EXAMINATIONS COUNCIL OF ESWATINI
Eswatini General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

GEOGRAPHY **6890/02**

Paper 2 Geographical Skills **October/November 2023**

2 hours

Additional Materials: Ruler
Protractor
Plain paper
Calculator
1:50 000 survey map extract enclosed with this Question Paper

READ THESE INSTRUCTIONS FIRST

Write your name, Centre number and candidate number in the spaces provided.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams, graphs, calculations, tables or rough working.

SECTION A
Answer **all** questions.

SECTION B
Answer **all** questions.

SECTION C
Answer **one** question.

The Insert contains Fig. 4 for Question 2, Fig. 6 for Question 3 (b) and Fig. 8 for Question 4 (b).

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	
Section B	
Question 2	
Question 3	
Question 4	
Section C	
Either Question 5	
Or Question 6	
Total	

This document consists of **21** printed pages and **3** blank pages.

For Examiner's Use

SECTION A

Answer **all** questions in this section.

1 The map extract is for Rusape (Zimbabwe). The scale is 1: 50 000.

Fig. 1 shows the position of some features in the North Eastern part of the map.

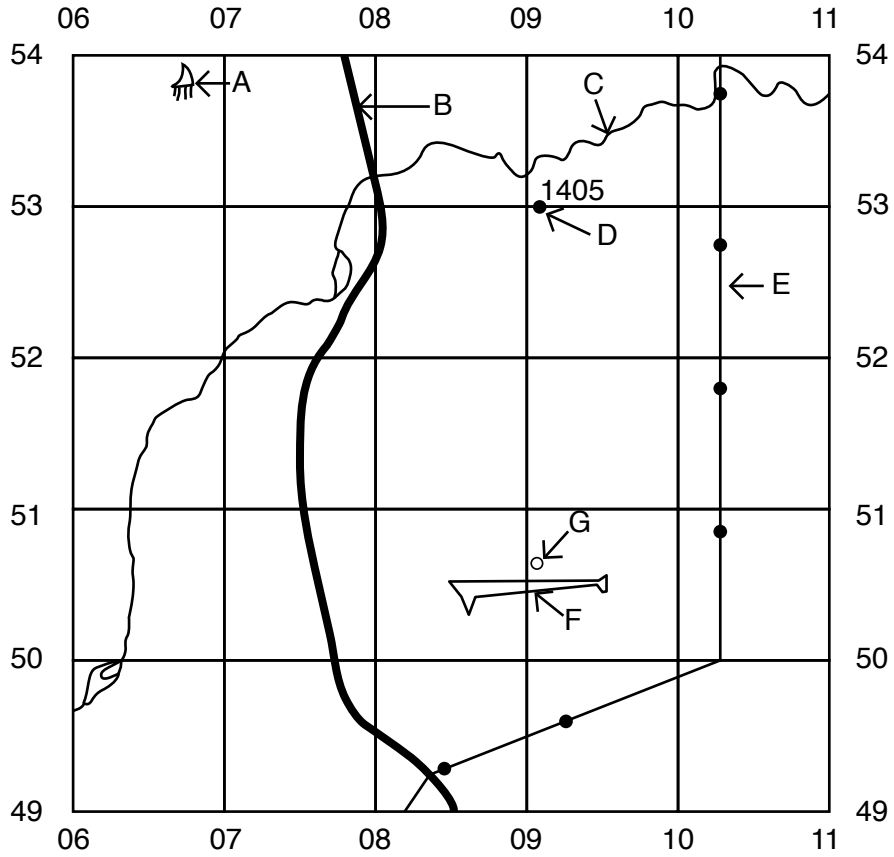

Fig. 1

(a) Identify the following features shown in Fig. 1:

(i) feature **A**;

..... [1]

(ii) the type of road **B**;

..... [1]

(iii) feature **C**;

..... [1]

(iv) relief feature **D**;

..... [1]

(v) feature **E**;

..... [1]

(vi) feature **F**;

..... [1]

(vii) source of water at **G**.

..... [1]

(b) (i) What is the general direction of flow of the Rusape river?

..... [1]

(ii) Identify any **two** physical river features found along the course of the Rusape river.

1 .....

2 ..... [2]

(c) Give the six-figure grid reference of the road bridge over the tributary of the Rusape river north east of the Chindukuru township in grid square 0347.

..... [1]

(d) Study the hill in grid square 1142 and Runyange hill in grid square 0441.

(i) What is the height of the peak of the hill in grid square 1142?

..... [1]

(ii) Measure the grid bearing from the trigonometrical station in grid square 1142 to the peak of Runyange hill in grid square 0441.

..... [1]

(iii) Study Fig. 2, which shows a cross-section drawn between the trigonometrical station in grid square 1142 and the peak/summit of Runyange hill in grid square 0441.

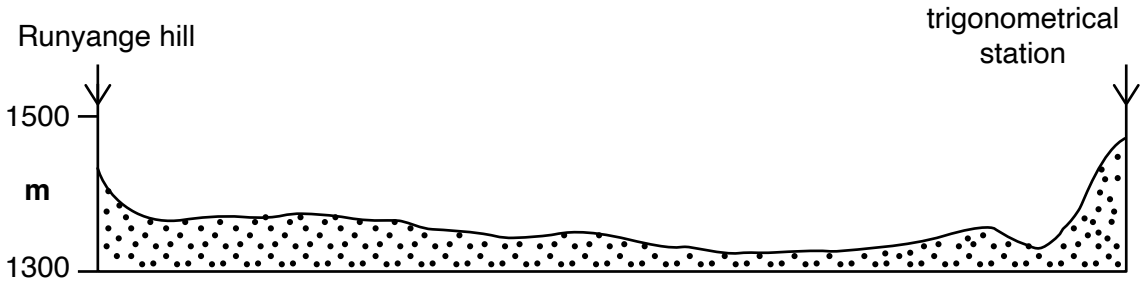

Fig. 2

On Fig. 2, using labelled arrows, mark the position of:

- the railway line
- the wide tarred road
- a river east of the wide tarred road [3]

(e) (i) Measure the distance along the gravel road from the bridge over the Mezi river in grid square 9447 to where the road crosses the 33 kV power line in grid square 9851.

.....metres [1]

(ii) The height of the bridge is at 1290 m and the point where the road crosses the 33 kV power line is at 1410 m above sea level.

Calculate the gradient along this part of the road.

.....

.....

..... [2]

(f) Name **three** services found in Rusape town.

1 .....

2 .....

3 ..... [3]

(g) (i) On Fig. 3, shade the grid square where there is least surface drainage. [1]

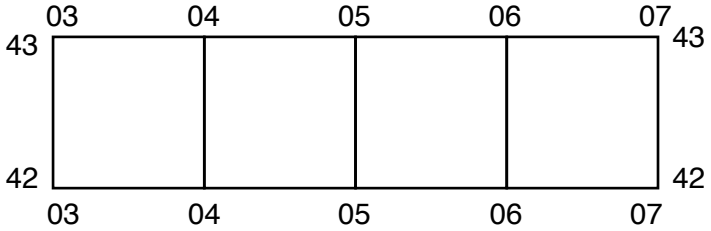

Fig. 3

(ii) Suggest **two** factors which promoted the growth of Rusape town.

1 .....

2 ..... [2]

[Total: 25 marks]

For Examiner's Use

SECTION B

Answer **all** questions in this section.

2 Study Fig. 4 (Insert), which shows a forested area and a deforested area.

(a) Define the term *deforestation*.

..... [1]

(b) Identify **three** causes of deforestation shown in Fig. 4.

1 .....

2 .....

3 ..... [3]

(c) Use Fig. 4 to describe the benefits of a forested area to the following:

soils .....

.....

water cycle .....

.....

wildlife .....

.....

rivers .....

..... [4]

[Total: 8 marks]

3 **(a)** Study Table 1, which shows renewable and non-renewable energy sources in an LEDC.

Table 1

Energy source	Percentage
wood	57%
charcoal	23%
petroleum	11%
solar	5%
hydro-electricity	4%

(i) Define a *renewable energy source*.

..... [1]

(ii) Use Table 1 to complete the pie graph in Fig. 5. [2]

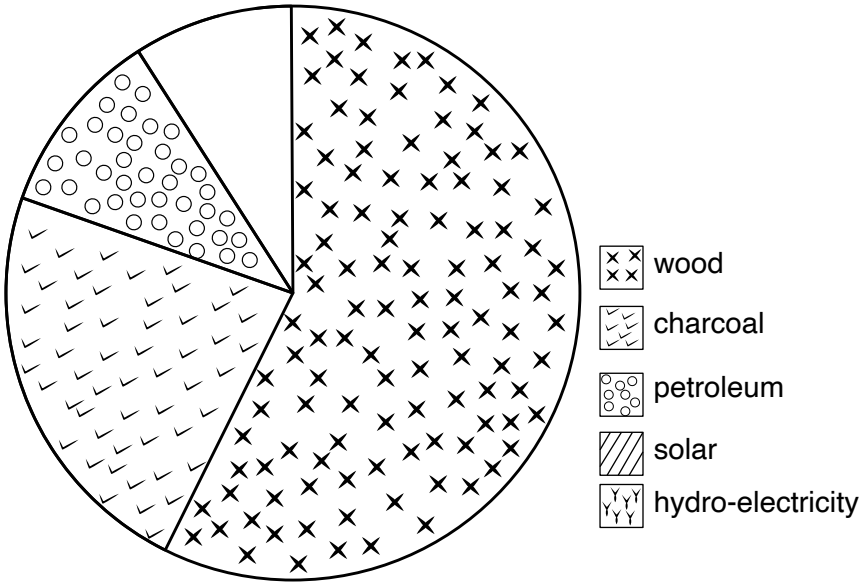

Fig. 5

[Turn over

(b) Study Fig. 6 (Insert), which shows a coal fired power station.

(i) Name the features marked **X** and **Y**.

X .....

Y ..... [2]

(ii) State **three** negative impacts of the smoke on people and the environment.

1 .....

.....

2 .....

.....

3 .....

..... [3]

[Total: 8 marks]

4 **(a)** Study Fig. 7, which shows the distribution of huts in a rural settlement.

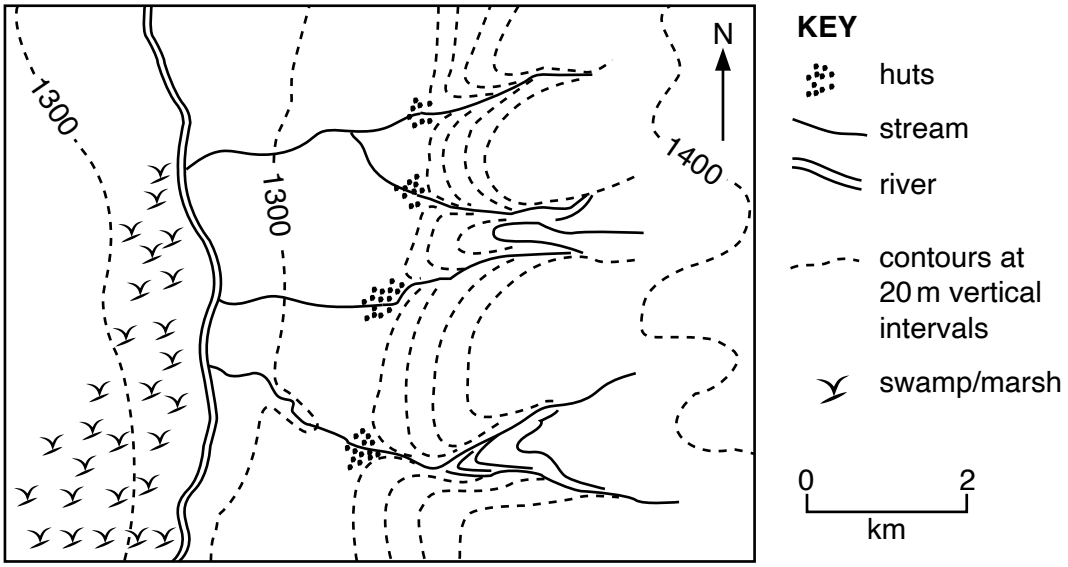

Fig. 7

(i) Name the settlement pattern shown in Fig. 7.

..... [1]

(ii) Describe the distribution of the huts shown in Fig. 7.

.....

.....

.....

..... [2]

(iii) Give **one** reason for the lack of huts in parts of the area shown in Fig. 7.

.....

..... [1]

[Turn over

(b) Study Fig. 8 (Insert), which shows the population structure of a country and its main city.

(i) What is the percentage of **males** aged 10 – 14 years for the country?

..... [1]

(ii) What is the total percentage of the 0 – 4 years age group for the city?

..... [1]

(iii) List **three** differences between the population structures of the country and its main city.

1 .....

.....

2 .....

.....

3 .....

..... [3]

[Total: 9 marks]

SECTION C

Answer **either** question 5 or question 6.

5 A group of students investigated the size of the bed load and the gradient along part of the Komati river.

The students decided to test the following hypotheses:

Hypothesis 1: *The size of the bed load decreases downstream.*

Hypothesis 2: *The gradient of the river decreases downstream.*

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

(i) List **two** advantages of doing a pilot survey.

1 .....

.....

2 .....

..... [2]

(ii) Suggest **two** precautions to be considered by the students when choosing the stream for the investigation.

1 .....

.....

2 .....

..... [2]

(b) To investigate **Hypothesis 1:** *The size of the bed load decreases downstream*, the students chose **three** sites (A, B and C) at 100 m intervals. Site A is upstream and Site C is downstream. At each site they selected and measured the size of six pebbles. The results of the investigation are shown in Table 2.

Table 2

	Size of bed load		
Pebble	**Site A** (mm)	**Site B** (mm)	**Site C** (mm)
1	20	10	4
2	22	22	6
3	24	16	8
4	23	15	7
5	25	18	9
6	21	17	5

(i) Suggest the best sampling method to select pebbles at each site.

..... [1]

(ii) Use the information from Table 2 to complete the bar graph for Site A on Fig. 9.

[3]

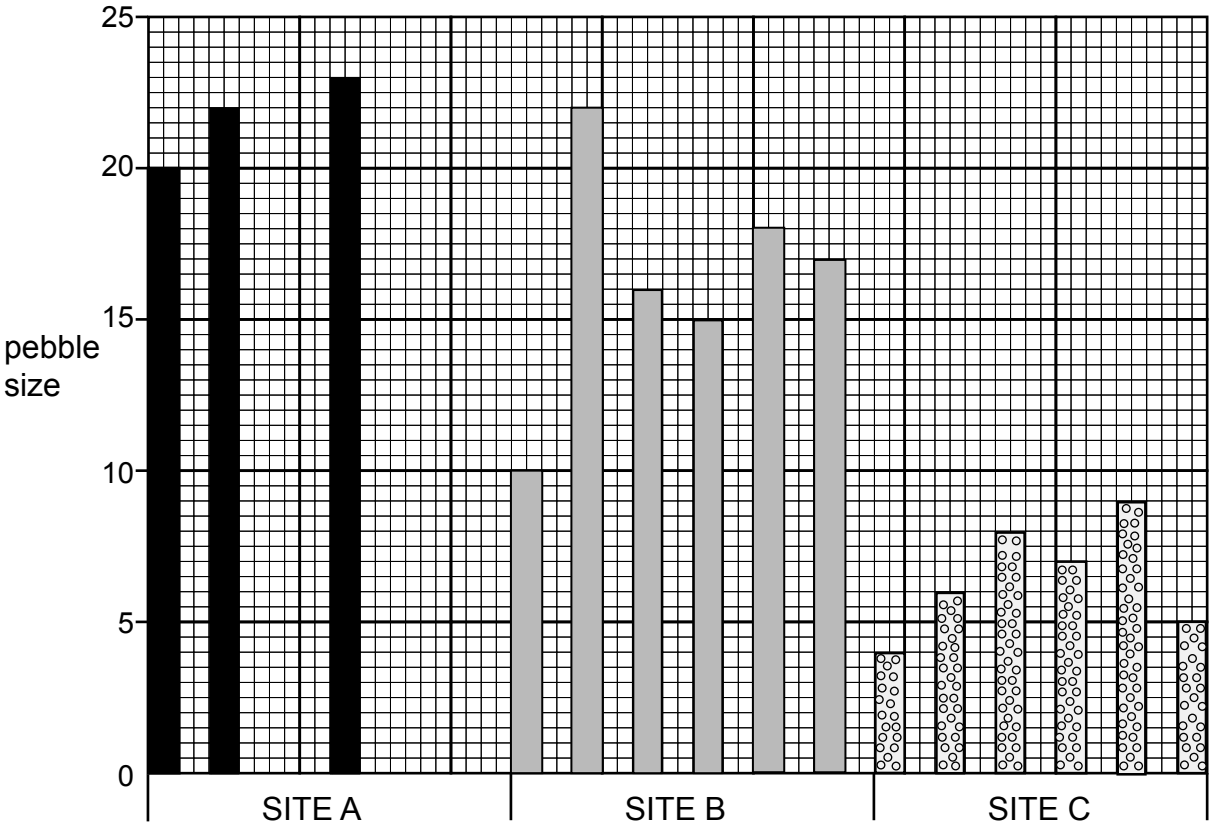

Fig. 9

(iii) Describe how the students could have measured the size of the bed load.

.....

.....

.....

.....

.....

.....

.....

..... [4]

(c) Write a conclusion to the investigation on **Hypothesis 1:** *The size of the bed load decreases downstream*. Use evidence from Table 2 and Fig. 9.

.....

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.....

.....

..... [3]

(d) The students further investigated **Hypothesis 2:** *The gradient of the river decreases downstream*. Fig. 10 shows how the students measured the gradient at each of the three sites, A, B and C.

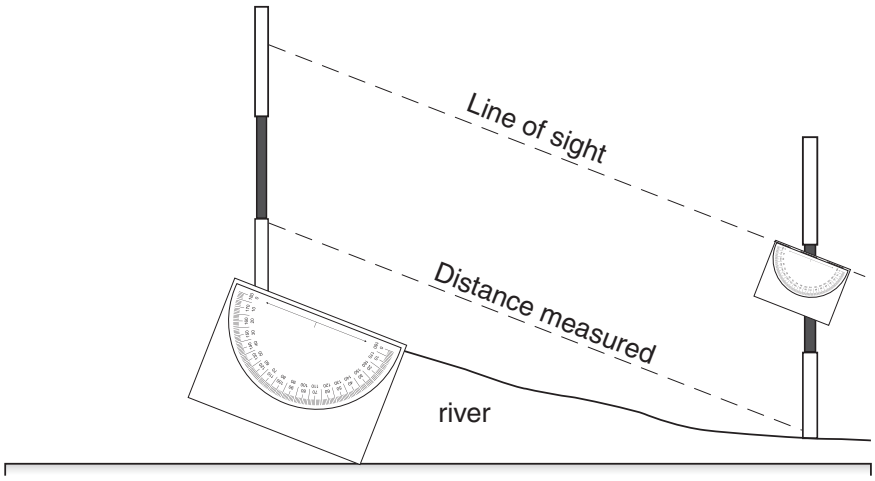

Fig. 10

(i) Using Fig. 10 and your own knowledge, name **two** pieces of equipment used for measuring the gradient.

1 .....

2 ..... [2]

(ii) Describe how the students measured the gradient of the river.

.....

.....

.....

.....

.....

..... [3]

(e) The students recorded the results of their measurements as shown in Table 3.

Table 3

Reading (degrees)	Site A	Site B	Site C
Reading 1	3.5	1.8	2.5
Reading 2	3.5	2.8	2.5
Reading 3	2.9	4.0	1.8
Reading 4	2.8	4.0	1.9
Reading 5	4.0	2.0	3.0
Reading 6	4.0	3.0	3.0
Average gradient (degrees)		2.9	

Calculate the average gradient for sites A and C.

Site A .....

Site C ..... [2]

(f) Write a conclusion to the investigation on **Hypothesis 2:** *The gradient of the river decreases downstream*. Use evidence from Table 3.

.....

.....

.....

.....

.....

..... [3]

[Total: 25 marks]

6 Students investigated traffic flow along a main road near an industrial area.

The students decided to investigate the following hypotheses:

Hypothesis 1: *The volume of traffic is higher in the early morning and late afternoon*.

Hypothesis 2: *There are more trucks passing through the main road than other types of vehicles*.

(a) To investigate **Hypothesis 1**, the students decided to conduct a traffic count along the main road at three sites A, B and C.

(i) What is an *industrial area*?

.....

..... [1]

(ii) Describe what the students would need to consider before carrying out their traffic count.

.....

.....

.....

.....

.....

..... [3]

(iii) State **two** challenges that the students might have faced during the investigation.

1 .....

.....

2 .....

..... [2]

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PLEASE TURN OVER FOR QUESTION 6 (b) Part (i)

(b) At each site they counted the traffic for 10 minutes using tally marks at the following times; 0700 hrs – 0710 hrs, 1100 hrs – 1110 hrs, 1500 hrs – 1510 hrs and 1700 hrs – 1710 hrs.

The results are shown in Table 4.

Table 4

	Number of vehicles		
Times	**Site A**	**Site B**	**Site C**
0700 – 0710	100	90	110
1100 – 1110	40	50	50
1500 – 1510	50	40	40
1700 – 1710	110	102	120

(i) Give **three** advantages of using the tally method.

1 .....

2 .....

3 ..... [3]

(ii) Use the information in Table 4 to complete Fig. 11 for Site C. Add information for 0700 – 0710 hrs and 1700 – 1710 hrs. [2]

SITE C

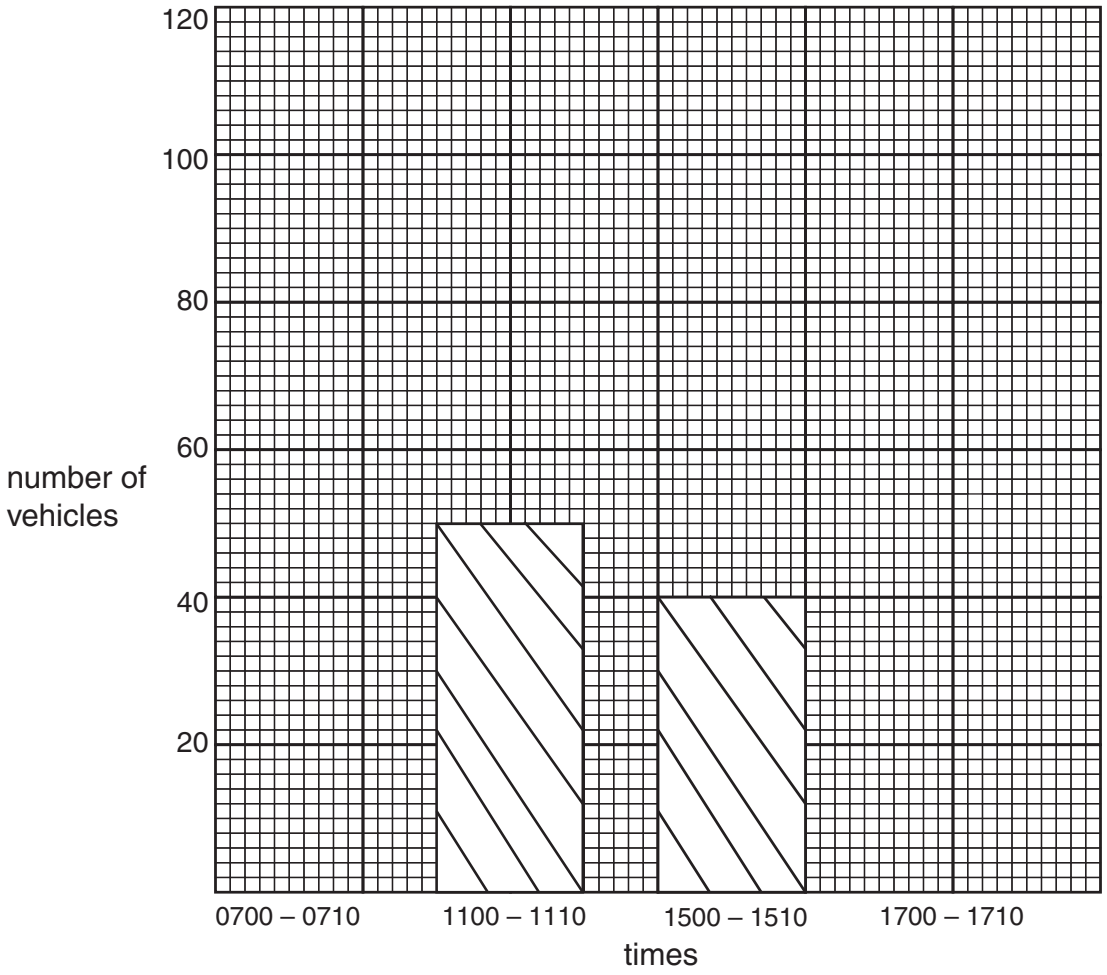

Fig. 11

(iii) Write a conclusion to **Hypothesis 1:** *The volume of traffic is higher in the early morning and late afternoon*. Use evidence from Table 4 and Fig. 11.

.....

.....

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.....

..... [3]

(iv) Suggest **three** ways the investigation could be improved to make the results more reliable.

1 .....

.....

2 .....

.....

3 .....

..... [3]

(c) To test **Hypothesis 2:** *There are more trucks passing through the main road than other types of vehicles*, the students decided to record the vehicles passing through each site according to type.

The results of the investigation are shown in the pictogram, Fig. 12.

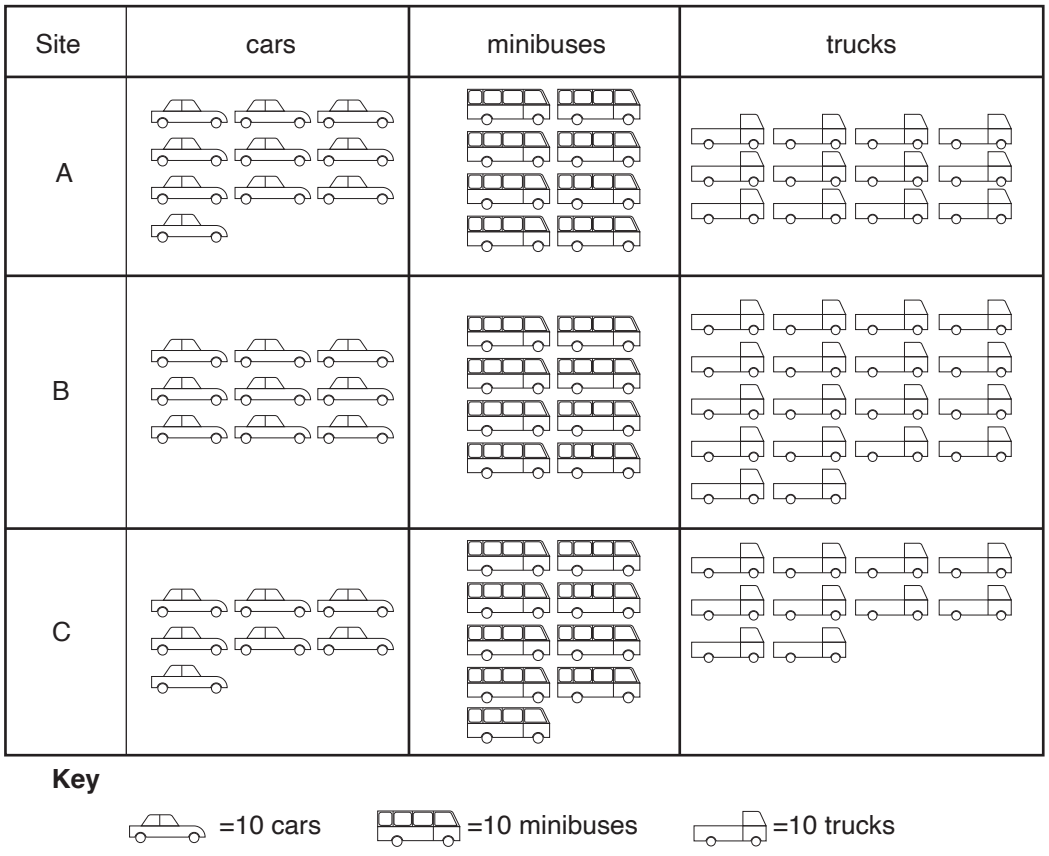

Fig. 12

(i) Using the pictogram shown in Fig. 12, calculate the total number of trucks and cars counted.

Trucks = ...

Cars = ... [2]

(ii) The students presented the data for each site using block bar graphs. Fig. 13 shows the data for Site A. Complete Fig. 14 for Site C. [3]

SITE A

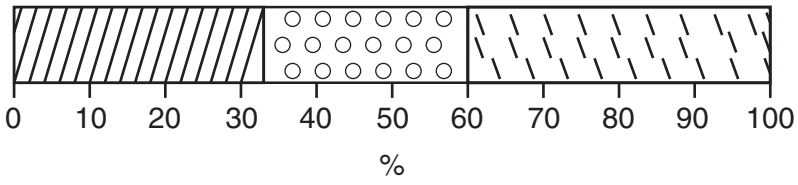

Fig. 13

SITE C

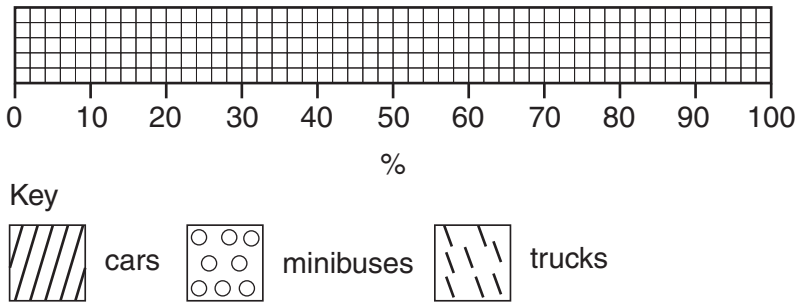

Fig. 14

(d) Write a conclusion to **Hypothesis 2:** *There are more trucks passing through the main road than other types of vehicles*. Use evidence from Fig. 12, Fig. 13 and Fig. 14.

.....

.....

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.....

..... [3]

[Total: 25 marks]

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