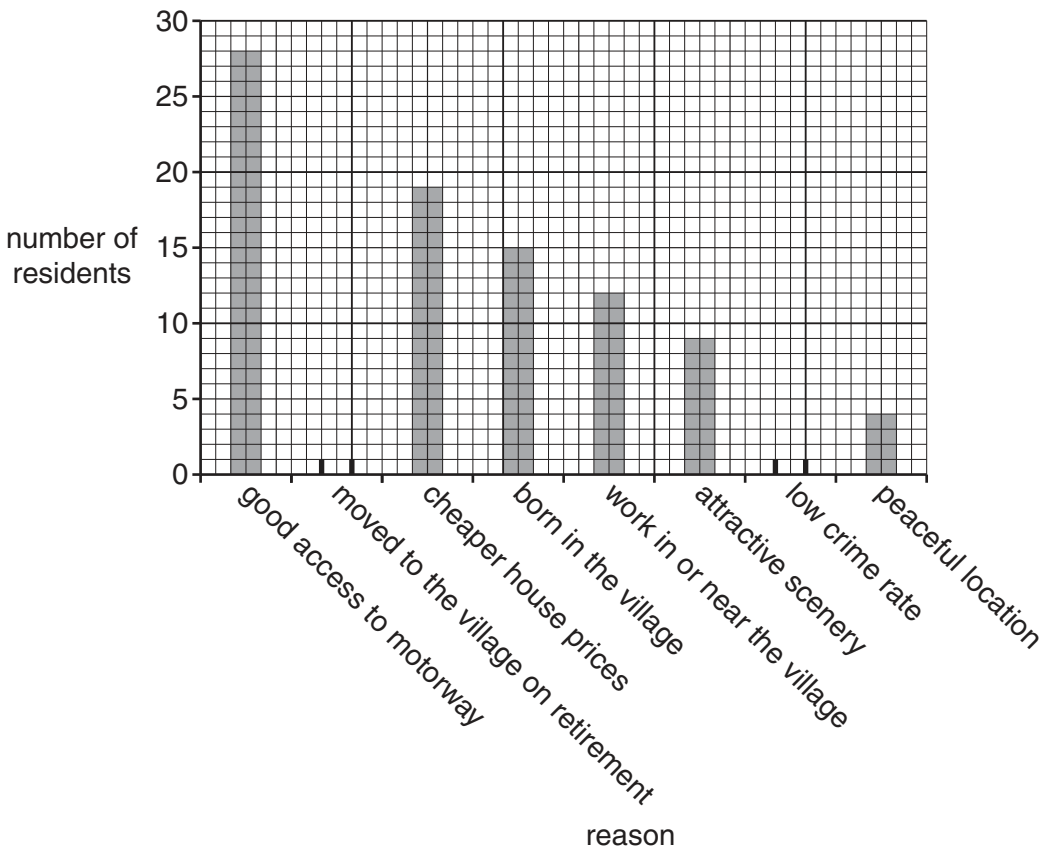


**Fig. 16**

**(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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