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2217/22

May/June 2013

2 hours 15 minutes

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 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.

The Insert contains Photograph A for Question 5, Figs 7, 8, 9, 10 and 12 and Table 3 for Question 7 and Photographs B and C, Fig. 14 and Tables 6 and 7 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.

For Examiner's Use	
Section A	
Q1	
Q2	
Q3	
Q4	
Q5	
Q6	
Section B	
Q7	
Q8	
Total	

This document consists of **22** printed pages, **2** blank pages and **1** Insert.

Section A

Answer **all** questions in this section.

For
Examiner's
Use

- 1** The 1:50 000 map is of King Peak, Zimbabwe.

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

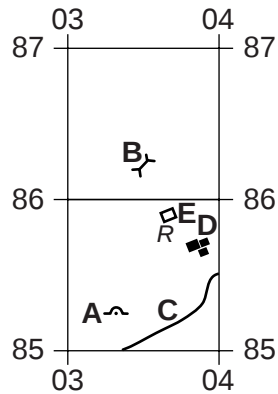


Fig. 1

- (i)** Identify the feature at **A**.
.....[1]
- (ii)** Identify the feature at **B**.
.....[1]
- (iii)** What type of road is at **C**?
.....[1]
- (iv)** Identify the features at **D**.
.....[1]
- (v)** Identify the feature at **E**.
.....[1]
- (vi)** On Fig. 1, draw the 1160 m contour line. [2]

- (b) (i) What is the height above sea level of the highest point of King Peak (979827)?

.....[1]

- (ii) Give the distance, and the bearing from grid north, of the trigonometrical station at Mavura (017818) from the trigonometrical station at King Peak.

Distance metres

Bearing [2]

- (c) Fig. 2 is a cross-section along northing 84 from 930840 to 960840.

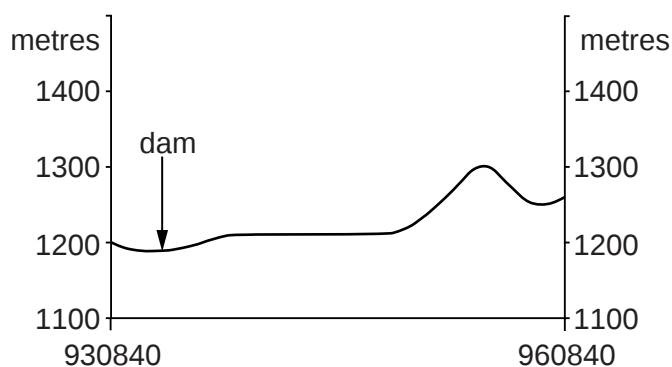


Fig. 2

Label on Fig. 2:

- the position of the quarry;
- the position of the power line.

[2]

A 3x3 grid of points. The horizontal axis is labeled with 96, 97, and 98 at the top and bottom. The vertical axis is labeled with 86, 85, and 84 on the left and right. The grid consists of three horizontal lines and three vertical lines, creating a 3x3 array of squares. The points are located at the intersections of these lines.

(i) Describe the relief and drainage of this area.

[5]

.....[2]

.....[1]

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2 Study Table 1, which shows the services provided by six villages.

For
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Table 1
Services provided by six villages

Village	Population	Post office	Shop	Place of worship	Village hall	Doctor	Pre-school	Primary school	Secondary school
Barton	4187	✓	✓	✓	✓	✓	✓	✓	✓
Newborough	1428	✗	✗	✓	✗	✗	✗	✓	✗
Bromley	1367	✓	✓	✓	✓	✓	✓	✓	✗
Yoxall	1300	✓	✓	✓	✓	✓	✗	✓	✗
Tatenhill	1216	✗	✗	✓	✓	✗	✗	✗	✗
Anslow	1209	✗	✗	✓	✓	✗	✗	✓	✗

Key

- ✓ service present
✗ service not present

(a) (i) What is the population of Yoxall?

.....[1]

(ii) Which **two** villages have the largest number of services?

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

(iii) Which service is found in all of the villages?

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

(iv) Which is the highest order service shown in Table 1?

.....[1]

(b) (i) Which village has fewer services than would be expected for its size of population?

.....[1]

(ii) Suggest why a village may have fewer services than would be expected for its size of population.

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

[Total: 8 marks]

3 Study Fig. 4, which shows the most dangerous volcanic eruptions of the last 500 years.

For
Examiner's
Use

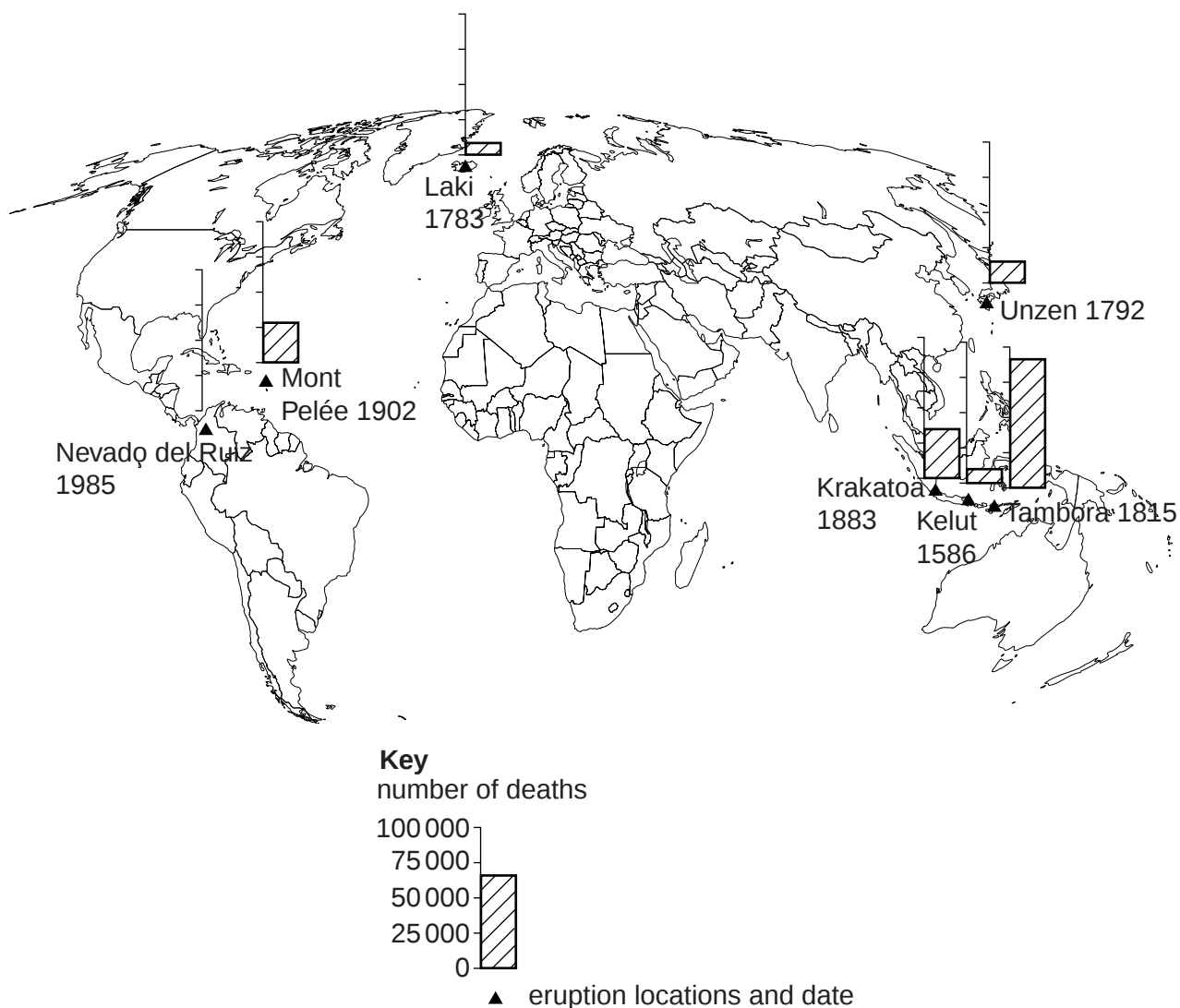


Fig. 4

(a) (i) Complete Fig. 4 to show 25 000 deaths from the 1985 eruption of Nevado del Ruiz. [1]

(ii) Which eruption caused the most deaths?

.....[1]

(iii) Which eruption was the most recent?

.....[1]

(b) State **two** volcanic hazards that could cause death.

1

2[2]

- (c) Suggest why many of the deaths from the 1783 Laki eruption were due to starvation.

For
Examiner's
Use

.....

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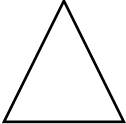
.....[3]

[Total: 8 marks]

- 4 Cote d'Ivoire and Madagascar are two countries in Africa which are affected by soil erosion. Study Table 2A, which shows rates of soil erosion in Cote d'Ivoire.

For
Examiner's
Use

Table 2A

Landscape	Soil erosion tonnes/hectare/year
Forested slopes	0.03 ▲
	90 
	138 

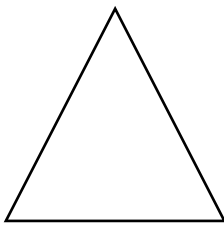
- (a) (i) Complete Table 2A by inserting the correct landscapes in the boxes provided:

- bare slopes;
- cultivated slopes.

[1]

- (ii) Table 2B shows average soil erosion in Madagascar.

Table 2B

	Soil erosion tonnes/hectare/year
Average soil erosion in Madagascar (all landscapes)	400 

How does the average soil erosion in Madagascar compare to the rates of soil erosion in Cote d'Ivoire shown in Table 2A?

.....[1]

- (iii) The table below shows aspects of Madagascar's climate. In the table below, tick (✓) the **two** aspects of the climate which promote soil erosion. [1]

For
Examiner's
Use

Heavy rain storms	
Hot climate	
Irregular rainfall	
Moderate annual temperature range	

- (b) Study Fig. 5, which shows the effect of soil erosion on environments downstream.

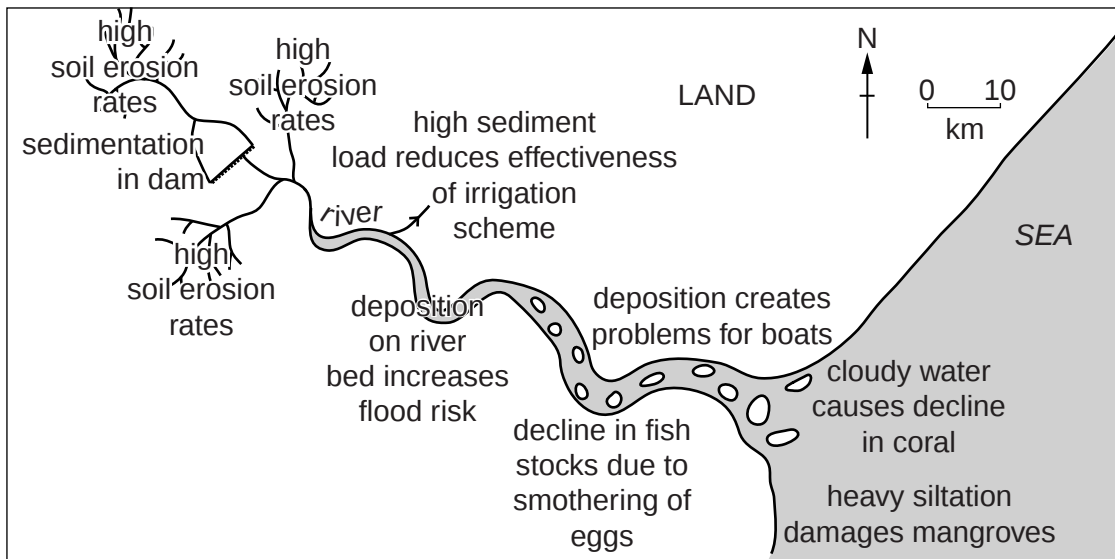


Fig. 5

- (i) How does soil erosion inland affect the environment at the coast?

.....

[2]

- (ii) Why does soil erosion increase the risk of flooding?

.....

[3]

[Total: 8 marks]

5 Study Photograph A (Insert), of Cape Town, South Africa.

(a) Labels A–H indicate eight different locations. Select **one** letter for each of the following:

Central Business District (CBD);

an area of high land;

the harbour;

an area of inland water.

[4]

(b) Give **two** types of vegetation shown on Photograph A and describe their distribution.

1

.....

.....

2

.....

.....[4]

[Total: 8 marks]

- 6 Study Fig. 6, which shows a section of coastline with port facilities for a ferry company.

For
Examiner's
Use

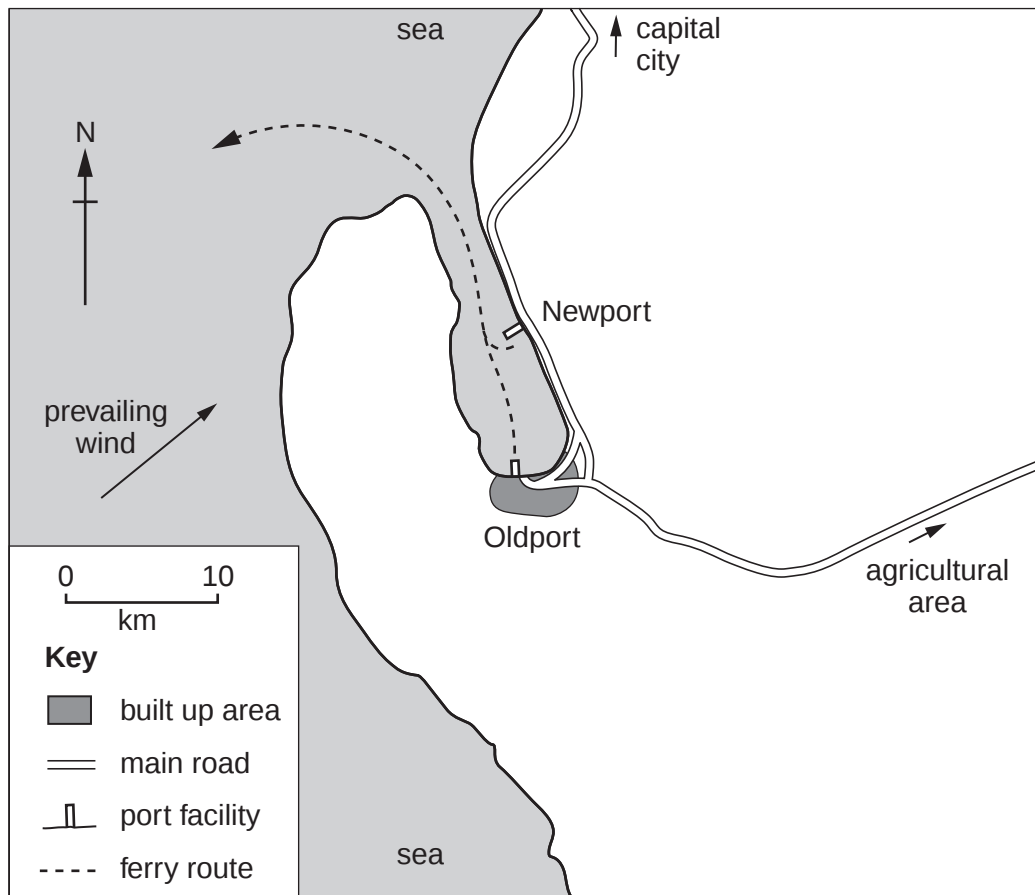


Fig. 6

The facilities at Oldport are going to be closed.

- (a) (i) Suggest **two** disadvantages of this closure for the town of Oldport.

1

.....

2

.....[2]

- (ii) Suggest **one** advantage for the town of Oldport that could result from this closure.

.....

.....[1]

- (b) (i) New port facilities are to be built at Newport. Use map evidence to explain why Newport is a better location.

.....

.....

.....

.....[2]

- (ii) How far will a resident of Oldport have to commute for a job at Newport?

Circle the correct answer.

1 km

5 km

15 km

25 km

[1]

- (c) The facilities at Oldport will be redeveloped to provide moorings for pleasure cruisers.

Circle the correct part of each underlined section to complete the paragraph.

Example : Oldport is north / south / west of Newport.

Oldport is an ideal location for pleasure cruisers as its calm water is sheltered from the prevailing north-east / north-west / south-west winds. To encourage the tourist industry the local council should build more housing / industrial estates / leisure facilities. [2]

[Total: 8 marks]

Section B

Answer **one** question in this section.

For
Examiner's
Use

- 7 Some students decided to find out more about a river flood which had occurred in their town. First they looked up some data about the rainfall for the month in which the flood occurred.

(a) Fig. 7 (Insert) shows the daily rainfall in October 2000.

(i) On which **four** dates did most rain fall?

.....[1]

(ii) What instrument would be used to measure rainfall?

.....[1]

(iii) One student made entries in a diary on the days leading up to the river flood.

This is shown in Fig. 8 (Insert).

Explain why the river flooding occurred later than the heaviest rainfall.

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

(b) The students decided to investigate the following hypotheses:

Hypothesis 1: *The main use of buildings on the floodplain in 2000 was manufacturing.*

Hypothesis 2: *Businesses located on the floodplain were badly affected by flooding.*

To investigate **Hypothesis 1** the students searched the internet for information.

(i) Which **one** of the following is the correct description for this type of information used in fieldwork? Circle your answer below. [1]

Primary

Secondary

Tertiary

(ii) The students found two maps of the area, one from 1957 and the other from 2001. These maps are shown in Fig. 9 (Insert).

Identify **two** changes that occurred between 1957 and 2001 in the area shown by the maps.

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

- (c) The students found another map which showed the area affected by the river flood (floodplain) in 2000. This is shown in Fig. 10 (Insert).

(i) Suggest **two** reasons why many buildings have been built on the river floodplain.

1

.....

2

.....[2]

(ii) Compare the distribution of the residential and manufacturing buildings in the area affected by flooding shown on Fig. 10.

.....

.....

.....

.....

.....[2]

(iii) Table 3 (Insert) shows the different uses of the buildings which were located on the floodplain in 2000. Use the data in Table 3 to complete the pie graph, Fig. 11 below. [2]

Uses of buildings on the floodplain in 2000

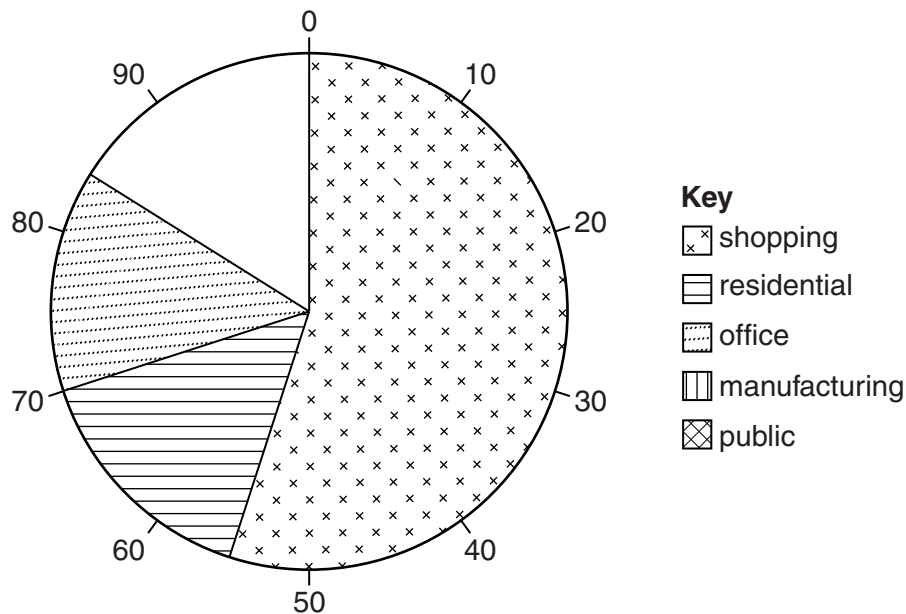


Fig. 11

- (iv) What conclusion would the students make about **Hypothesis 1: The main use of buildings on the floodplain in 2000 was manufacturing?**

Support your decision with evidence from Table 3 and Fig. 11.

.....

.....

.....

.....

.....

.....[3]

- (d) To investigate **Hypothesis 2: Businesses located on the floodplain were badly affected by flooding**, the students used a questionnaire with businesses which had been flooded.

The questionnaire is shown in Fig. 12 (Insert).

- (i) The results of Question 1 from the questionnaire are shown in Table 4 below.

Table 4

Answers to Question 1:
Were you given any warning that the river might flood your business?

Answer	Number of businesses
Yes	15
No	95

Plot this information on the divided bar graph below. Include a scale on your graph.

--	--	--	--	--	--	--	--	--	--	--

[2]

(ii) The results of Question 2 in the questionnaire are shown in Table 5 below.

Table 5

Answers to Question 2:
How was your business affected by river flooding in October 2000?

Effects of the river flood	Number of responses
Loss of customers	101
Temporary closure of the building and re-location	27
Expense of repairing the building	99
Destruction of stock and equipment	64
Increased cost of insurance	110

Use this information to complete the graph, Fig. 13 below.

[1]

Effects of the river flood in October 2000

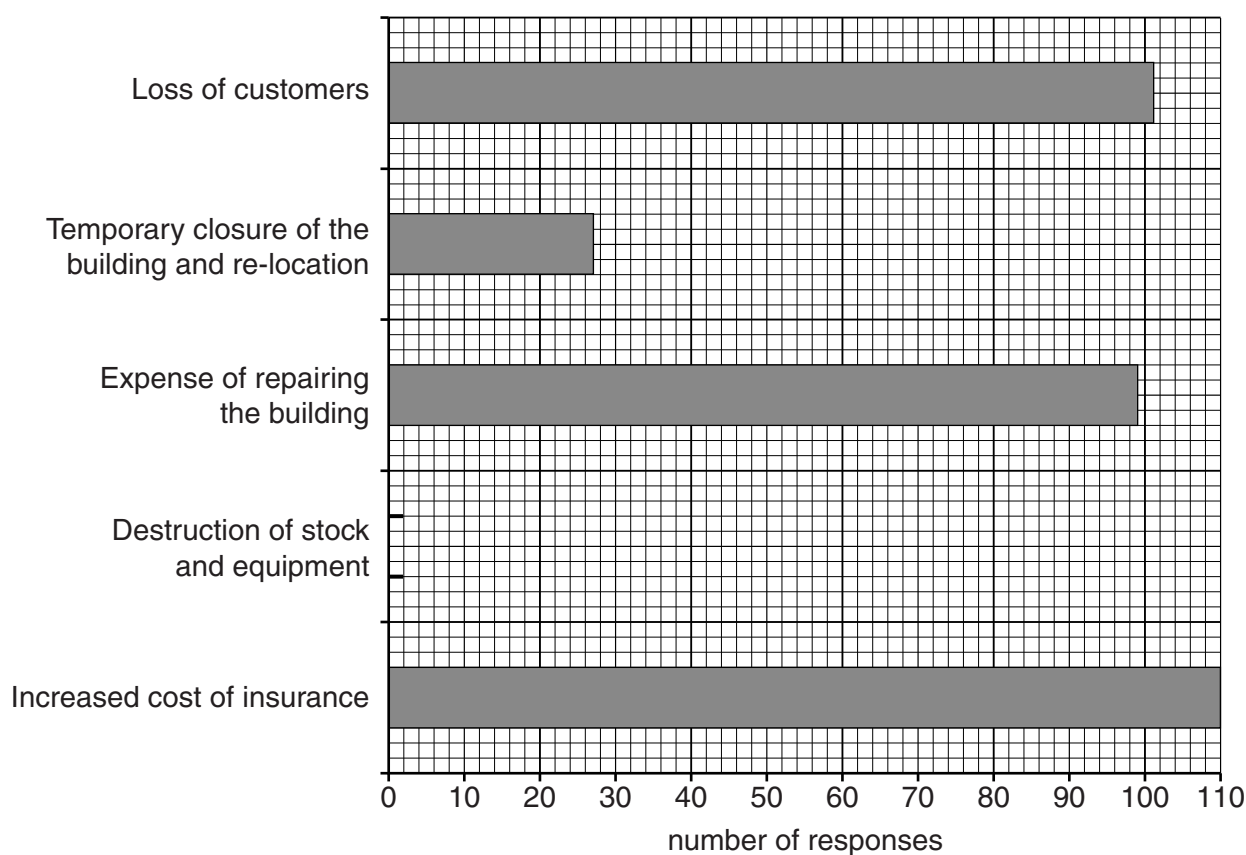


Fig. 13

- (iii) The students decided that **Hypothesis 2: Businesses located on the floodplain were badly affected by flooding** was correct. Use the results from Questions 1 and 2 in the questionnaire to support their conclusion.

For
Examiner's
Use

.....

.....

.....

.....

.....

.....[3]

- (e) Table 3 (Insert) shows that only 20 residential properties were affected by flooding. In some countries, however, many thousands of people live on river floodplains.

Give **two** opportunities and **two** problems of living on a floodplain.

Opportunities

1

.....

2

.....

Problems

1

.....

2

.....[4]

(f) What can be done to prevent further flooding on a river floodplain?

For
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Use

.....

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.....

.....

.....

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.....

.....

.....[4]

[Total: 30 marks]

- 8 Students decided to investigate the effects of tourism in their local area. The location which they chose was a hilltop with a tower. This location is shown in Fig. 14 (Insert) and the tower is shown in Photograph B (Insert).

(a) The hilltop and tower is a popular tourist site.

(i) Suggest why this location is a popular tourist site.

.....[1]

(ii) Which **one** of the following buildings is most likely to be located close to this tourist site? Circle your answer below. [1]

hospital factory cafe shopping mall school

(b) The students decided to investigate the following hypotheses:

Hypothesis 1: *The number of people walking on the paths will increase towards the tower.*

Hypothesis 2: *Footpath erosion caused by trampling will increase towards the tower.*

To investigate **Hypothesis 1** the students did a pedestrian count at different points along two of the paths which lead to the tower.

(i) Describe how they would organise and carry out the pedestrian count.

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

(ii) The students did the pedestrian count on two different days. Their results are shown in Table 6 (Insert).

Suggest **two** reasons why the students counted more people on the Sunday.

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

- (c) The students plotted the results of their pedestrian count for Sunday on a graph, shown in Fig. 15 below.

For
Examiner's
Use

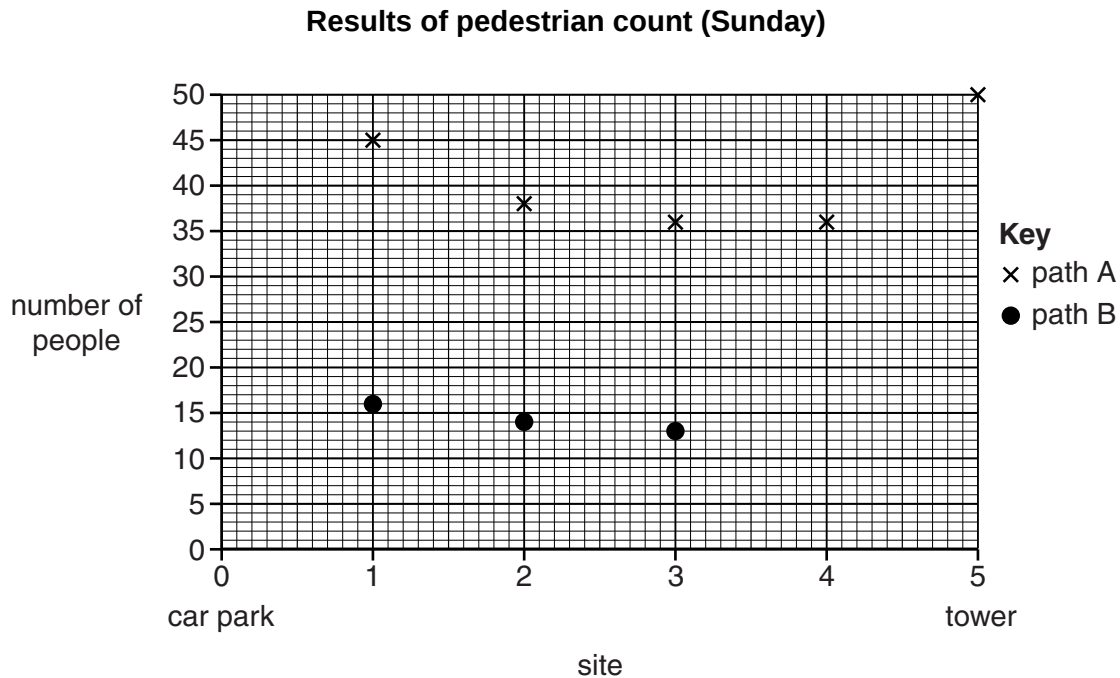


Fig. 15

- (i) Complete Fig. 15 by plotting the results for sites 4 and 5 on path B. [2]
- (ii) The students partially agreed with **Hypothesis 1**: *The number of people walking on the paths will increase towards the tower*. Support their decision with evidence from Fig. 15 **only**.

.....

.....

.....

.....

.....

.....[3]

- (iii) Suggest **two** reasons for the results shown in Fig. 15.

1

.....

2

.....[2]

- (d) To investigate **Hypothesis 2: Footpath erosion caused by trampling will increase towards the tower**, the students estimated the percentage of vegetation cover and bare soil at each site. They did this by using a quadrat, shown in Photograph C (Insert).

- (i) Describe how the students would have carried out this investigation.

.....

.....

.....

.....

.....

.....[3]

- (ii) The students used their results shown in Table 7 (Insert) to draw graphs to show the percentage of vegetation cover and bare soil at each sampling site. These are shown in Fig. 16 below.

Use the results to complete Fig. 16 for sites 4 and 5 on path B.

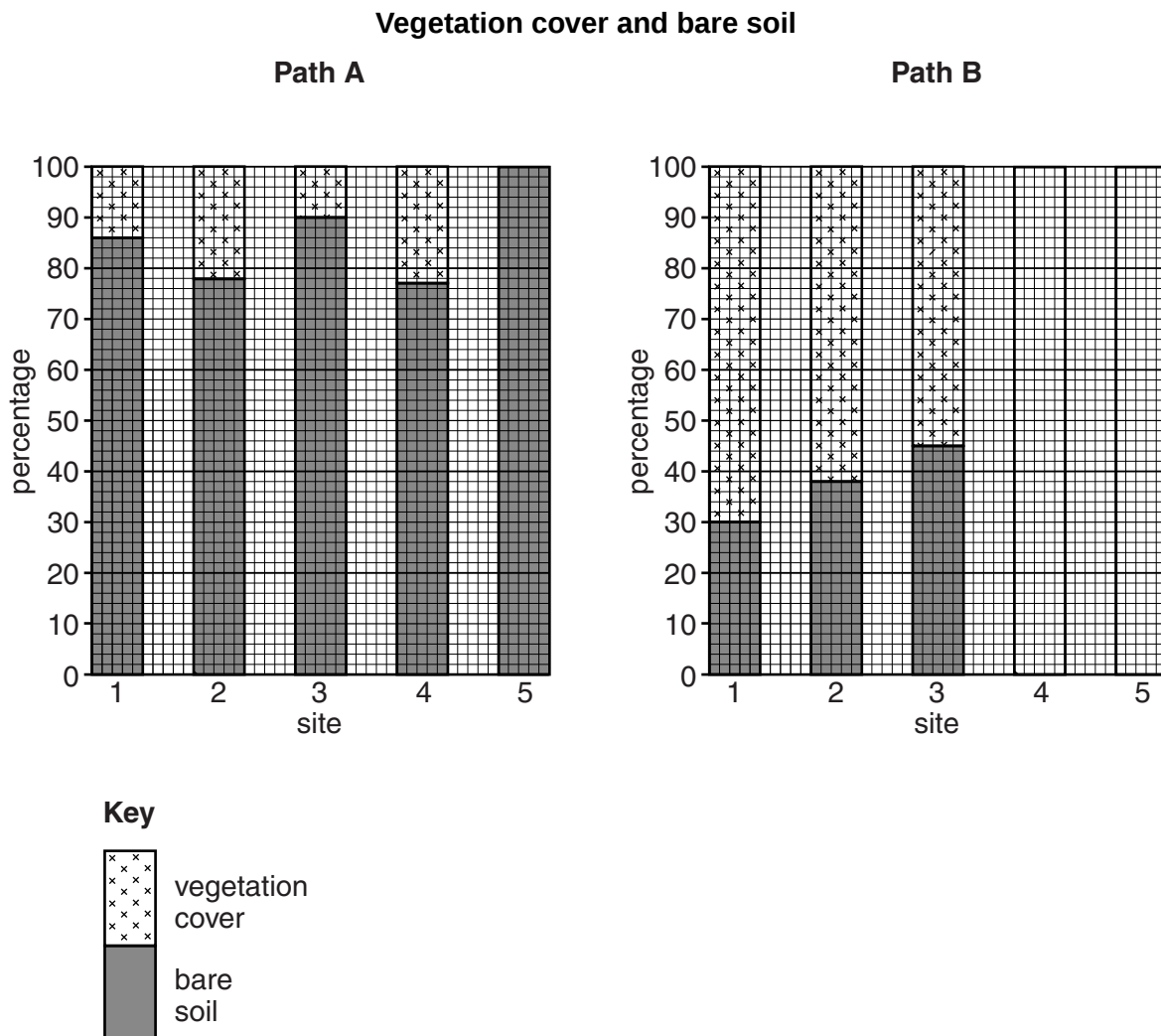


Fig. 16

[2]

- (iii) What conclusion would the students make about **Hypothesis 2: Footpath erosion caused by trampling will increase towards the tower?**

Consider your conclusion for each path separately and support your answer with data from Fig. 16 and Table 7.

Path A

.....

.....

.....

Path B

.....

.....

.....[4]

- (e) Suggest **three** ways that the students could have improved their investigation into both hypotheses. Look again at Fig. 14 (Insert) to help you to answer.

1

.....

2

.....

3

.....[3]

- (f) To extend their fieldwork the students decided to look for evidence of management strategies which were being used to protect the area from the impact of tourism.

Suggest **three** pieces of evidence that they might have found.

1

.....

2

.....

3

.....[3]

[Total: 30 marks]

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Copyright Acknowledgements:

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Map Extract © Government of Zimbabwe.
Question 1 Fig. 10 © www.geography.org.uk/download.GA_uckfield_data_flood_map; 2000.
Question 2 Photograph B © www.stonemole.wordpress.org; 21 February 2009.

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