

CANDIDATE
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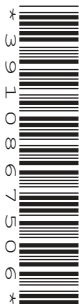
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CENTRE
NUMBER

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GEOGRAPHY

2217/23

Paper 2

October/November 2014

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 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, Figs 10 and 12, Photograph B and Tables 1 and 2 for Question 7, and Fig. 14 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 **27** printed pages, **1** blank page and **1** Insert.

Section A

Answer all questions in this section.

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

(a) (i) Give the six figure grid reference of the building at the Rutherland Aerodrome Landing Area.

.....[1]

(ii) In which two directions can aeroplanes take off from Rutherland Aerodrome Landing Area?

.....[1]

(iii) Why is this a good location for an aerodrome landing area?

.....
.....
.....
.....[2]

(b) What is the distance along the railway from the western edge of the map to the end of the line near Shamva Station? Give your answer in kilometres.

.....[1]

(c) Study the area of the map shown in Fig. 1.

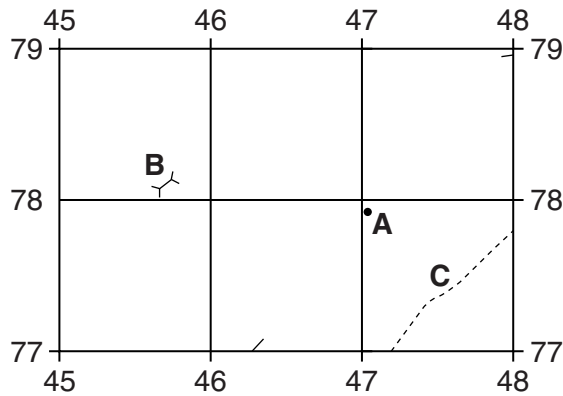


Fig. 1

(i) What is the height at spot height A?

.....[1]

(ii) Identify feature B.

.....[1]

(iii) Identify feature C.

.....[1]

(iv) On Fig. 1, complete the 1100 m contour on the eastern side of the valley.

[2]

(d) Study the land-use in grid square 4279 and grid square 4779 and complete the table below by placing a tick in each row. The first one has been done for you.

	In 4279 only	In 4779 only	In both squares	In neither square
Marsh				✓
Bush				
Cultivation				
Mining				
Urban				

[4]

(e) Find the line from X at 430804 to Y at 480804. Fig. 2 shows three different cross sections.

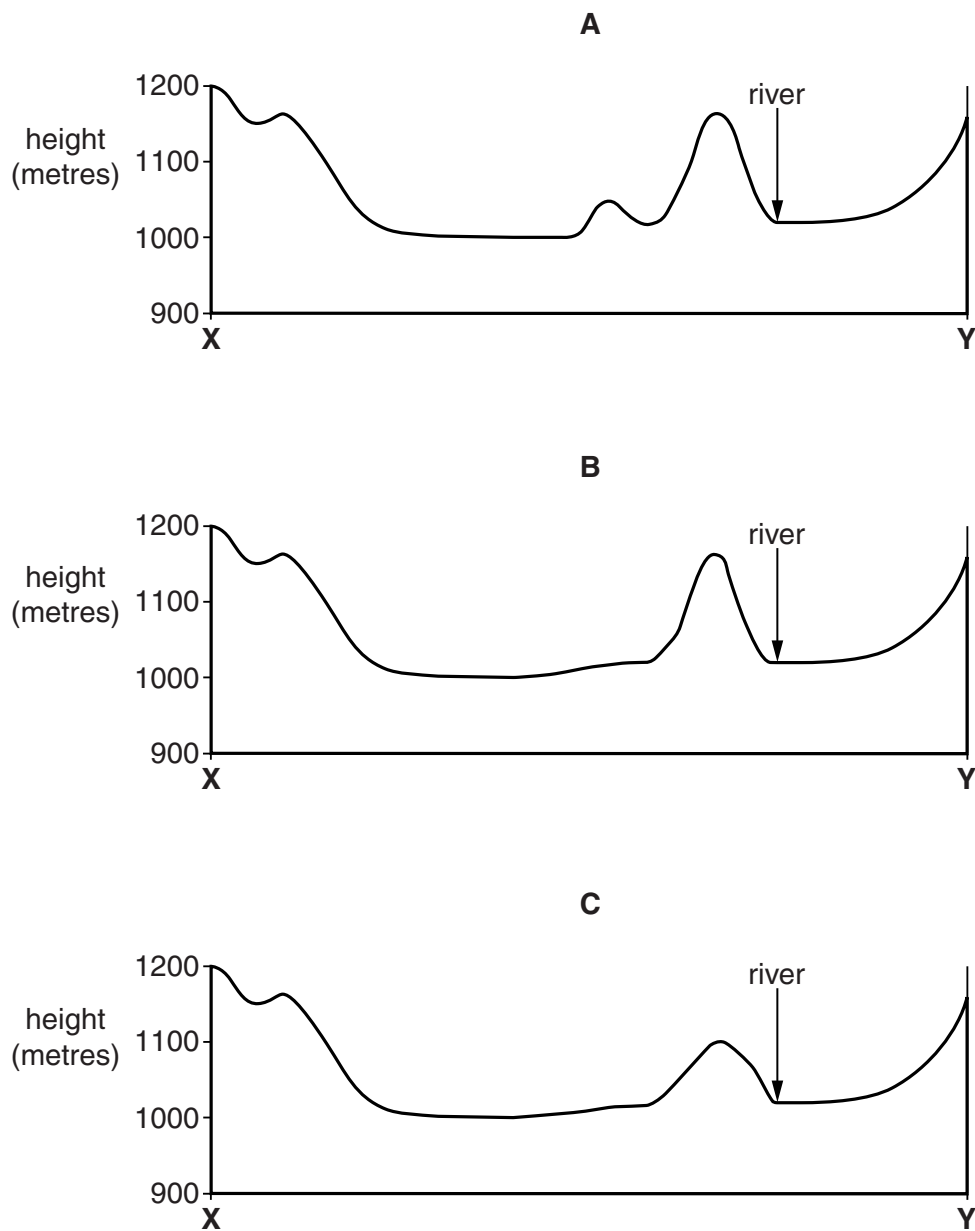


Fig. 2

- (i) Which cross-section opposite shows the shape of the land between **X** and **Y**? Tick one box below.

A	
B	
C	

[1]

- (ii) On the cross-section chosen in **(e)(i)**, use labelled arrows to indicate the position of:

D – wide tarred road

E – a hut

F – western edge of the cultivated land

[3]

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

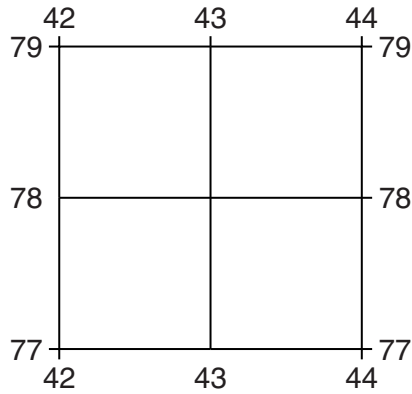


Fig. 3

Describe the drainage in this area.

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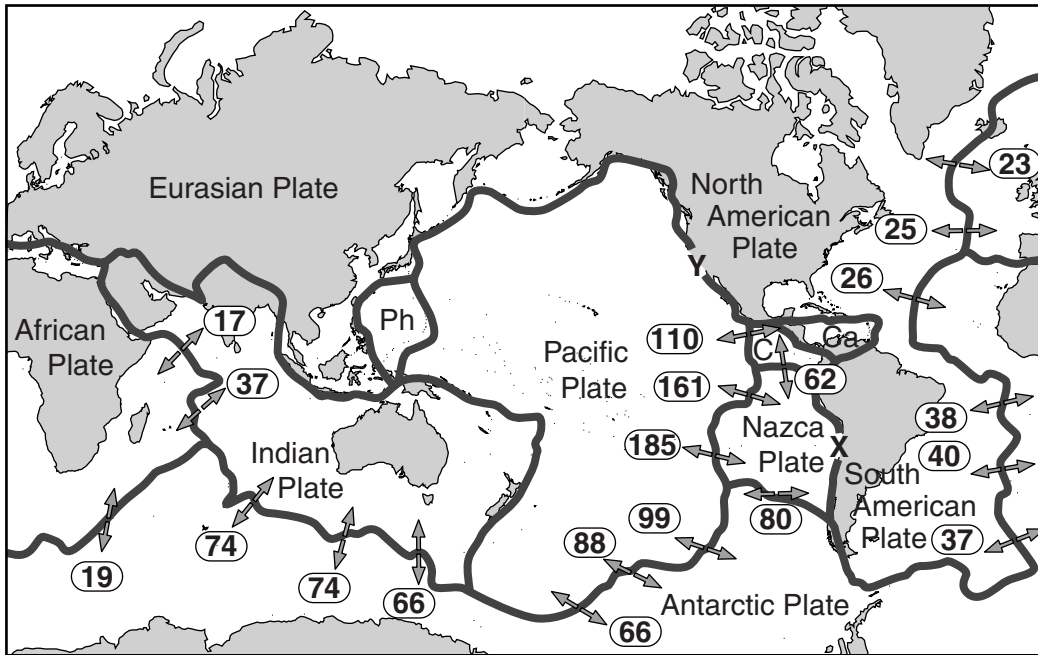
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.....

..... [2]

[Total: 20 marks]

- 2 Study Fig. 4, which shows plate boundaries and the spreading rate for those boundaries where sea floor spreading is occurring.



Key
 ↔ (19) spreading rate mm/yr
 Ph = Philippine Plate
 Ca = Caribbean Plate
 C = Cocos Plate

Fig. 4

- (a) (i) What is the fastest rate of sea floor spreading recorded on Fig. 4?
[1]
- (ii) What is the type of plate boundary where sea floor spreading is taking place?
 Circle **one** correct answer below.
 This type of plate boundary is known as:
 conservative constructive destructive [1]
- (iii) Describe the distribution of the plate boundaries where sea floor spreading is occurring.

[3]

- (b) (i) Locations **X** and **Y** are labelled on Fig. 4. Identify the directions of plate movements at each of these locations. Circle the correct answer for **X** and **Y**.

At **X** the plates are: converging diverging moving in the same direction

At **Y** the plates are: converging diverging moving in the same direction

[2]

- (ii) Circle **one** correct answer to complete the sentence.

Earthquakes are likely to occur at:

X **Y** both **X** and **Y** neither **X** or **Y**

[1]

[Total: 8 marks]

3 Study Fig. 5, which shows a wind rose.

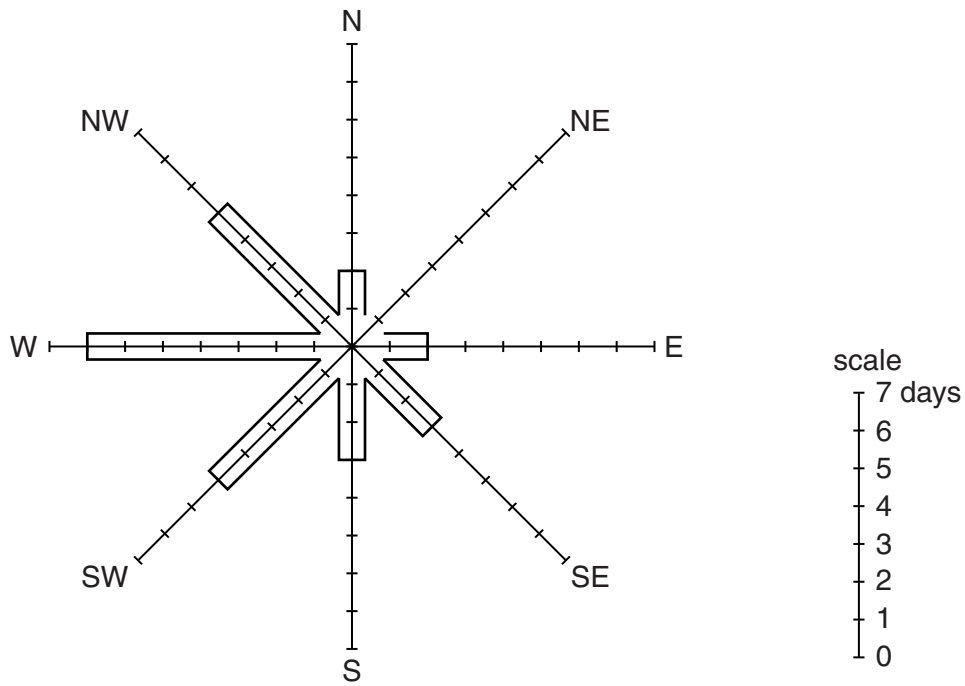


Fig. 5

- (a) (i) Complete Fig. 5 to show wind from the NE on 3 days. [1]
- (ii) How many days had a wind from the NW?
[1]
- (iii) What is the direction of the prevailing wind shown on Fig. 5?
[1]

(b) (i) Name the instrument that would be used to collect the data in Fig. 5.

.....[1]

(ii) Study Fig. 6, a sketch which shows two huts and a Stevenson Screen at a school.

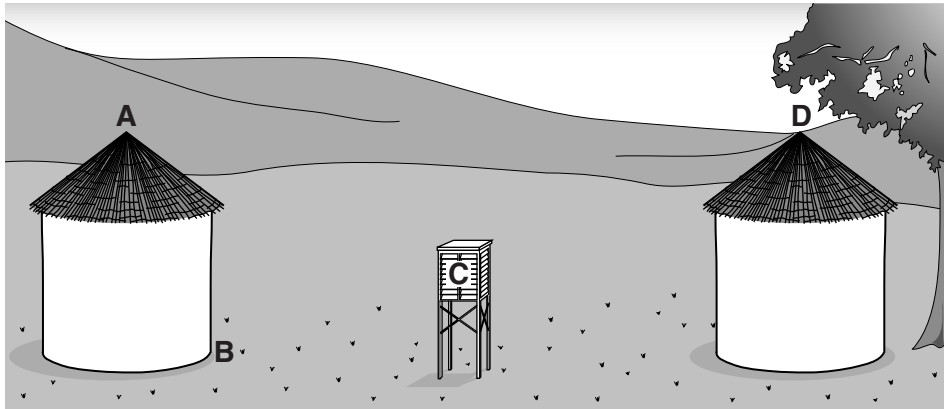


Fig. 6

Which location, **A**, **B**, **C** or **D**, would be the best site for the instrument named in (b)(i)?

.....[1]

(iii) Give reasons why each of the other three sites would not be suitable.

.....
.....
.....
.....
.....
.....
.....[3]

[Total: 8 marks]

4 Study Photograph A (Insert).

(a) How is the physical environment shown in Photograph A attractive to tourists?

.....
.....
.....
..... [2]

(b) What human features shown in Photograph A have been added to encourage tourism?

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

(c) Suggest **two** problems for local people that may result from increased popularity of tourism in the area.

.....
.....
.....
..... [2]

[Total: 8 marks]

5 Study Fig. 7, which shows population density in Mexico.

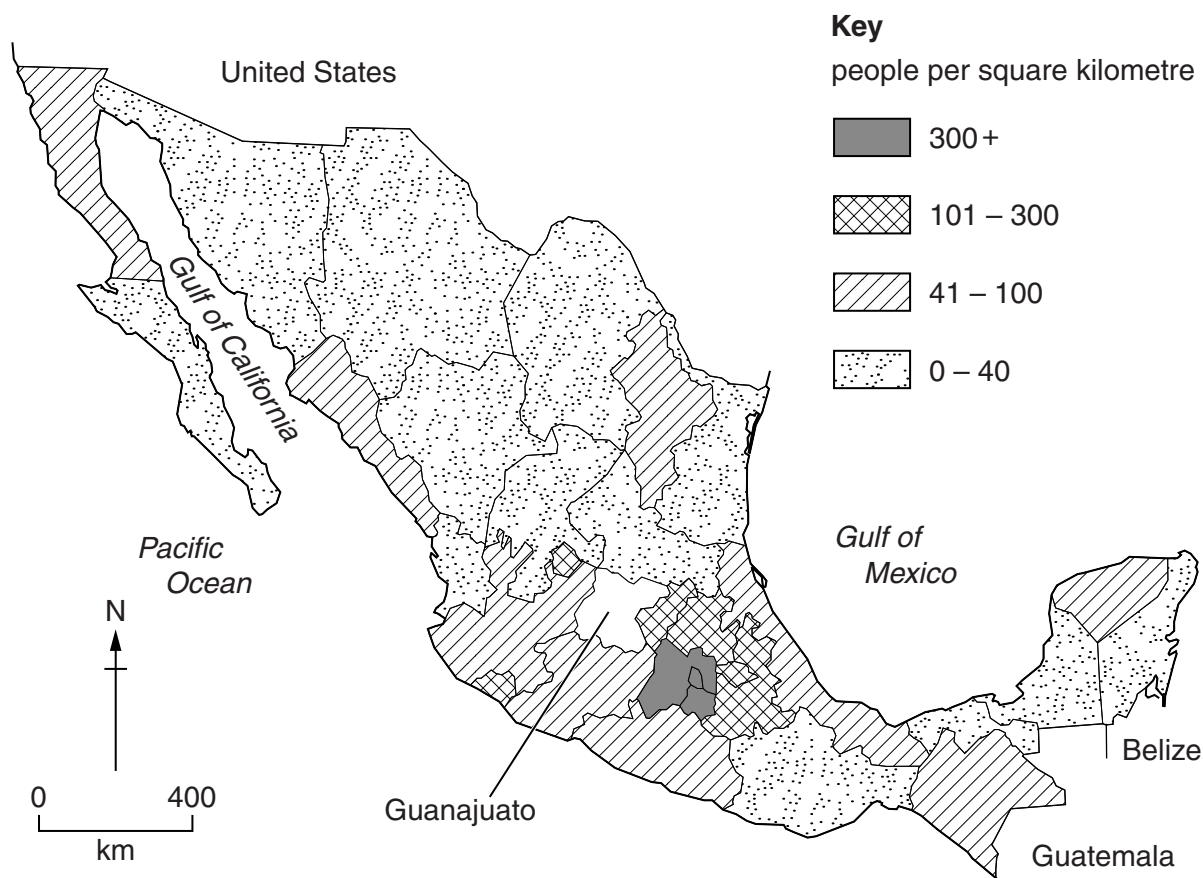


Fig. 7

- (a) (i) Complete Fig. 7 to show that Guanajuato state has 107 people per square kilometre. [1]
- (ii) Describe the distribution of areas with 41 – 100 people per square kilometre.

.....

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.....[3]

(b) Study Fig. 8, which shows how Mexico's population growth rate has changed.

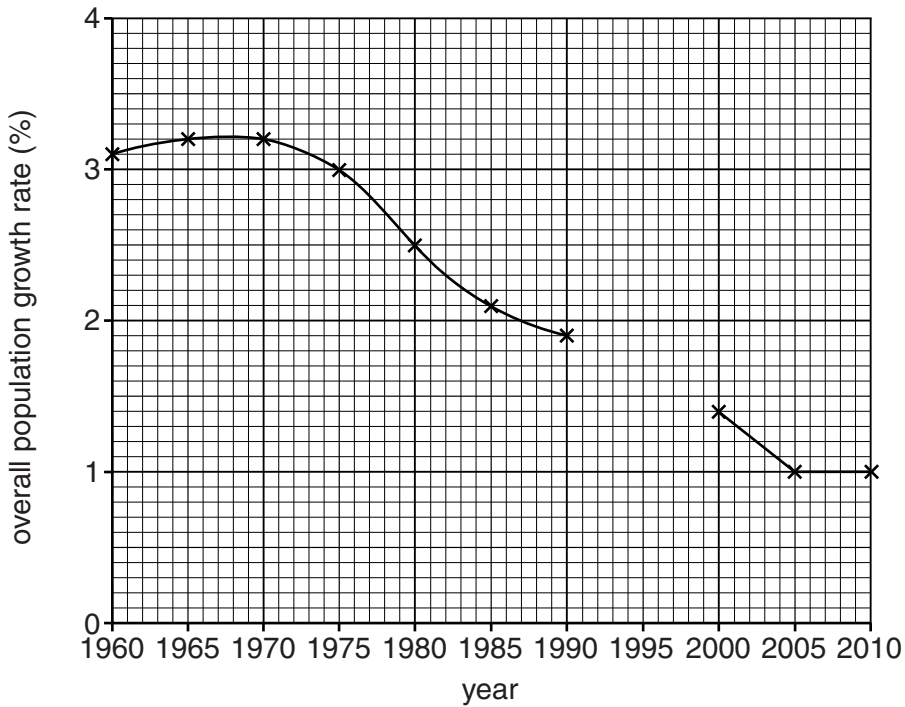


Fig. 8

(i) Complete Fig. 8 to show an overall population growth rate of 1.8% in 1995. [1]

(ii) Describe the change in overall population growth rate between 1960 and 1990.

.....

.....

.....

.....[2]

(iii) What effect did the change in overall population growth rate have on the total population of Mexico? Circle the correct answer.

increased rapidly increased slowly stayed the same [1]

[Total: 8 marks]

6 Study Fig. 9, which shows changes in employment in an area close to the CBD of an MEDC city.

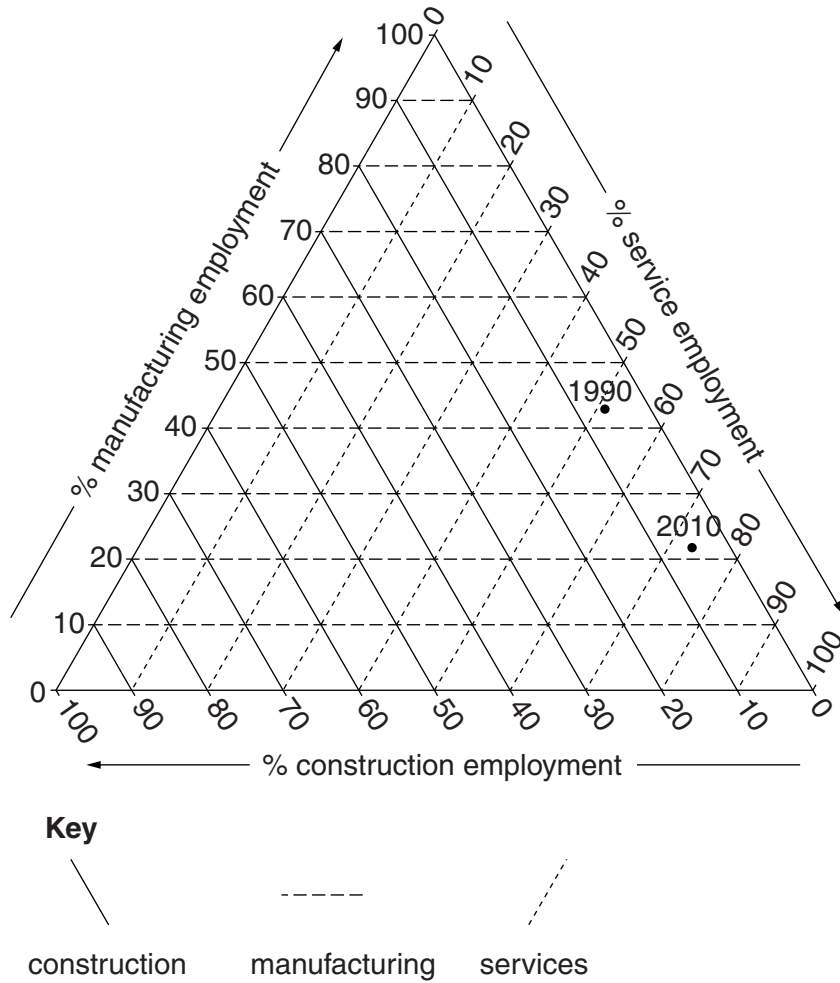


Fig. 9

(a) Circle a figure in each line to show the percentage figures used to plot the data point for 1990 on Fig. 9.

Manufacturing	38	43	95	
Services	49	51	57	
Construction	6	13	49	[1]

(b) Using Fig. 9, describe **two** changes in employment over the period from 1990 to 2010.

.....

.....

.....

.....[2]

(c) (i) Describe **three** features of the CBD in an MEDC.

.....
.....
.....
.....
.....
.....
..... [3]

(ii) Suggest **two** changes that are likely to be taking place due to redevelopment.

.....
.....
.....
..... [2]

[Total: 8 marks]

TURN OVER FOR QUESTION 7

Section B

Answer **one** question in this section.

- 7 Two groups of students were doing fieldwork in the Rio Santa Valley in Peru. They chose four sites along the river to investigate how the river changes downstream.

The students investigated the following hypotheses:

Hypothesis 1: *River velocity increases downstream.*

Hypothesis 2: *Rocks on the bed of the river (bedload) become smaller and more rounded downstream.*

- (a) Each group used two different methods to measure velocity. In method 1 they used floating objects and in method 2 they used a velocity meter (flow meter). The velocity meter and how it is used are shown in Photograph B and Fig. 10 (Insert).

Describe the **two** different methods of measuring velocity.

Method 1 (using floating objects)

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Method 2 (using a velocity meter)

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[6]

(b) (i) The students agreed that method 1 (using floating objects) had produced unreliable results compared to method 2 (using a velocity meter). Suggest **three** reasons why method 1 may have produced unreliable results.

1

.....

2

.....

3

.....[3]

(ii) The results of the students' measurements using a velocity meter are shown in Table 1 (Insert). Use the average velocity results to complete the graph for Group A in Fig. 11 below. [2]

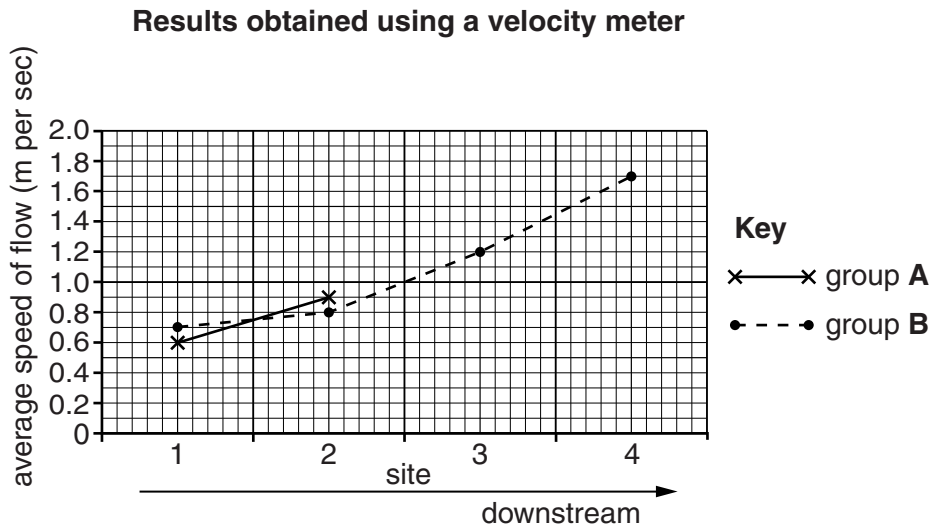


Fig. 11

(iii) What conclusion would the students in **Group B** make about **Hypothesis 1: River velocity increases downstream?** Support the conclusion with evidence from Fig. 11.

.....

.....

.....

.....[2]

(c) Next the students made some measurements to investigate **Hypothesis 2: Rocks on the bed of the river (bedload) become smaller and more rounded downstream.**

(i) At each site the two groups of students selected 10 rocks at random from the river bed. They then measured the size and roundness of each rock using the equipment shown in Fig. 12 (Insert).

Describe how the students made the two measurements.

Size

.....

Roundness

.....[2]

(ii) Suggest **two** weaknesses of selecting rocks at random.

1

.....

2

.....[2]

- (iii) The results obtained by the two groups are shown in Table 2 (Insert). Plot the results of group B at site 3 on Fig. 13 below. [2]

Results of bedload measurements

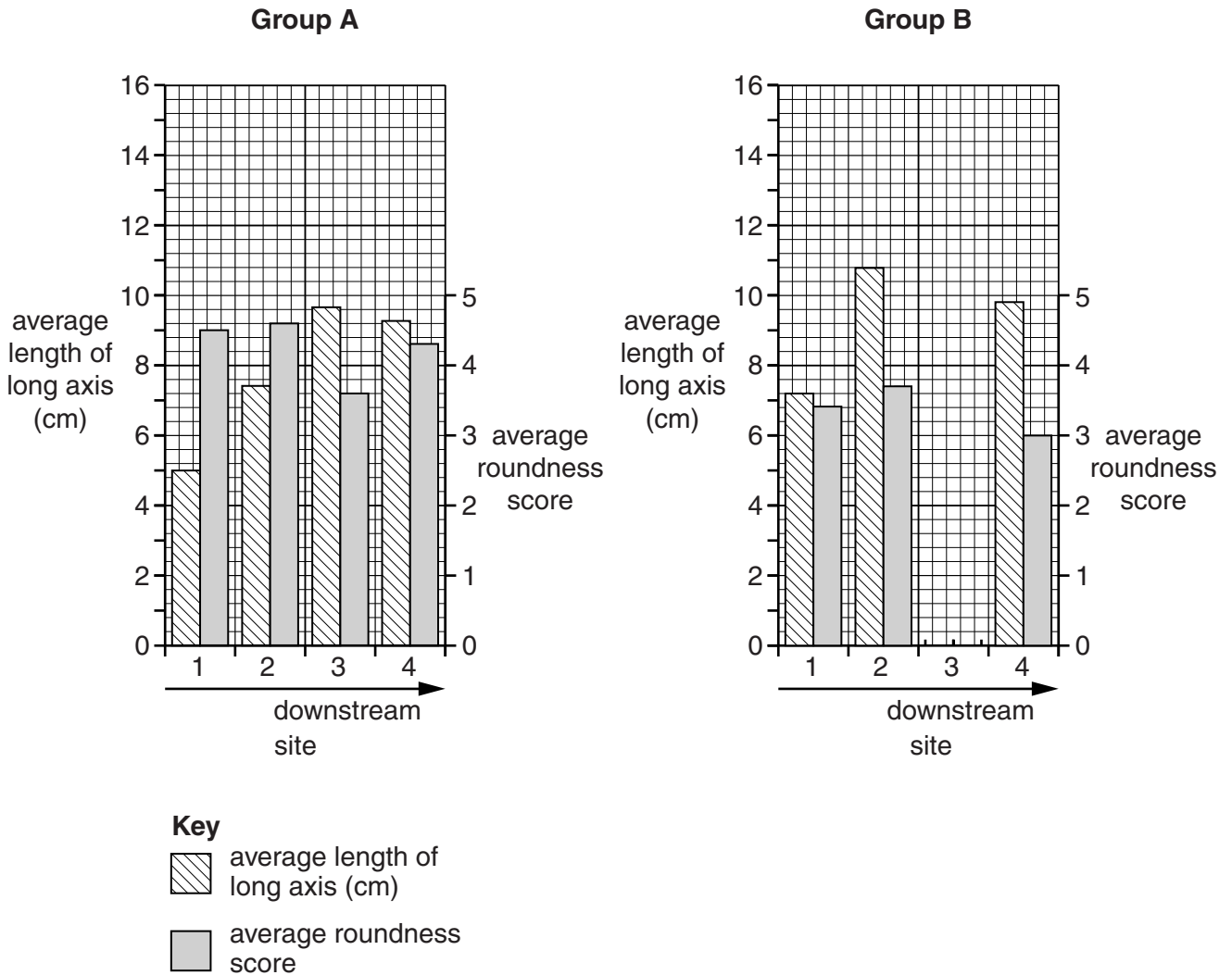


Fig. 13

- (iv) When they looked at their results the students in **Group A** came to the conclusion that **Hypothesis 2: Rocks on the bed of the river (bedload) become smaller and more rounded downstream**, was false. Give **two** pieces of evidence from their results in Fig. 13 to show why the students in Group A made this conclusion.

1

.....

2

..... [2]

(d) When the students returned to school their teacher was surprised by their results. The students then checked in a textbook and discovered that generally the rocks on a river bed become smaller and more rounded downstream.

(i) Explain why rocks generally become smaller and more rounded downstream.

.....
.....
.....
.....
.....
.....[3]

(ii) The students then thought about how they could improve the reliability of the method used during fieldwork if they repeated the task for **Hypothesis 2: Rocks on the bed of the river (bedload) become smaller and more rounded downstream.** Give **two** ways the reliability of the method could be improved.

1
.....
2
.....[2]

(e) Whilst the two groups of students worked on Hypotheses 1 and 2, other students were investigating different hypotheses. Describe a method to investigate the hypothesis: *The river channel becomes wider and deeper downstream.*

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

[Total: 30 marks]

TURN OVER FOR QUESTION 8

- 8 Two students from the UK were investigating change in their local village. The village was located 8 km from the nearest large town and had been growing in population and size. The students decided to test the following hypotheses:

Hypothesis 1: *Most people who moved to live in the village came from less than 10 km away.*

Hypothesis 2: *The main reason why people live in the village is because their work is in the village or nearby.*

- (a) To conduct their investigation the students produced a questionnaire to use with a sample of residents in the village. Their questionnaire is shown in Fig. 14 (Insert).

Name and describe a suitable sampling method to get a fair sample of residents.

Name of sampling method

Description.....

.....

.....

.....[3]

(b) The results of Question 1 from the questionnaire are shown in Table 3 below.

Table 3

Results of Question 1: How many years have you lived in the village?

Number of years	Percentage of residents
0 – 10	27
11 – 20	19
21 – 30	18
31 – 40	26
More than 40	10

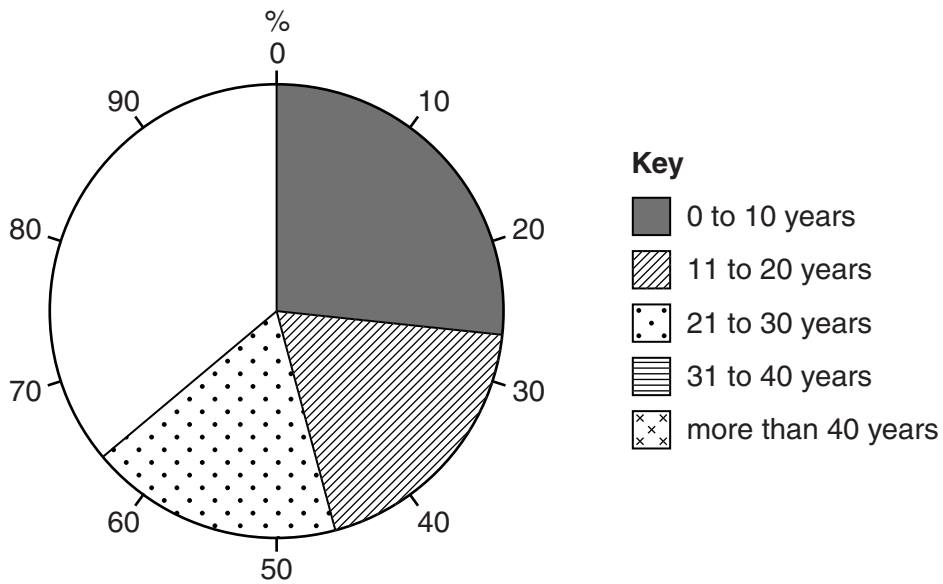


Fig. 15

- (i) Use the results in Table 3 to complete the pie chart, Fig. 15, above. [2]
- (ii) Which **one** of the following conclusions can be made from the results shown in Fig. 15? Put a tick (✓) to show your answer.

	✓
Most people have lived in the village for more than 40 years.	
Most people have lived in the village for more than 20 years.	
Most people have lived in the village for 10 years or less.	

[1]

(iii) The results of Question 2 are shown in Table 4, below.

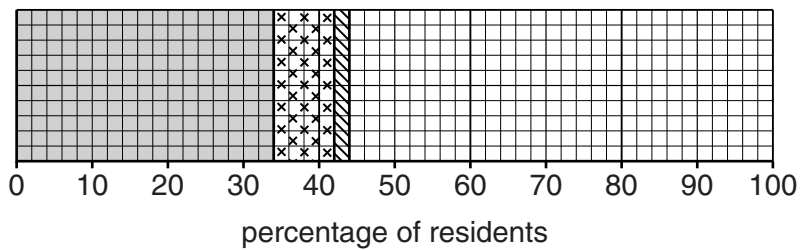
Table 4

Results of Question 2: Where did you live before moving to the village?

Previous location	Percentage of residents
Moved from towns more than 10 km away	34
Moved from villages more than 10 km away	8
Moved from outside the UK	2
Moved from nearby towns less than 10 km away	25
Moved from local villages less than 10 km away	15
Always lived in the village	16

Results of Question 2

Where did you live before moving to the village?



Key

Moved from:

- towns more than 10 km away
- villages more than 10 km away
- outside the UK
- nearby towns less than 10 km away
- local villages less than 10 km away
- always lived in the village

Fig. 16

Use the results from Table 4 to complete the divided bar graph, Fig. 16, above.

[3]

- (iv) The students used the information in Fig. 16 to work out a conclusion to **Hypothesis 1: Most people who moved to live in the village came from less than 10 km away.** Do you think the hypothesis is correct? Support your conclusion with evidence from Table 4 and Fig. 16.

.....

.....

.....

.....

.....

.....

.....[3]

- (v) The results of Question 3 in the questionnaire are shown in Table 5 below.

Table 5

Results of Question 3: What is the main reason you live in the village?

Reason	Percentage of residents
Easy access to work in the nearby town	38
Retired and moved to the village	25
Born in the village	16
Work in the village	15
Enjoy the peaceful location	4
Surrounded by attractive scenery	2

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

- 1 I have always lived in the village.

Reason

- 2 The views down the river valley are spectacular.

Reason

- 3 The village is only 5 km from the shop where I work and I can get there by bus.

Reason[3]

(vi) What conclusion would the students make about **Hypothesis 2**: *The main reason why people live in the village is because their work is in the village or nearby?*
Refer to data in Table 5 to explain your answer.

.....

.....

.....

.....

.....

.....

.....[3]

(c) The students also researched secondary data from the local census records.

(i) Explain what is meant by *secondary data*.

.....

.....[1]

(ii) Give **one** example, other than census records, of secondary data.

.....[1]

(iii) The secondary data researched by the students is shown in Table 6 below.
Name an appropriate type of graph to show this data.

.....[1]

Table 6

Population of the village 1961 – 2011

Year	1961	1971	1981	1991	2001	2011
Population	785	743	1161	1342	1596	2142

- (iv) The students used the figures in Table 6 to calculate the percentage change in population which occurred in the village during each 10 year period. These changes are shown in Table 7, below.

Table 7

Percentage change in population in each 10 year period

10 year period	1961–1971	1971–1981	1981–1991	1991–2001	2001–2011
Percentage change	–5.4	+56.3	+15.6	+18.9	+34.2

Use these figures to complete Fig. 17 below.

[2]

Population change in each 10 year period

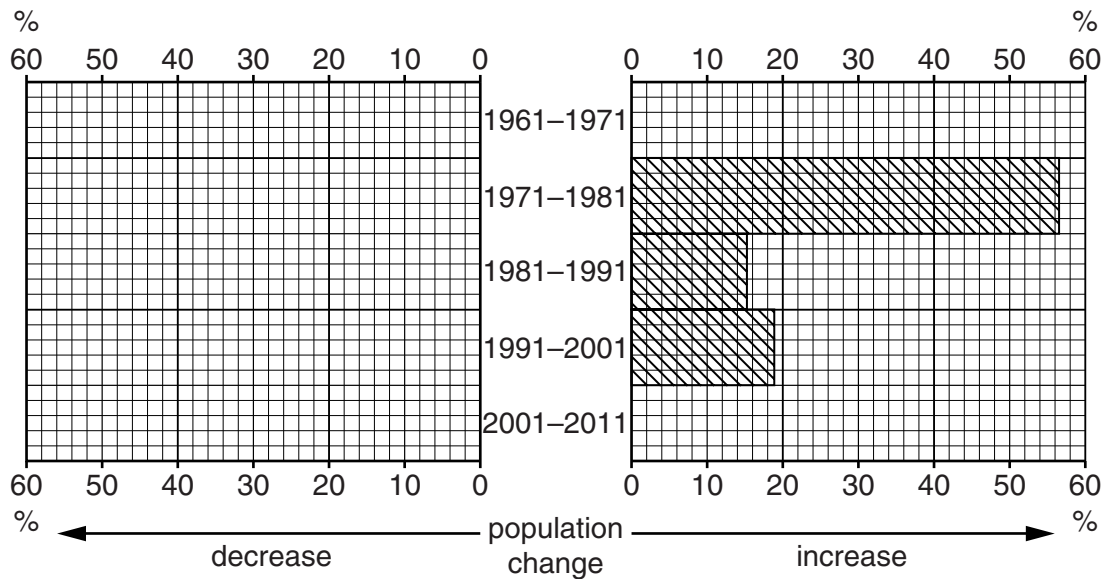


Fig. 17

- (v) When studying the population figures the students realised that the village was growing quickly in size and population. Suggest **two** problems that this growth might cause for local people and **two** problems it might cause for the local environment.

Local people

1

.....

2

.....

Local environment

1

.....

2

.....[4]

- (d) The students obtained a land use map of the village produced in 1970. Describe how they could use the map and carry out fieldwork to show changes to the village between 1970 and 2011.

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.....

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.....

.....[3]

[Total: 30 marks]

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