UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

GEOGRAPHY **2217/21**

Paper 2 **May/June 2010**

2 hours 15 minutes

Candidates answer on the Question Paper.

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.
Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.
The Insert contains Photograph A for Question 3, Photograph B, Tables 3 and 5 and Fig. 16 for Question 7 and Fig. 17 and Table 6 for Question 8.

The Survey Map Extract and the Inserts 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.

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

This document consists of **28** printed pages, **4** blank pages and **1** Insert.

Section A

Answer **all** questions in this section.

For Examiner's Use

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

(a) (i) Bindura has a sports field in grid square 2284. Give the 4-figure grid reference of a grid square that contains another of Bindura's sports fields.

.....[1]

(ii) Bindura's rifle range is found in 2184. Give the 6-figure grid reference of the building nearest to the rifle range.

.....[1]

(iii) Name **two** other leisure activities at Bindura, indicated on the map.

.....

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.....[2]

(b) (i) Measure the distance along the railway branch line, from its start at 178830 to its junction with the main line at 225855. Give your answer in kilometres.

.....[1]

(ii) How have the builders of this railway branch line tried to keep it as level as possible?

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.....[2]

(c) Study the area of Bindura bounded by the grid lines shown on Fig. 1.

For Examiner's Use

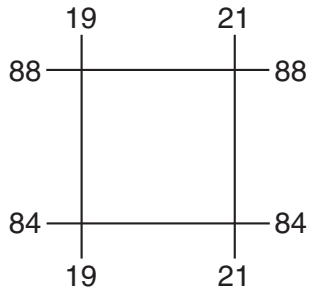

Fig. 1

(i) State the map evidence for mining in this area.

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.....[3]

(ii) Describe the location of settlement (including huts and staff quarters) in this area.

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.....[4]

(d) Study the area bounded by the grid lines as shown on Fig. 2.

For Examiner's Use

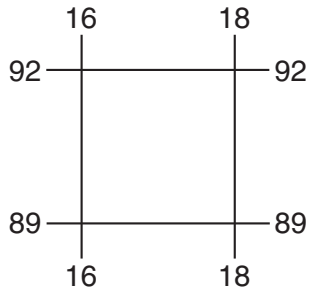

Fig. 2

(i) Describe the distribution of orchard or plantation in this area.

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.....[2]

(ii) Describe the Mazowe river in this area.

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.....[4]

[Total: 20 marks]

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2 Study Fig. 3, a climate graph for the city of Arica. Arica is in the Atacama Desert in Chile, South America.

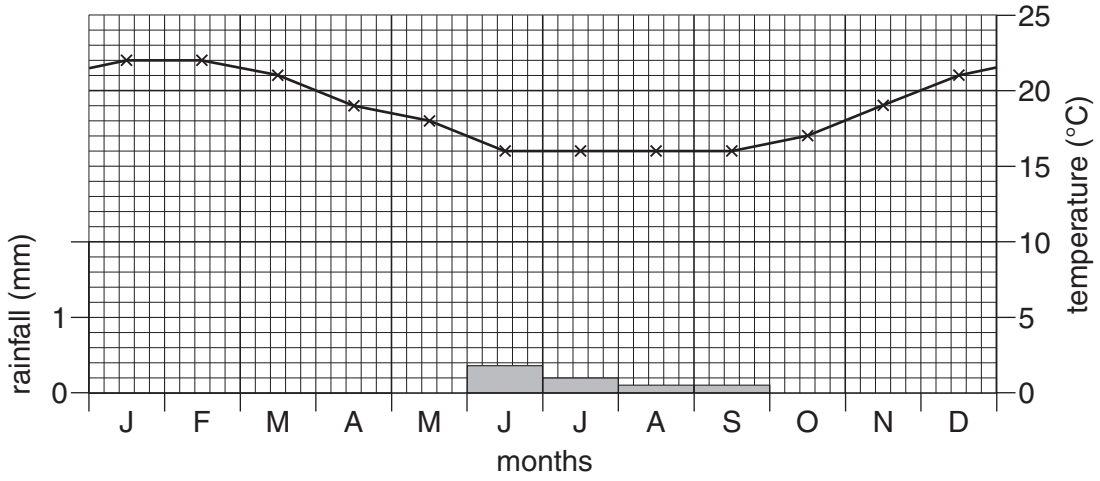

Fig. 3

(a) (i) In which months does rain fall?

.....[1]

(ii) Will 0.1 mm of rain fall every September? Explain your answer.

.....[1]

(b) (i) Use the data in Table 1 to complete the climate graph for La Paz, Bolivia on Fig. 4. [2]

Table 1

months	J	F	M	A	M	J	J	A	S	O	N	D
temperature (°C)	10	10	10	10	9	7	7	8	9	10	11	10
rainfall (mm)	130	105	70	50	10	5	10	15	30	40	50	90

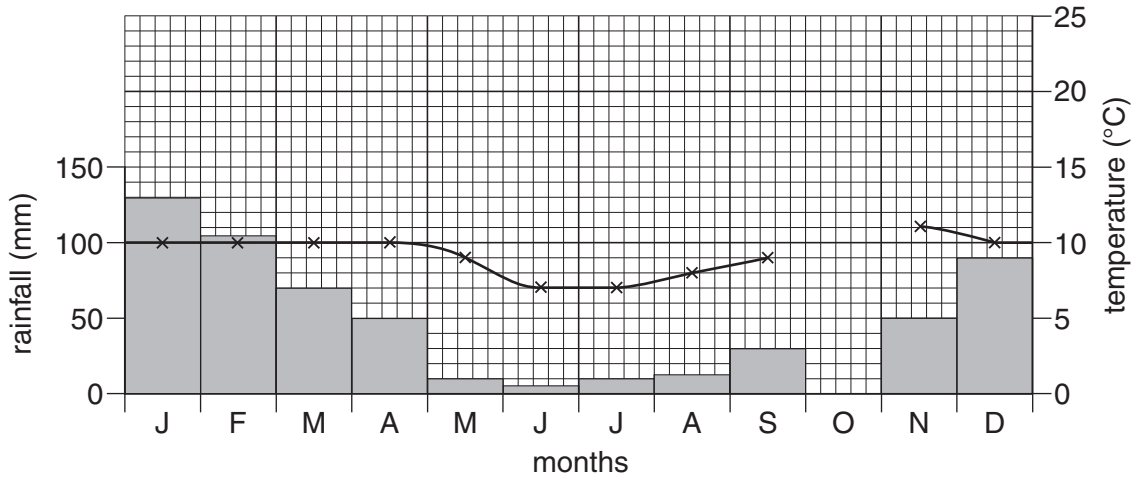

Fig. 4

(ii) Describe the differences in climate between Arica and La Paz.

For Examiner's Use

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.....[2]

(c) Study Fig. 5, which shows the locations of Arica and La Paz.

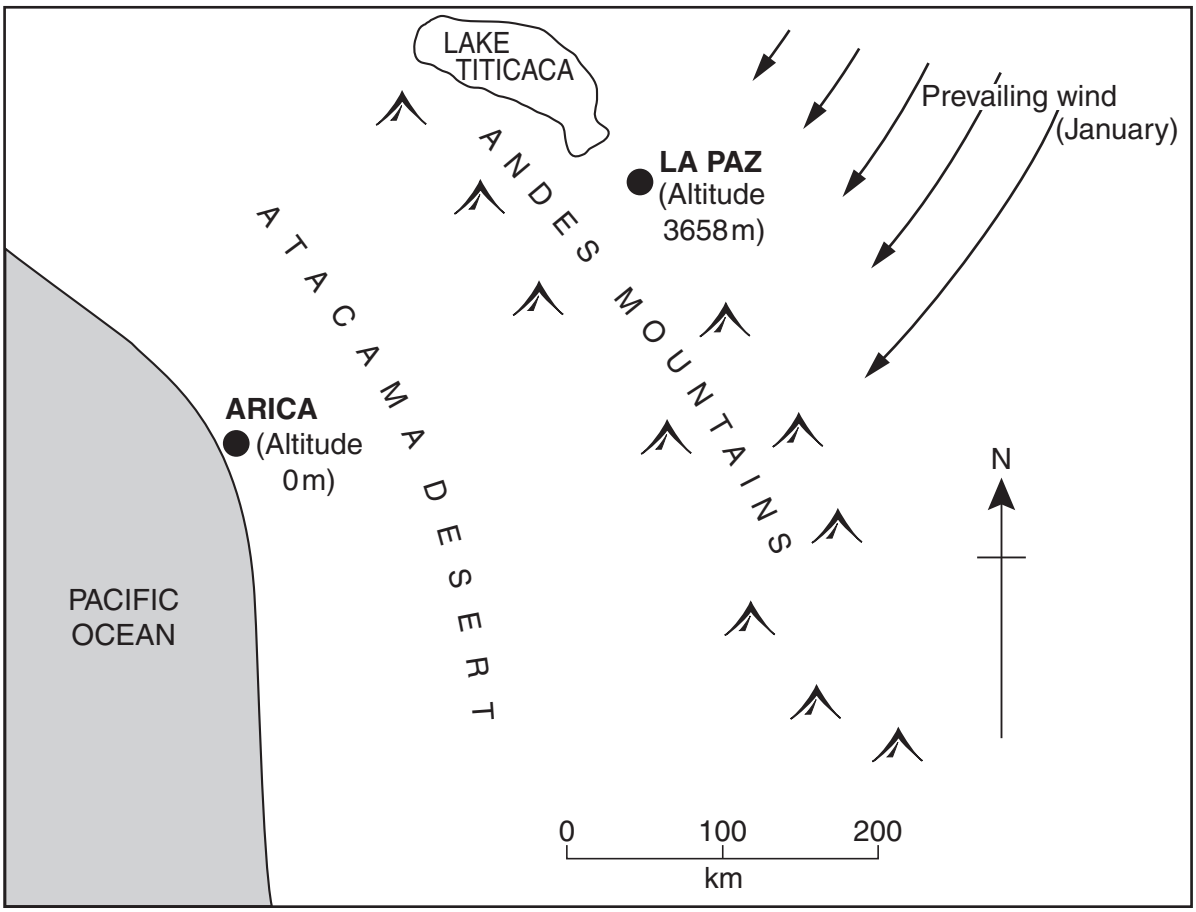

Fig. 5

Using Fig. 5, suggest reasons for the difference in climate between Arica and La Paz in January.

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.....[2]

[Total: 8 marks]

3 Study Photograph A (Insert), of a river and its surroundings, and Fig. 6, which is a field sketch of the same area.

For Examiner's Use

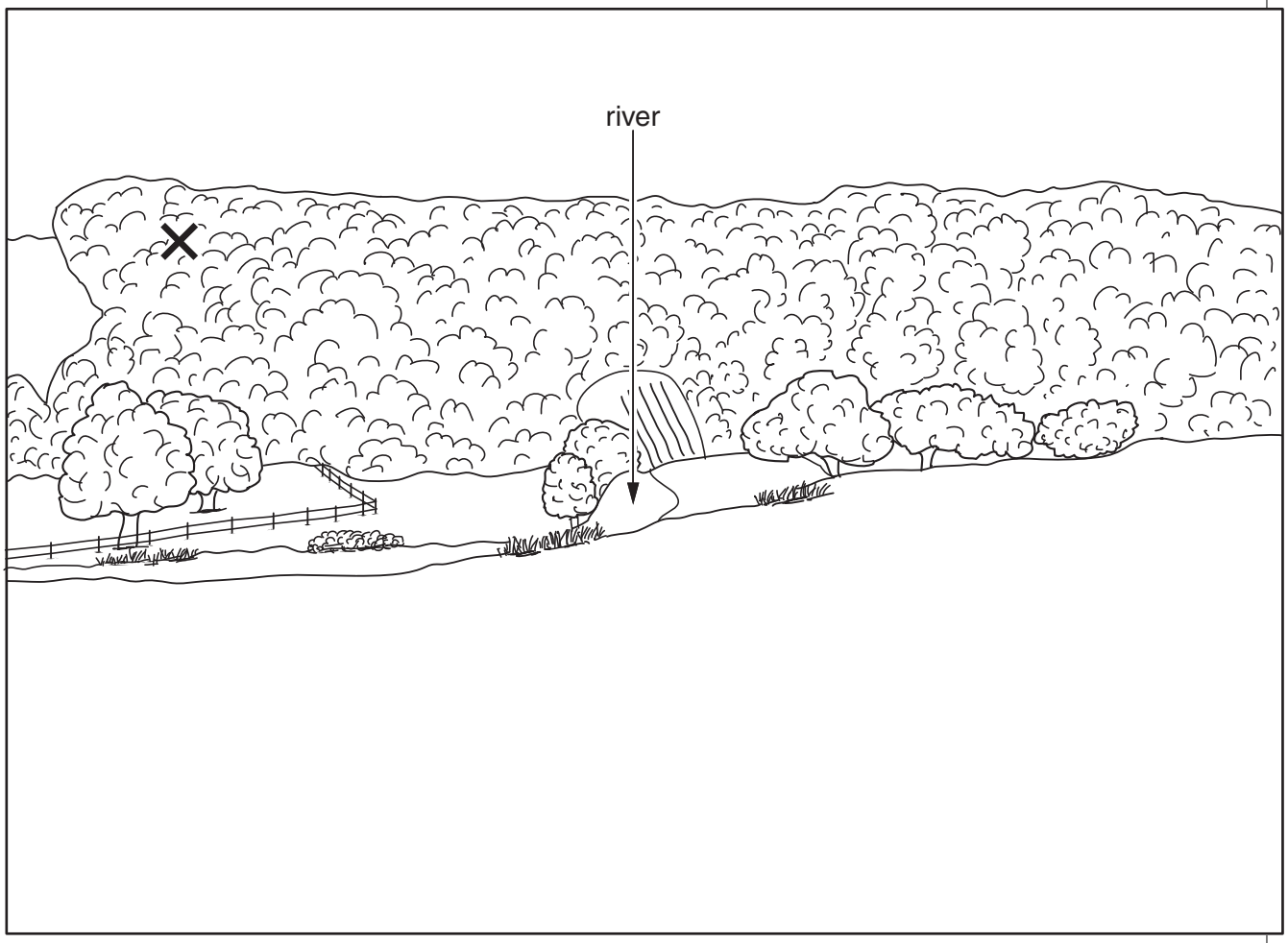

Fig. 6

(a) Describe the relief of the area shown in Photograph A.

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..... [3]

(b) (i) Annotate Fig. 6 to describe the vegetation shown in Photograph A. [3]

For Examiner's Use

(ii) Suggest why the slope at **X** has the vegetation shown.

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.....[2]

[Total: 8 marks]

4 Study Fig. 7, which shows the main urban areas in Zambia, an LEDC in Africa.

For Examiner's Use

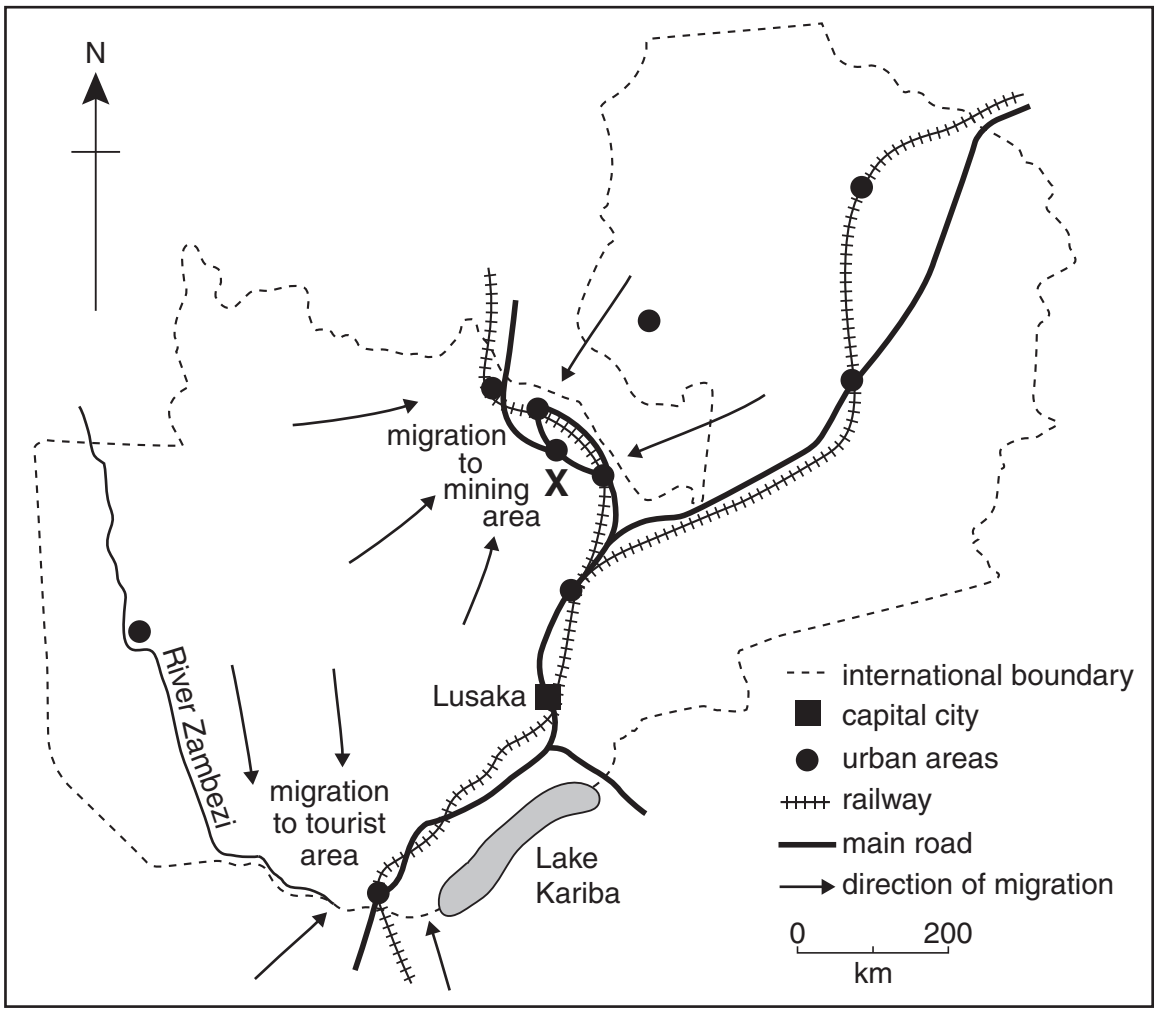

Fig. 7

(a) Describe the location of the main urban areas shown on Fig. 7.

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.....[3]

(b) Study Fig. 8, a population pyramid for urban area X in Zambia.

For Examiner's Use

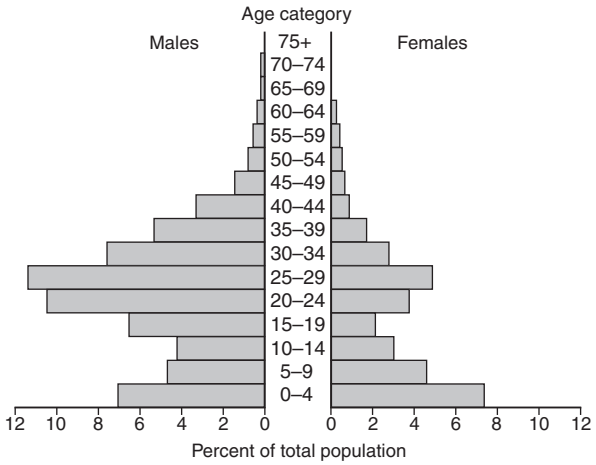

Fig. 8

(i) What percentage of this urban population are females aged 15–19?

.....[1]

(ii) Suggest reasons for the high number of males aged 20–29.

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.....[2]

(iii) Birth rates in urban areas in LEDC's are usually lower than in rural areas. Suggest reasons for this.

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.....[2]

[Total: 8 marks]

5 Study Fig. 9, which shows world car production.

For Examiner's Use

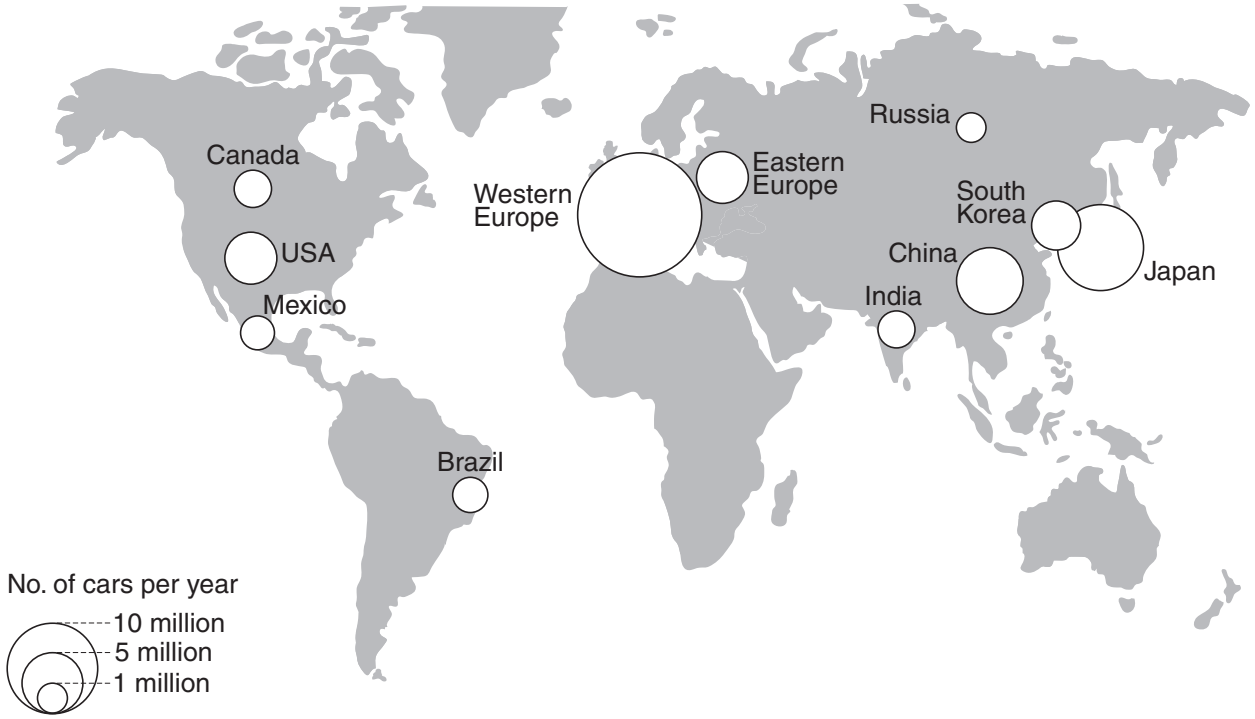

Fig. 9

(a) (i) How many cars per year are produced in Russia?

.....[1]

(ii) Use Fig. 9 to list the **three** main car producing areas in order of output.

Greatest .....

.....

..... [1]

(iii) Suggest why these areas produce the most cars.

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.....[2]

(b) Study Fig. 10, which shows the location of a car factory.

For Examiner's Use

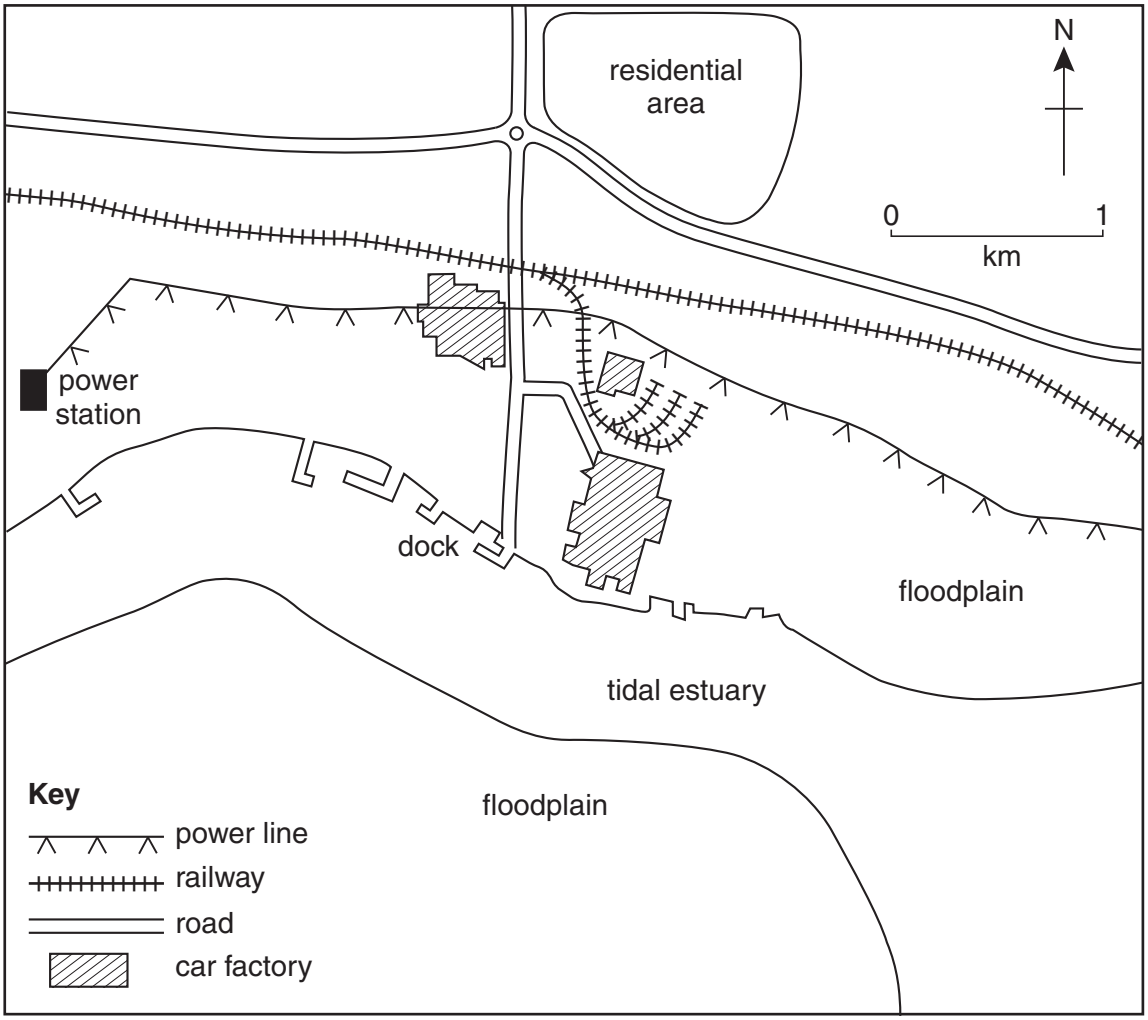

Fig. 10

Suggest why the car factory was built at this location.

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.....[4]

[Total: 8 marks]

6 Study Fig. 11, which shows the amount of food aid received by several countries.

For Examiner's Use

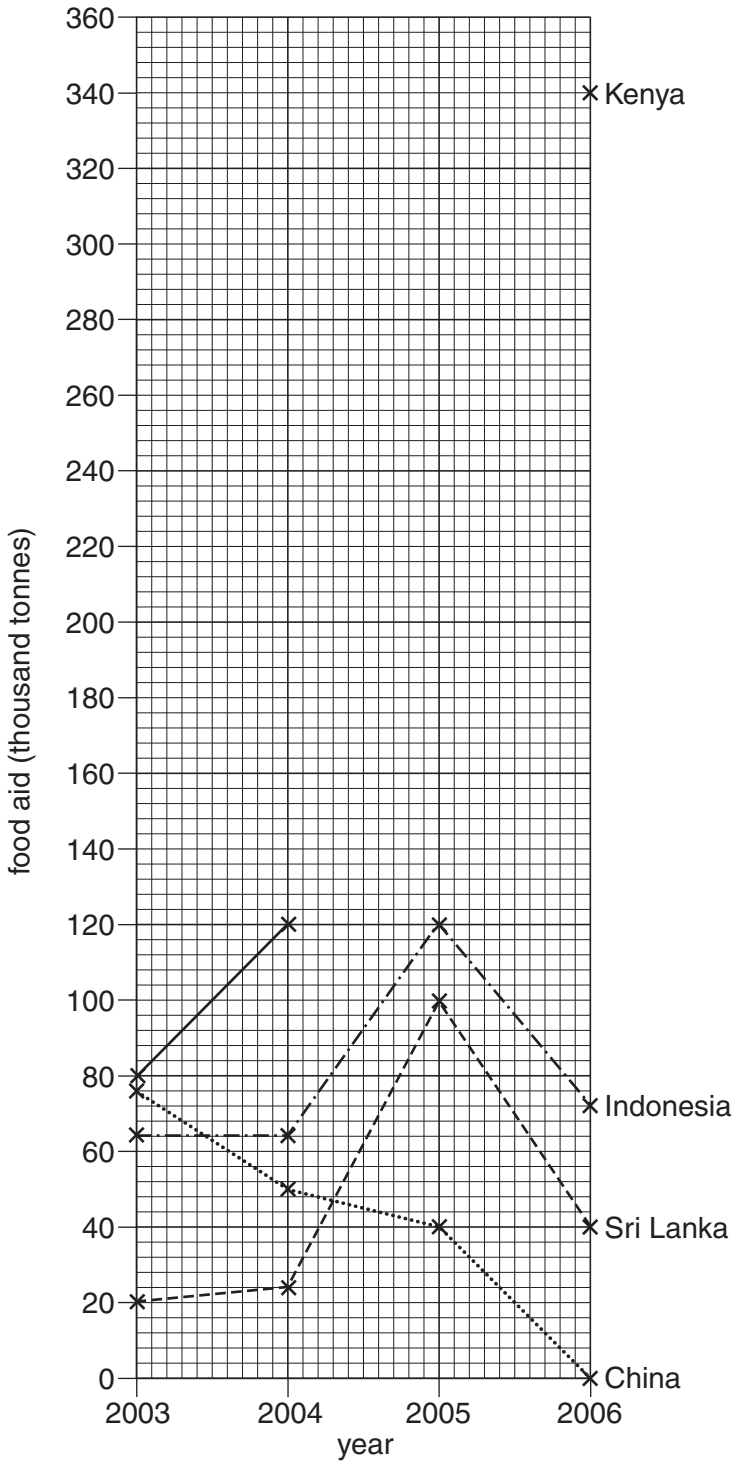

Fig. 11

(a) Use the data in Table 2 to complete the line for Kenya on Fig. 11. [2]

For Examiner's Use

Table 2

year	food aid for Kenya (thousand tonnes)
2003	80
2004	120
2005	210
2006	340

(b) Describe the changes in the amount of food aid supplied to Indonesia.

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.....[3]

(c) Suggest reasons for changes in the supply of food aid to countries such as those on Fig. 11.

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.....[3]

[Total: 8 marks]

Section B

For Examiner's Use

Answer **one** question in this section.

7 A group of students was investigating the effects of groynes on a beach.
Groynes are structures built out into the sea to stop or slow down longshore drift.
A groyne is shown in Photograph B (Insert).

(a) State **two** safety precautions that the students should take when doing fieldwork on a beach.

1 .....

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2 .....

.....[2]

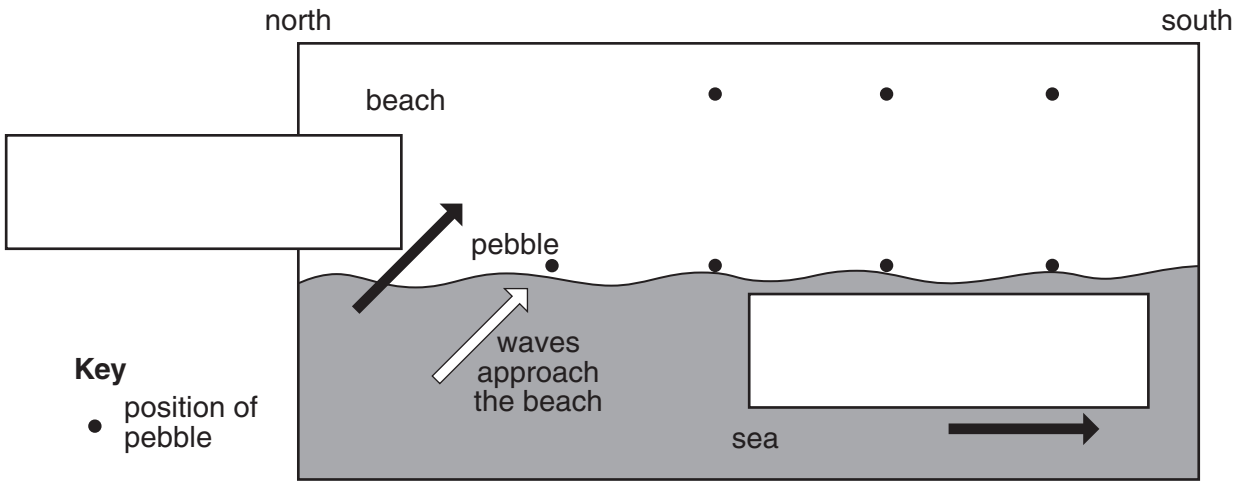
The students decided to investigate the following hypotheses:

Hypothesis 1 *Groynes reduce the movement of material along a beach*

Hypothesis 2 *Groynes affect the beach profile*

(b) (i) Complete Fig. 12, below, to show the movement of a pebble by longshore drift.

Plan view of movement of beach material by longshore drift



[2]

Fig. 12

(ii) Write the following labels in the correct boxes on Fig. 12.

Direction of longshore drift

Direction of the prevailing wind

[1]

(iii) Explain the process of longshore drift.

For Examiner's Use

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.....[3]

For Examiner's Use

(c) (i) First, the students investigated the direction and rate of longshore drift. To do this, they painted 50 pebbles from the beach in bright red paint and left them in a group where the waves were coming up the beach.

Suggest why the students painted the pebbles

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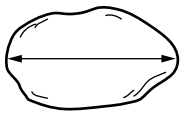
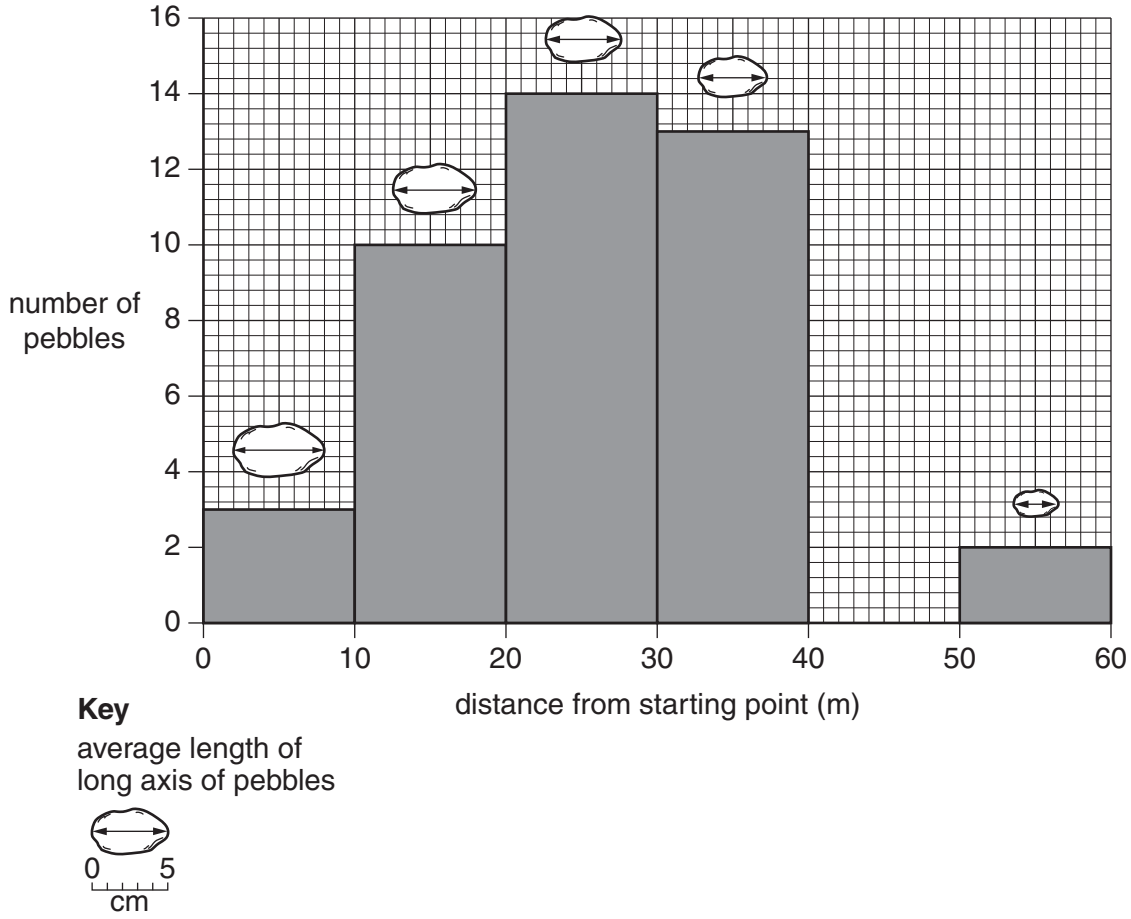
.....[1]

(ii) Later, the students measured the distance each pebble had been moved along the beach, and they measured the long axis of each pebble, as shown on the sketch below. The results are summarised in Table 3 (Insert).



Use the information from Table 3 to complete Fig. 13 below by filling in the missing bar and long axis measurement.

Result of longshore drift



[2]

Fig. 13

(iii) What did the students learn from this investigation about the impact of longshore drift on the movement of pebbles?

For Examiner's Use

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(d) Look again at Photograph B (Insert). The students took measurements every five metres along the groyne away from point **X**.
At each five metre point they measured from the top of the groyne to the beach material on both the north and south side, as shown on Fig. 14 below.

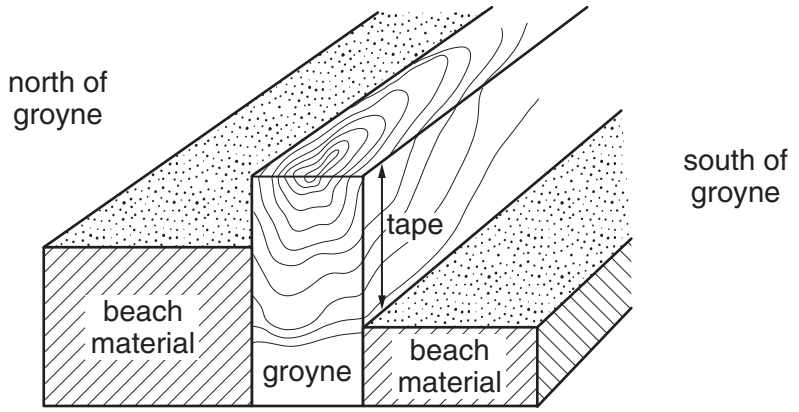

Fig. 14

The measurements are shown on Table 4 below.

Table 4 Build up of beach material either side of the groyne

Distance from X (m)	Measurement from top of groyne to beach material	
	North side (m)	South side (m)
0	0	0.9
5	0.3	1.2
10	1.1	1.5
15	0.9	1.3
20	0.8	1.2
25	0.5	1.3
30	1.2	1.4
35	1.5	1.6
40	1.5	1.7
45	1.6	1.8
50	1.7	1.9
55	1.8	1.9
60	1.9	2.0
Average	**1.1**	

(i) Estimate the average measurement from the top of the groyne to the beach material on the south side of the groyne.
Choose your estimate from the following and write your answer on Table 4.

1.2m 1.5m 1.9m

[1]

(ii) Use the data from Table 4 to complete Fig. 15 below. Draw in the bars for 5m and 10m on the south side of the groyne.

[2]

For Examiner's Use

Build up of beach material either side of a groyne

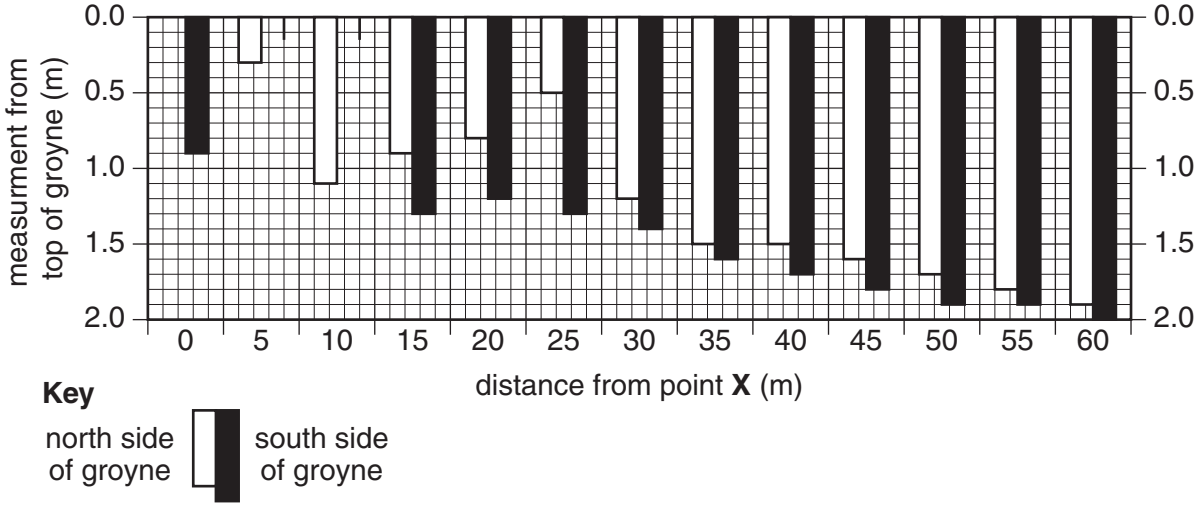

Fig. 15

(iii) What conclusion could the students make about **Hypothesis 1** *Groynes reduce the movement of material along a beach*? Use data from Table 4 and Fig. 15 to support your answer.

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.....[3]

(e) Next, the students did an investigation to see how the groynes affect the beach profile (**Hypothesis 2**).

(i) Describe how they would measure a beach profile to get the results shown in Table 5 (Insert). You may draw a sketch to help you.
The students used the following equipment:

- Two ranging poles
- A clinometer
- A tape measure
- A recording sheet

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.....[4]

(ii) The students plotted their results to create the beach profiles shown on Fig. 16 (Insert).
Describe **two** differences between the beach profiles north and south of the groyne.

1 .....

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2 .....

.....[2]

(iii) What conclusion could the students reach about **Hypothesis 2** *Groynes affect the beach profile*?

For Examiner's Use

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.....[1]

(f) Later, the students discussed their beach fieldwork and how they could have improved the accuracy and reliability of their results.
What suggestions could they have made?

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.....[3]

[Total: 30 marks]

For Examiner's Use

8 Students wanted to investigate some characteristics of the CBD (Central Business District) of a town. Fig. 17 (Insert) shows the centre of the town. The students decided to map pedestrian flows and interview shoppers in order to test the following hypotheses:

Hypothesis 1 *The numbers of pedestrians decrease away from the central point of the CBD*

Hypothesis 2 *Shoppers have different opinions about the CBD*

(a) The point marked **X** on Fig. 17 (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 .....

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2 .....

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3 .....

.....[3]

(b) The students wanted to make their fieldwork as accurate as possible, so they measured distances of 100m, 200m and 300m away from the central point along the roads in each direction. The survey sites are shown on Fig. 17 (Insert). At each site, they did a pedestrian count lasting 10 minutes at five different times during the day.

(i) A copy of the recording sheet used by the students is shown on Fig. 18 below. Complete the recording sheet by inserting the correct total.

Recording sheet

Street name: Bluebell Street

Distance from central point: 200m

Time of survey: 08.00 to 08:10

Tally	Total
𝍸 𝍸 𝍸 ||	

[1]

Fig. 18

For Examiner's Use

(ii) Suggest **one** advantage and **one** disadvantage of their method of selecting the sites for the pedestrian counts.

Advantage .....

.....

Disadvantage .....

.....[2]

(iii) Study the results of the three survey sites on Bluebell Street which are shown in Table 6 (Insert).

Give **two** reasons why the students did the pedestrian count at five different times during the day.

1 .....

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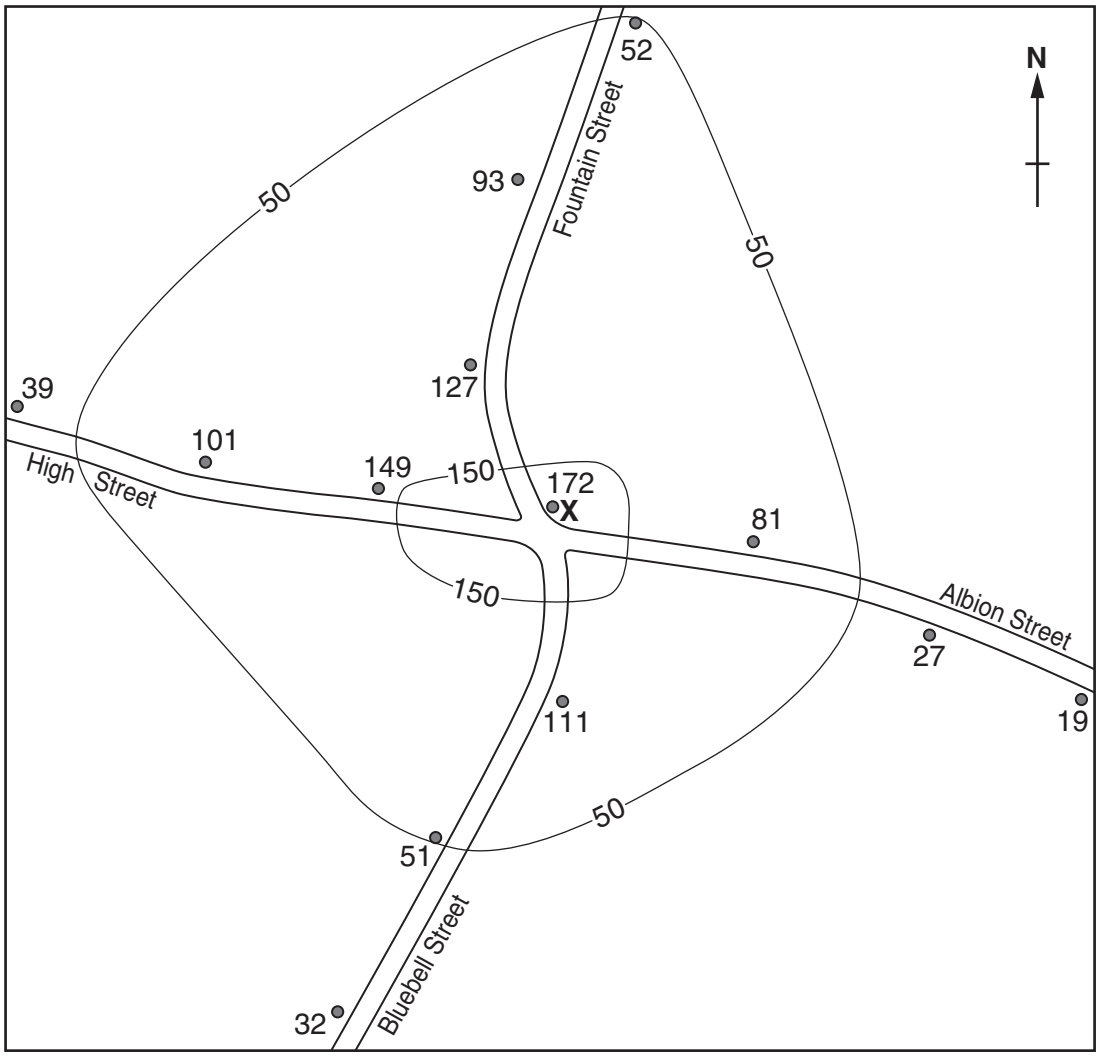
2 .....

.....[2]

(c) The results of the pedestrian counts are mapped with isolines on Fig. 19 below.

For Examiner's Use

Result of the pedestrian count



Key

- survey site and total number of pedestrians recorded
- **X** central point
- 50 isoline
- over 150 pedestrians

0 100 200 300 m

Fig. 19

(i) Using the key provided on Fig. 19, shade in the area where more than 150 pedestrians were recorded. [1]

(ii) On Fig. 19, draw the isoline to show 100 pedestrians. [2]

(iii) To what extent does the information on Fig. 19 support **Hypothesis 1** *The numbers of pedestrians decrease away from the central point of the CBD*?

For Examiner's Use

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.....[2]

(iv) Use the information on Fig. 17 (Insert) to suggest why pedestrian flows vary within the study area.

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.....[2]

(v) The outdoor market was closed on the day of the pedestrian counts. To extend their fieldwork, the students repeated the pedestrian counts on a day when the outdoor market was open between 08.00 and 13.00 hours.
What difference would you expect the students to find between the results of the two days?

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.....[3]

(d) To investigate **Hypothesis 2**, the students devised a questionnaire to discover what opinions shoppers had about the CBD. The questionnaire is shown on Fig. 20 below.

For Examiner's Use

Questionnaire

Age group	Under 20	20 – 60	Over 60
Gender	Male	Female	

Question 1

What attracts you to the CBD?

- ☐ Close to home or work
- ☐ Good variety of shops
- ☐ .....
- ☐ .....

Question 2

What concerns you about the CBD?

- ☐ Overcrowded at weekends
- ☐ Too much litter and graffiti
- ☐ .....
- ☐ .....

Fig. 20

(i) Describe **one** appropriate sampling method to obtain an accurate sample of people to be interviewed.

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.....[3]

(ii) Add **two** more possible attractions and **two** more possible concerns in the spaces on the questionnaire (Fig. 20). Use different ideas and not just opposites. [4]

(e) Having completed the questionnaire and obtained their results, the students considered how to use them. Use the following headings to suggest how they could have used the results of their questionnaire.

For Examiner's Use

Graphs to show their results .....

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Analysis of their results .....

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Recommendations to the town council .....

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.....[5]

[Total: 30 marks]

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