



EXAMINATIONS COUNCIL OF SWAZILAND
Swaziland General Certificate of Secondary Education

CANDIDATE
NAME

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CENTRE
NUMBER

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CANDIDATE
NUMBER

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GEOGRAPHY

6890/02

Paper 2 Geographical Skills

October/November 2018

2 hours 15 minutes

Additional Materials:

Ruler
Protractor
Plain paper
Calculator
1:50 000 survey map extract 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 soft pencils for any diagrams, graphs, calculations, tables or rough working.

SECTION A

Answer **all** questions.

SECTION B

Answer **one** question.

Insert contains Photograph A for Question 3, Photograph B for Question 4.
Figure 8 for Question 7 and Figure 10 for Question 8.

The number of marks is given in brackets [] at the end of each question
or part question.

For Examiner's Use

Section A

Question 1

Question 2

Question 3

Question 4

Question 5

Question 6

Section B

Either
Question 7

Or
Question 8

Total

This document consists of **25** printed pages **3** blank pages and **4** insert pages.

SECTION A

ANSWER **ALL** QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED.

- 1** The map extract is part of Shamva (Zimbabwe). The scale is 1:50 000.

Fig. 1 shows the positions of some feature in part of the map extract.

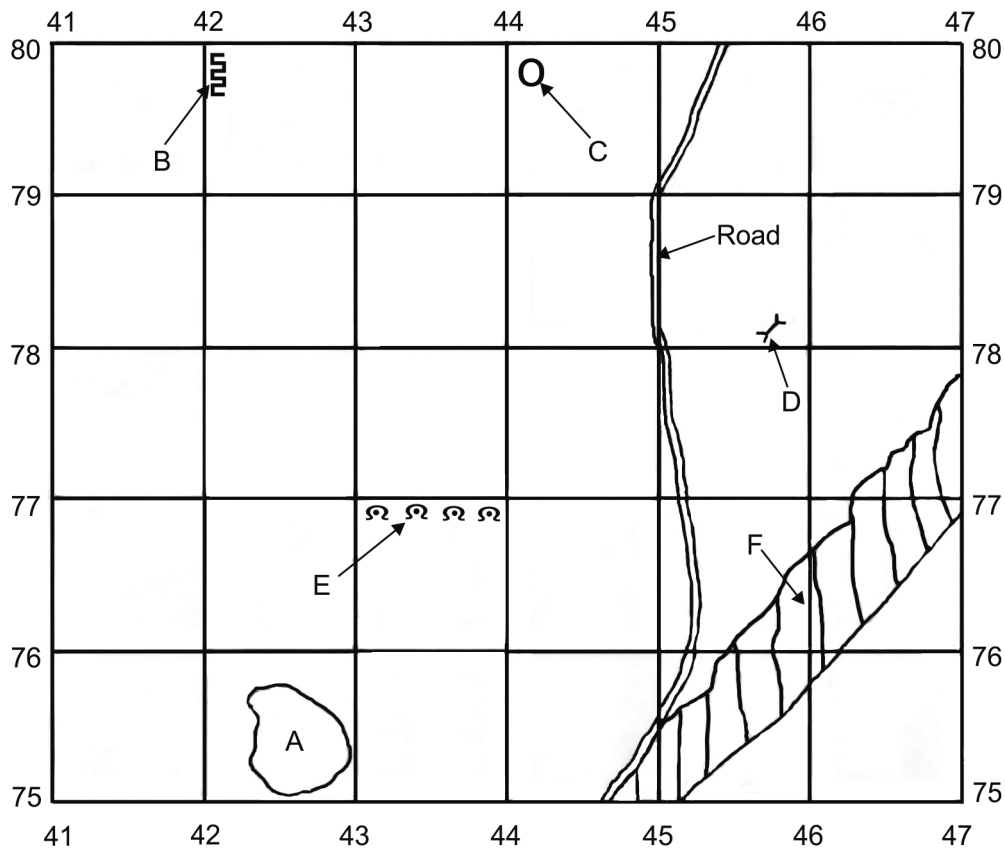


Fig. 1

- (a)** Using the map extract, identify the following features shown in Fig. 1:

- (i)** natural feature **A** (4275);

..... [1]

- (ii)** the economic activity shown at **B** (4279);

..... [1]

- (iii)** man-made feature at **C** (4479);

..... [1]

- (iv)** feature **D** (4578);

..... [1]

(v) man-made structures at **E** (4376).

..... [1]

(b) Describe the gradient in the area marked **F** on Fig. 1.

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

(c) (i) What is the highest altitude of Mount Masimbe near the south of the map extract?

..... [1]

(ii) Give the six-figure grid reference of this highest altitude.

..... [1]

(d) Measure the distance in kilometres along the railway line from the end of the railway line near Shamva station to the bridge over Pote River.

..... [1]

(e) In which general direction is the Mazowe River flowing?

..... [1]

(f) State any **two** agricultural activities along Mazowe River.

1

2 [2]

(g) List **four** services provided in the town of Shamva.

1

2

3

4 [4]

(h) Give **two** reasons why many rural settlements are found on the south-eastern part of the map extract.

1

.....

2

..... [2]

- (i) Identify the river drainage patterns shown on Tsamvi Hill (4884) and on the eastern slopes of Masimbe mountain.

Tsamvi

Masimbe [2]

[Total: 20 marks]

- 2 (a) Study Fig. 2, which shows simple folds.

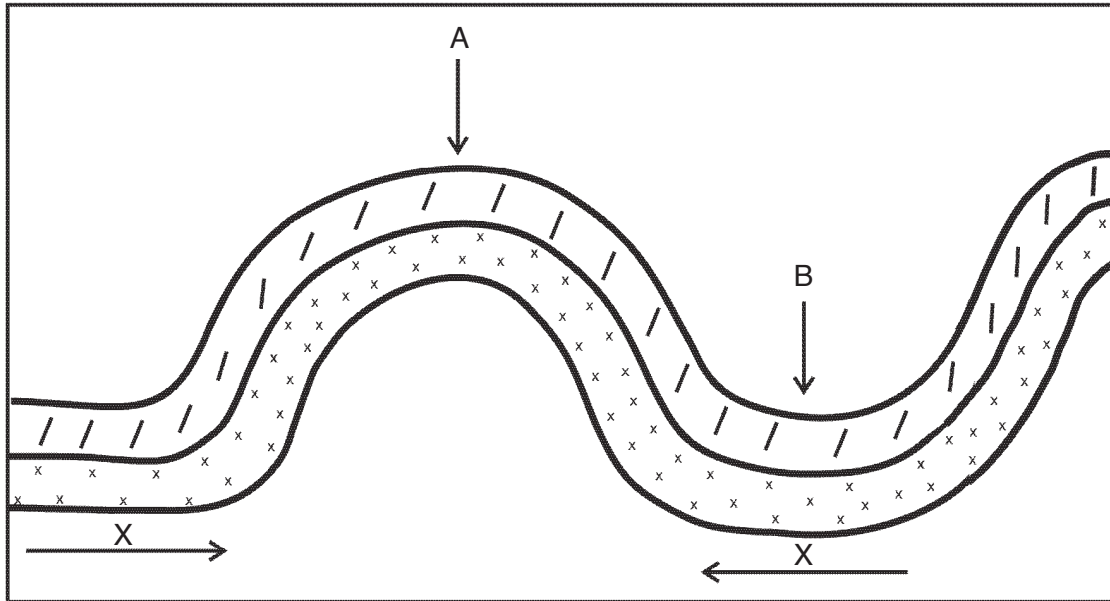


Fig. 2

- (i) Define *folding*.

..... [1]

- (ii) Name the type of force labelled **X** in Fig. 2.

..... [1]

- (iii) Identify the features labelled **A** and **B** in Fig. 2.

A

B [2]

(b) Study Fig. 3, which shows the distribution of the world's fold mountains.

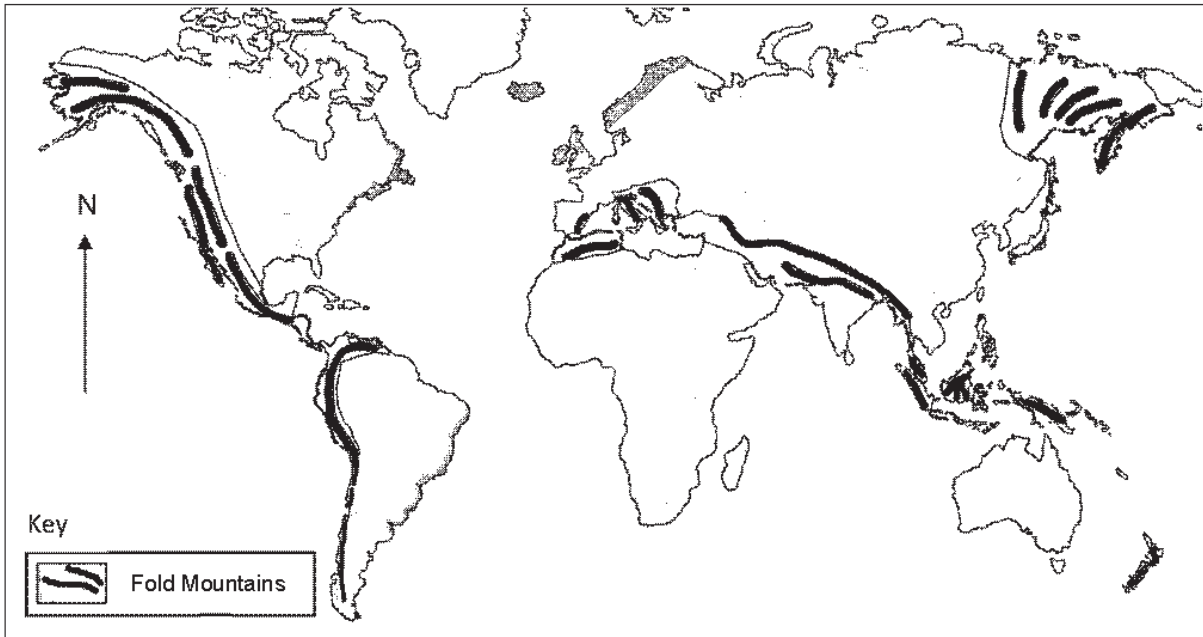


Fig. 3

(i) Describe the distribution of fold mountains as shown in Fig. 3.

.....

.....

.....

..... [2]

(ii) Name **two** effects of fold mountains on human activity.

1

.....

2

..... [2]

[Total: 8 marks]

3 (a) Photograph A (Insert) shows a type of power generation.

(i) Name the source of energy used in this type of power generation.

..... [1]

(ii) Identify parts **A** and **B** shown on Photograph A.

A

B [2]

(b) Using Photograph A, describe **two** factors which favour the location of this type of power station.

1

.....

2

..... [2]

(c) Suggest **three** disadvantages of generating power using the method shown in Photograph A.

1

.....

2

.....

3

..... [3]

[Total: 8 marks]

4 (a) Photograph B (Insert) shows a type of farming.

(i) Name the type of farming shown on Photograph B.

..... [1]

(ii) The type of farming shown in Photograph B operates as a system with inputs, processes and outputs as shown in Fig. 4



Fig. 4

List **two** outputs from the type of farming shown on Photograph B.

1

2 [2]

(b) Describe **two** ways by which the type of farming shown in Photograph B can be improved for better quality of the outputs.

1

.....

2

..... [2]

(c) Suggest **three** negative impacts of the type of farming shown in Photograph B on the environment.

1

.....

2

.....

3

..... [3]

[Total: 8 marks]

5 (a) Fig. 5 shows the demographic transition model.

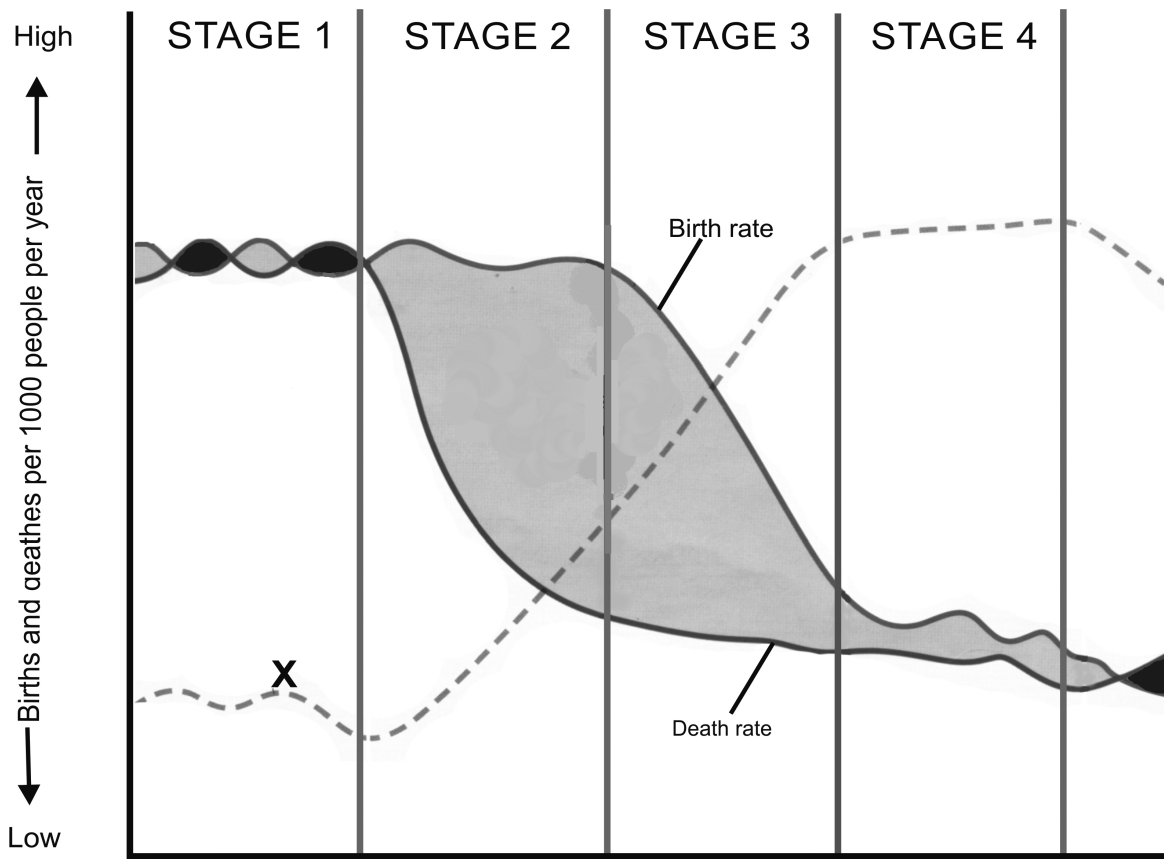


Fig. 5

(i) What does line X in Fig. 5 represent?

..... [1]

(ii) In which stage is there a natural decrease in the population?

..... [1]

(iii) Describe **three** changes shown in stage 3.

1

.....

2

.....

3

..... [3]

(b) Suggest **three** reasons for the decrease of death rate in stage 2.

1

.....

2

.....

3

..... [3]

[Total: 8 marks]

- 6 Table 1 shows mean monthly temperatures and rainfall of an area in one of the climatic regions.

Table 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°C	14	14	15	16	17	20	22	21	16	17	15	14
mm	10	15	19	20	22	30	30	29	09	04	02	10

- (a) (i) In which hemisphere is the area represented by Table 1 found?

..... [1]

- (ii) Give a reason for your answer to a (i)?

..... [1]

- (iii) Using the information in Table 1 calculate the annual temperature range.

..... [1]

- (iv) Use the information in Table 1 to complete Fig. 6 by adding temperature and rainfall for May. [2]

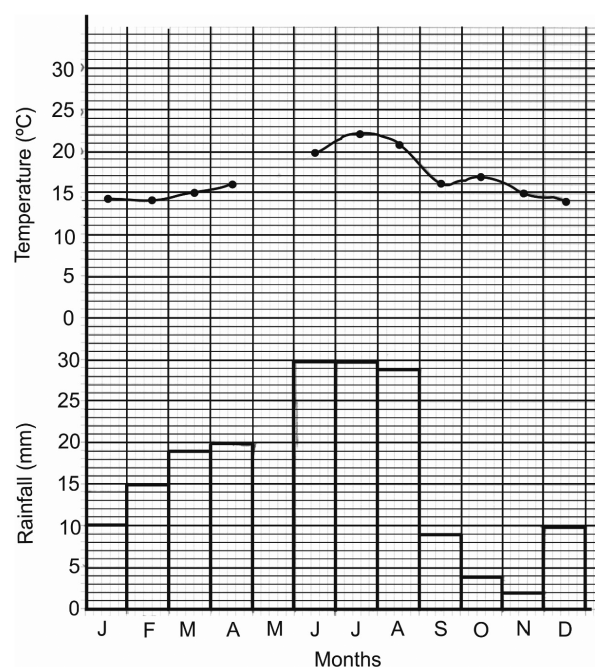


Fig. 6

(b) Suggest three types of vegetation associated with this climatic region.

.....

.....

.....

.....

.....

..... [3]

[Total: 8 marks]

SECTION B

CHOOSE **EITHER** QUESTION 7 **OR** QUESTION 8.

- 7 Some students were studying the characteristics of a river. The students wanted to investigate possible reasons for changes in velocity across a meander in the Great Usuthu river. The students agreed to test the following hypotheses:

Hypothesis 1: *the surface velocity across a river meander varies.*

Hypothesis 2: *velocity is greater on the surface and decreases as the depth of the channel increases.*

- (a) Before setting out for the investigation the teacher suggested that they should first carry out a pilot survey in a local stream next to the school.

- (i) Suggest **two** safety measures the teacher could give to the students.

1

.....

2

..... [2]

- (ii) In preparation the teacher with a group of five students visited a local stream to do a pilot survey. Give **three** advantages of doing a pilot survey.

1

.....

2

.....

3

..... [3]

(b) To investigate **Hypothesis 1: the surface velocity across a river meander varies**, the students made some measurements on the meander.

- (i) Describe how the students measured velocity using: a cork, a tape measure, a stop watch and a ranging pole.

tape measure

.....

ranging poles

.....

cork

.....

stopwatch

..... [4]

The students then measured the surface velocity of the river at four sample points, A, B, C, and D across the meander as shown in Fig. 7.

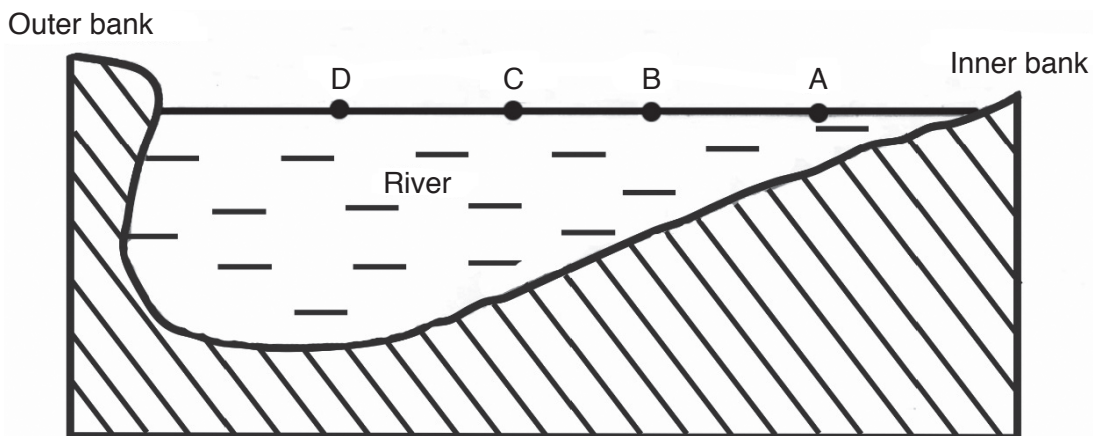


Fig. 7

The results of their measurements are shown in Table 2.

Table 2

Sample Point	Surface Velocity (cm per second)
A	20
B	40
C	60
D	73

- (ii) Write a conclusion to the investigation on **Hypothesis 1: the surface velocity across a river meander varies**. Use evidence from Fig. 7 and Table 2 to suggest how they reached their conclusion.

.....

.....

.....

..... [2]

- (c) When the students discussed how they carried out their investigation one student pointed out some limitations to the method used. One of the limitations was the use of a cork.

- (i) Give **three** problems of using a cork in measuring velocity.

1

.....

2

.....

3

..... [3]

- (ii) The teacher agreed with the students on the problems of using a cork and suggested they use another meander of the same river to improve their investigation. They then used a flow meter shown in Fig. 8 (Insert) to measure the velocity.

Describe how they used this equipment.

.....

.....

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.....

..... [3]

The students used their results obtained from the flow meter to plot velocity more accurately. The results are shown in Fig. 9.

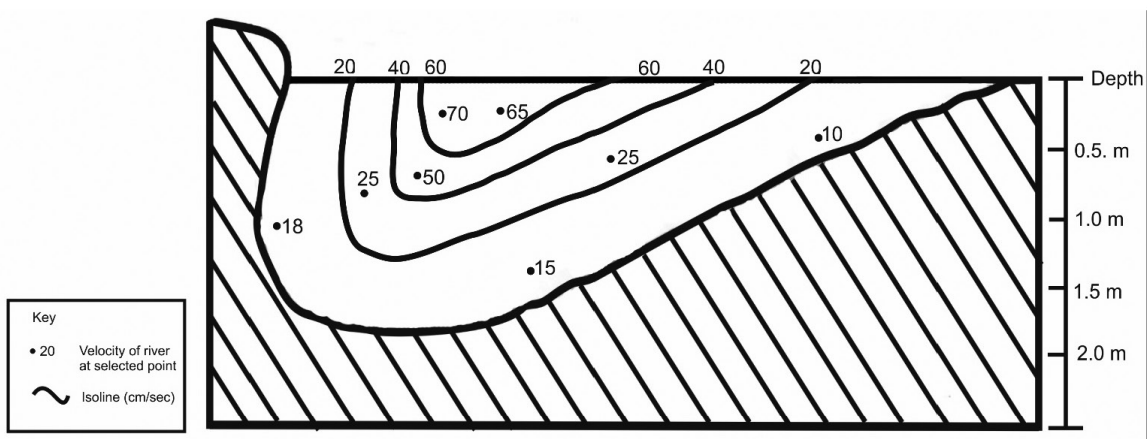


Fig. 9

- (iii) On Fig. 9, shade in the part of the river where the velocity is greater than 60 cm/sec.

.....

..... [1]

The students measured the depth of the river at different points across the channel.

(iv) Describe a method of doing this. Refer to the equipment needed.

.....

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..... [3]

(d) (i) Use the information on Fig. 9 to decide whether you agree with **Hypothesis 2:**
velocity is greater on the surface and decreases as the depth of the channel increases.

.....

.....

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..... [3]

(ii) Explain **one** reason for the variation in velocity on the meander as shown in Fig. 9.

.....

.....

.....

..... [2]

- (e) To extend their investigation the teacher decided they compare their results from the meander with a straight stretch of the river 70 m further downstream. Suggest **two** similarities and **two** differences the students would find in the velocity of the two sections of the river.

Similarities

- 1
-
- 2
- [2]

Differences

- 1
-
- 2
- [2]

[Total 30 marks]

- 8 Students wanted to investigate some characteristics of the Central Business District (CBD) of a city in a LEDC, both in terms of pedestrian and vehicle traffic. Fig. 10 (Insert) shows the centre of the city. The students wanted to test the following hypotheses:

Hypothesis 1: *traffic flow patterns vary during the day.*

Hypothesis 2: *the number of pedestrians decreases away from the central point of the CBD.*

The students chose 2 sites **A** and **B** to do the traffic survey; these are shown on Fig. 10 (Insert). They agreed to do 4 separate counts each lasting one hour at the following times:

- 0800 – 0900
- 1100 – 1200
- 1400 – 1500
- 1700 – 1800

- (a) (i) Describe how the students would conduct a traffic survey. Refer to their planning and recording.

Planning

.....

Recording

..... [2]

- (ii) State **three** difficulties which the students might have when doing the survey.

1

.....

2

.....

3

..... [3]

(b) The results of the students' traffic survey at site **A** are shown in Table 3.

Table 3 Numbers of vehicles

Survey Time	Motorbikes	Cars/vans	Minibuses	Lorries/ buses	Total Vehicles
0800–0900	8	102	40	15	
1100–1200	6	108	27	17	158
1400–1500	4	70	30	20	124
1700–1800	2	41	20	10	73

(i) Complete Table 3 by calculating the total number of vehicles counted between 0800–0900 hrs. [1]

(ii) The students converted their vehicle counts into percentages. What percentage of the total number of vehicles between 1400–1500 hrs were minibuses.

.....

 [1]

- (iii) Use the data in Table 3 to complete the divided bar graph on Fig. 11 for the traffic survey results between 1100 and 1200 hrs. [2]

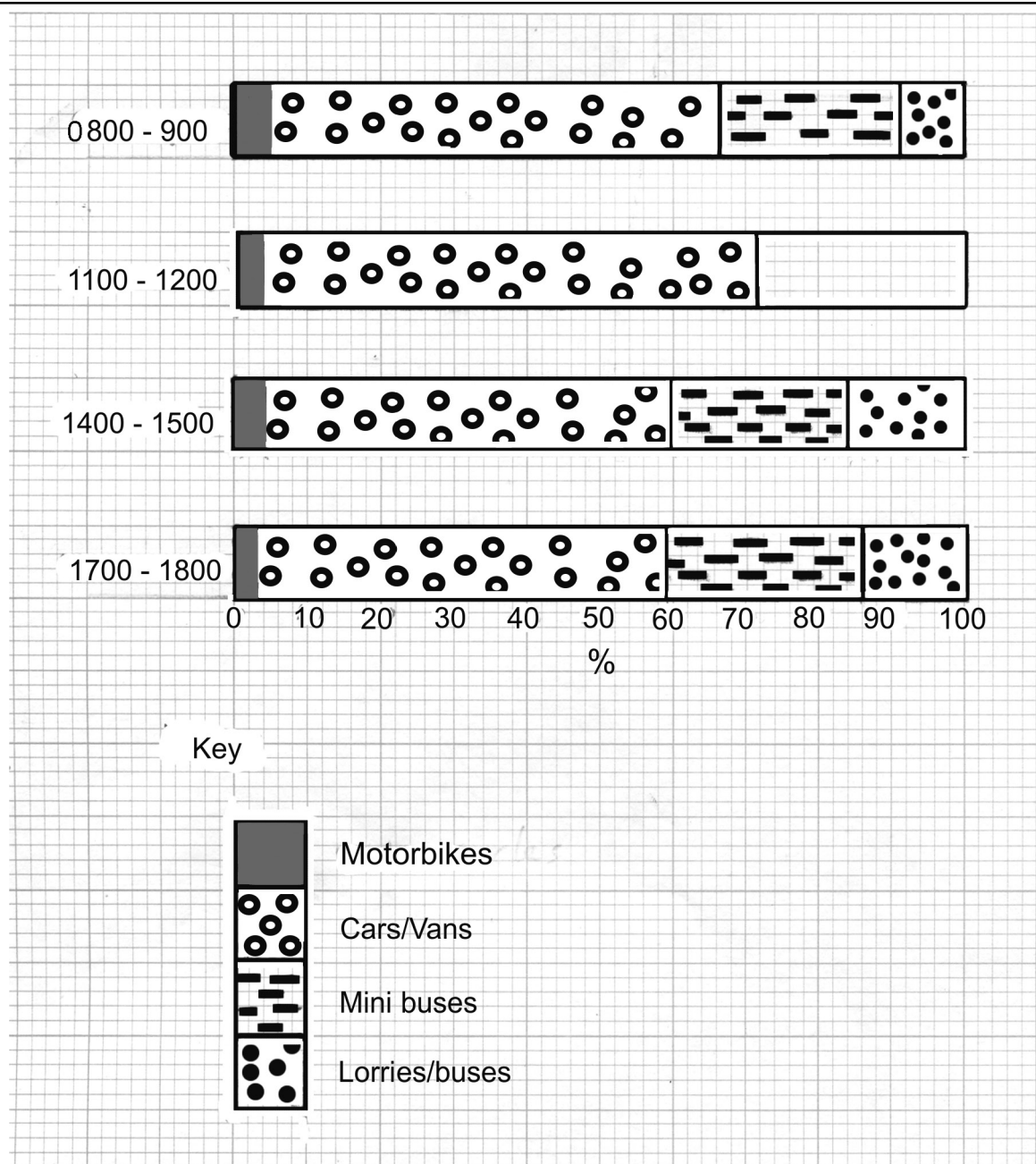


Fig. 11

- (iv) Which other type of graph would be suitable to show traffic survey results between 1100–1200 hrs?

..... [1]

- (v) Write a conclusion to the investigation on **Hypothesis 1: traffic flow patterns vary during the day**. Support your decision with evidence from Table 3 and Fig. 11.

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..... [4]

- (vi) Suggest a reason for a high volume of minibuses between 1700–1800 hrs.

.....

..... [1]

- (c) The students then investigated **Hypothesis 2: the number of pedestrians decreases away from the central point of the CBD**.

- (i) The point marked **X** on Fig. 10 (Insert) was identified as the central point of the CBD from which the students made their measurements. Give **three** characteristics which the students may have used to decide on the central point of the CBD.

1

2

3 [3]

- (ii) A copy of the recording sheets used by the students is shown in Fig. 12. Complete the recording sheet by inserting the correct total.

RECORDING SHEET	
<i>Street Name:</i>	<i>Gwamile</i>
<i>Distance from Central point:</i>	<i>200 m</i>
<i>Time of Survey:</i>	<i>0800–0900</i>
<i>Counts:</i>	
	<i>Total:</i>

Fig. 12

[1]

- (iii) Sampling points were chosen at 200 m, 400 m, and 600 m away from the central point. Name this sampling method.

.....

..... [1]

- (iv) State **one** advantage of the sampling method that was chosen by the students.

.....

..... [1]

(d) The results of the pedestrian counts are mapped with isolines in Fig. 13

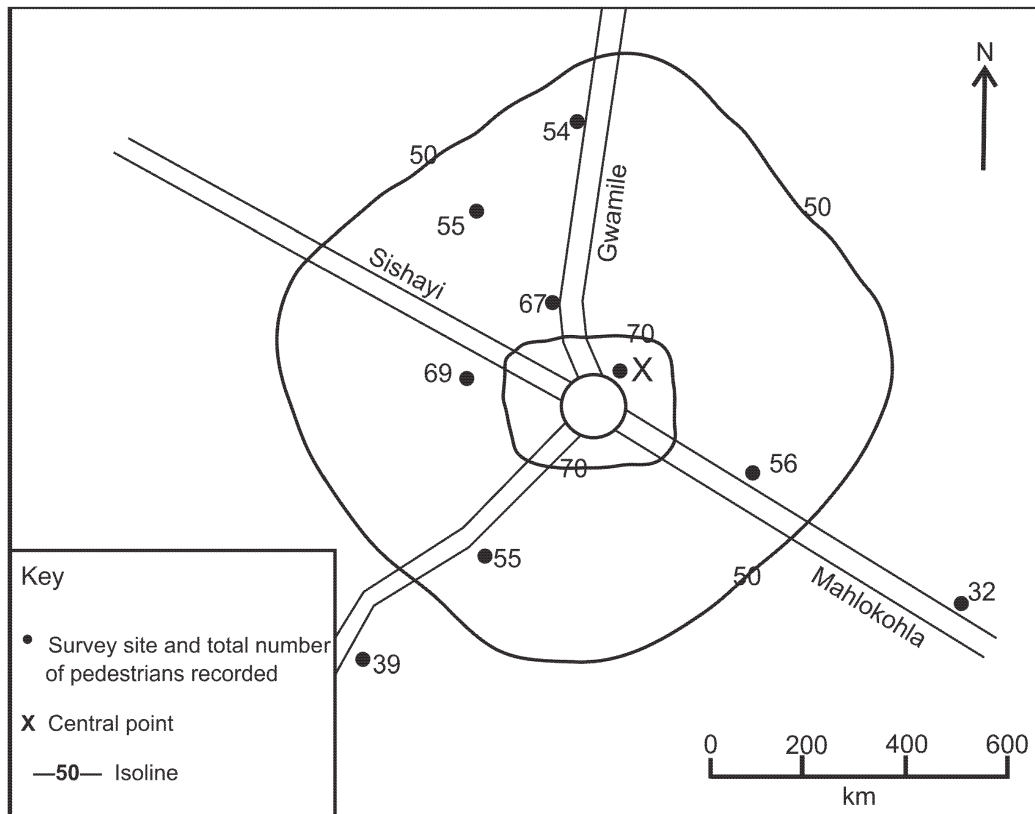


Fig. 13

- (i) On Fig. 13 draw an isoline for the value of 55 pedestrians. [1]
- (ii) On Fig. 13 shade in the area where more than 70 pedestrians were recorded. [1]
- (iii) To what extent does the information on Fig. 13 support **Hypothesis 2: The number of pedestrians decreases away from the central point of the CBD.** Support your answer with evidence from Fig. 13.

.....

.....

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.....

..... [3]

(iv) Suggest how this investigation could be improved.

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..... [4]

[Total: 30 marks]

