UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE NAME

CENTRE NUMBER | | | | | |

CANDIDATE NUMBER | | | | |

2356262648 0 2

GEOGRAPHY **2217/23**

Paper 2 **October/November 2011**

2 hours 15 minutes

Candidates answer on the Question Paper.

Additional Materials: Calculator
Ruler
Protractor
Plain paper

1:25 000 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 2, Figs 8 and 10 for Question 7, and Tables 5 and 6 for Question 8.

The Survey Map Extract and the Insert 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.

This document consists of **25** printed pages, **3** blank pages and **1** Insert.

Section A

For Examiner's Use

Answer **all** questions in this section.

1 Study the 1:25 000 map of Castries, St Lucia.

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

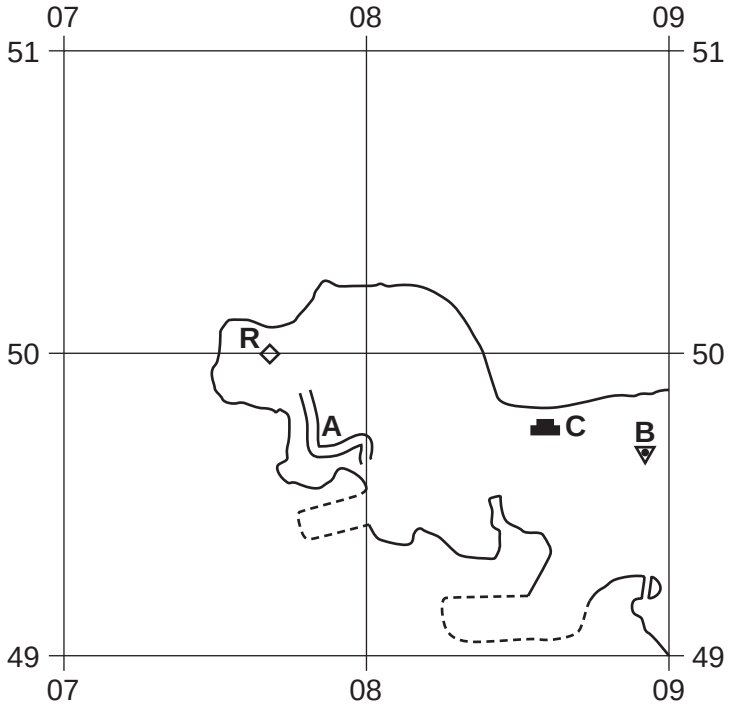

Fig. 1

(i) Name the type of road at **A**;

.....

(ii) Name the feature **B**;

.....

(iii) Name the building **C**;

.....

(iv) Name the feature **R**.

.....[4]

(v) State **two** features of the coastline at D'Estrées Point.

.....

.....[2]

(vi) What type of natural vegetation is found at grid reference 089493?

.....[1]

(vii) Give **two** uses for the reclaimed land in the area shown on Fig. 1.

.....

.....[2]

(b) (i) Give the six-figure grid reference of the Ships Beacon on Tapion Rock, at the entrance to Port Castries.

.....[1]

(ii) State the compass direction from Tapion Rock to La Toc Point.

.....[1]

(c) Give map evidence for leisure activities and tourism within half a kilometre of La Toc Bay.

.....

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.....

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.....[4]

(d) Measure the distance along the water pipeline from the reservoir at 114477 to the reservoir at 133473. Give your answer in metres.

.....[1]

(e) Describe the relief and drainage in grid square 1149.

.....

.....

.....

.....

.....

.....[4]

[Total: 20 marks]

2 Study Photograph A (Insert) of part of a squatter settlement in Lahore, Pakistan.

For Examiner's Use

(a) Describe the site and location of the shelter shown in the photograph.

.....

.....

.....

.....[2]

(b) Describe the road in the background of Photograph A.

.....

.....

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.....[2]

(c) Using only evidence from Photograph A, suggest the possible disadvantages of living in the part of the squatter settlement shown.

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.....[4]

[Total: 8 marks]

3 Study Fig. 2, which shows employment structure data for selected countries.

For Examiner's Use

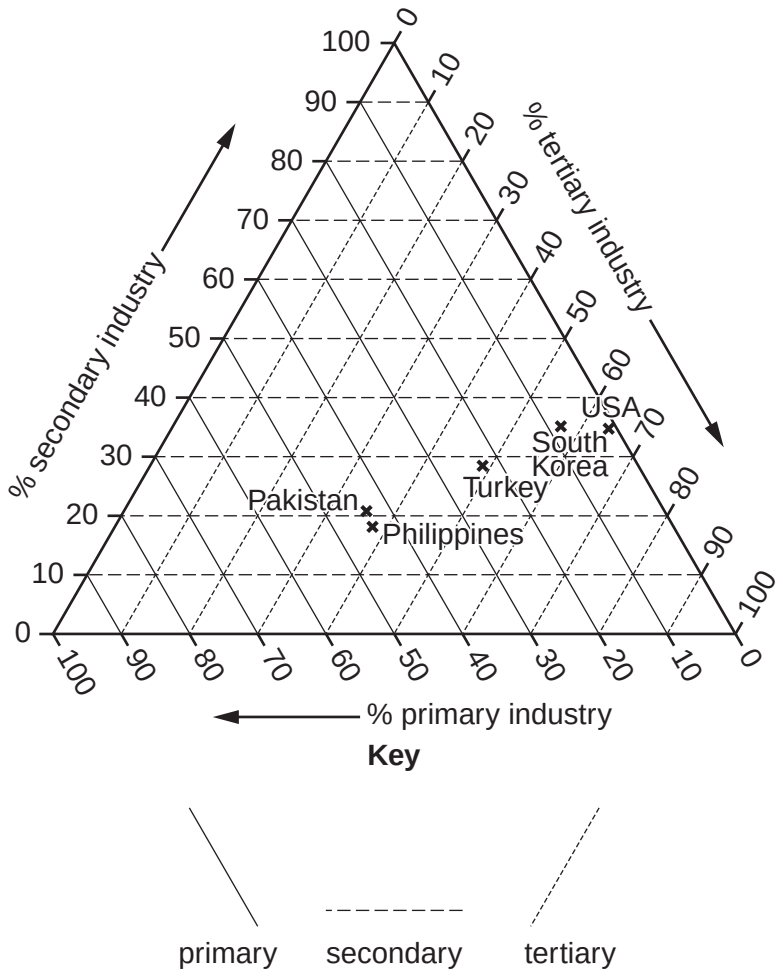

Fig. 2

(a) Table 1 shows employment structure data for Sri Lanka. Use this data to plot the position of Sri Lanka on Fig. 2.

Table 1

primary industry	40%
secondary industry	23%
tertiary industry	37%

[2]

(b) Compare the employment structure in Sri Lanka and South Korea.

.....

.....

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.....

.....

.....[3]

(c) The proportions employed in primary, secondary and tertiary industry may change as a country's level of development changes. Suggest how employment structure may change with level of development.

For Examiner's Use

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.....[3]

[Total: 8 marks]

4 Study Fig. 3, which shows the depth of focus and magnitude of major earthquakes in Indonesia during a month in 2009.

For Examiner's Use

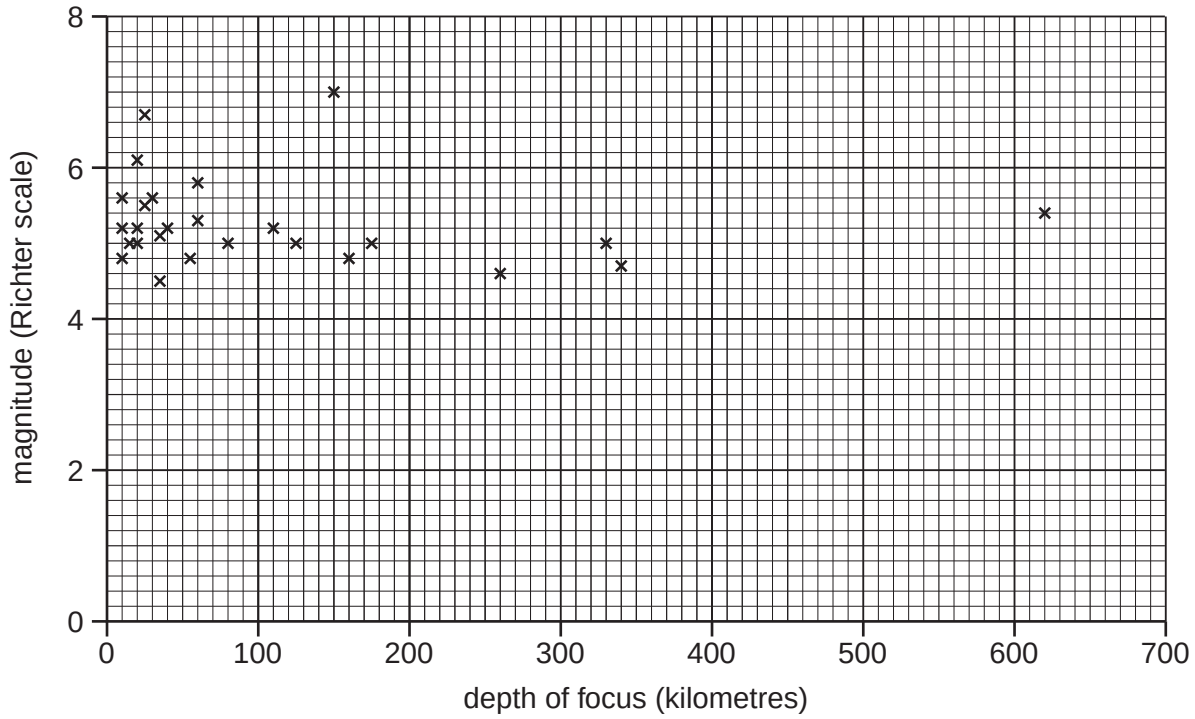

Fig. 3

(a) (i) What was the depth of focus of the deepest earthquake during this period?

..... kilometres [1]

(ii) What was the magnitude of the most severe earthquake during this period?

.....[1]

(iii) Complete the following sentence.

Most of the earthquakes were at a depth of between ……. and ……. kilometres and were between ……. and ……. in magnitude. [2]

(iv) Tick the correct statement about the earthquakes in the table below.

There is a strong positive relationship between magnitude and depth	
There is a strong negative relationship between magnitude and depth	
There is no relationship between magnitude and depth	

[1]

(b) Explain why earthquakes occur at subduction zones, such as in Indonesia. You may draw a labelled diagram as part of your answer.

For Examiner's Use

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.....[3]

[Total: 8 marks]

5 Study Fig. 4, which shows the climate in an area of tropical rainforest.

For Examiner's Use

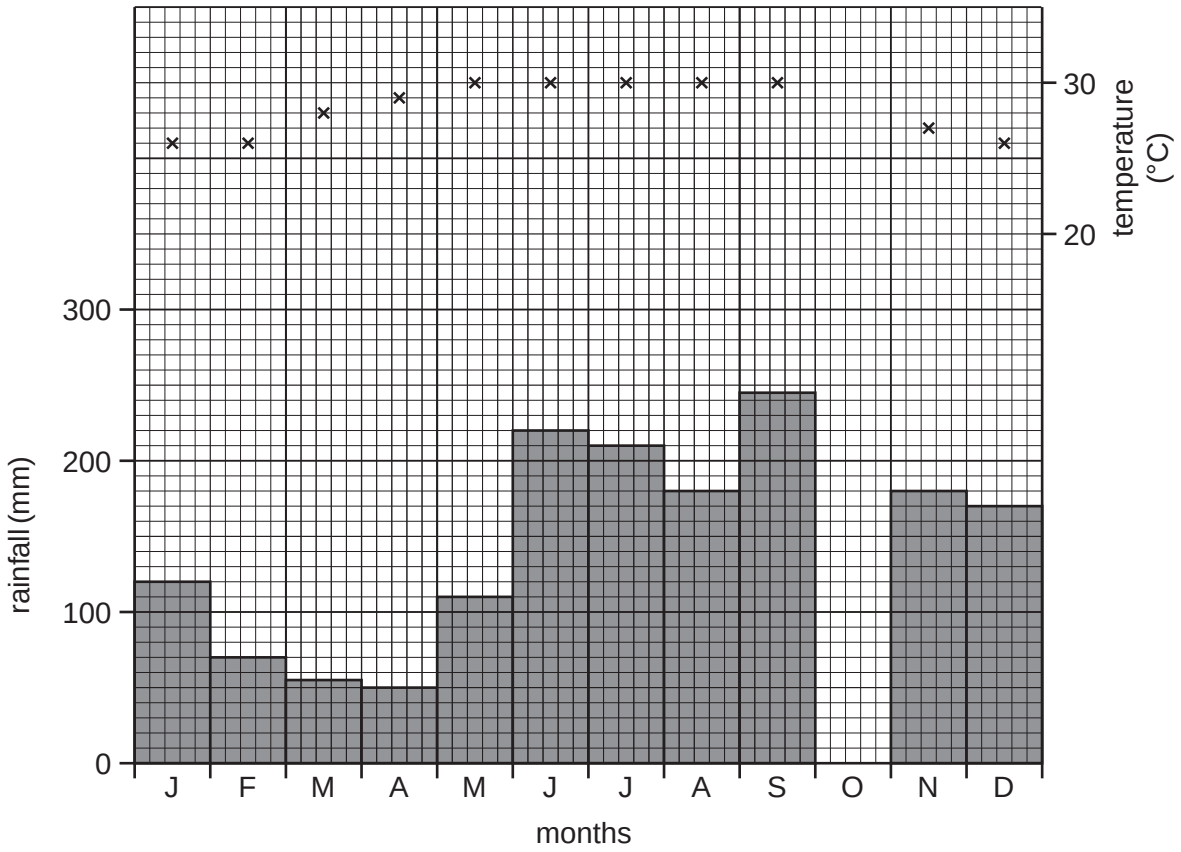

Fig. 4

(a) (i) Complete Fig. 4 to show rainfall of 270 mm and temperature of 28 °C in October. [2]

(ii) Calculate the annual temperature range.

.....[1]

(iii) Estimate the total annual rainfall. Circle the answer below.

880 mm 1080 mm 1880 mm 3000 mm [1]

(iv) What is the evidence that the location is in the northern hemisphere?

.....[1]

(b) Tick **three** characteristics of vegetation in an area of tropical rainforest in the table below.

drip tip leaves	
small thorny leaves	
thick ridged bark	
thin smooth bark	
long deep roots	
shallow buttress roots	

[3]

[Total: 8 marks]

6 Study Fig. 5 and Table 2, which show information about hotel occupancy in Iceland.

For Examiner's Use

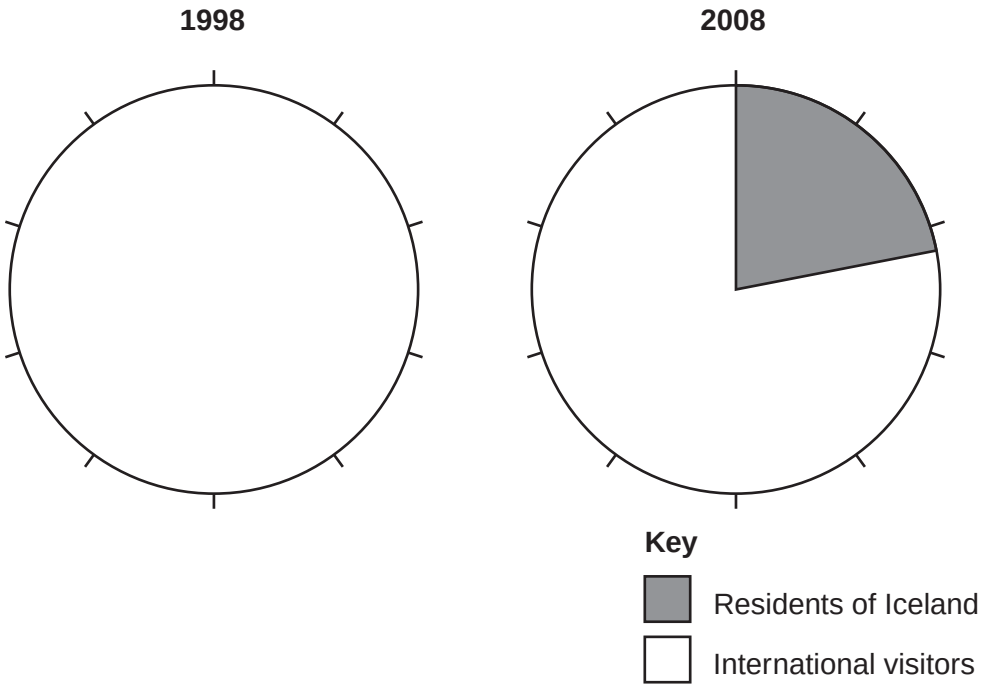

Fig. 5

Table 2

	1998	2008
Residents of Iceland	26%	22%
International visitors	74%	78%

(a) (i) Complete Fig. 5 using the data for 1998 in Table 2 above. [2]

(ii) Describe how hotel occupancy in Iceland changed between 1998 and 2008.

.....

..... [1]

(b) Study Fig. 6, which shows the number of nights spent in hotels by international visitors to Iceland.

For Examiner's Use

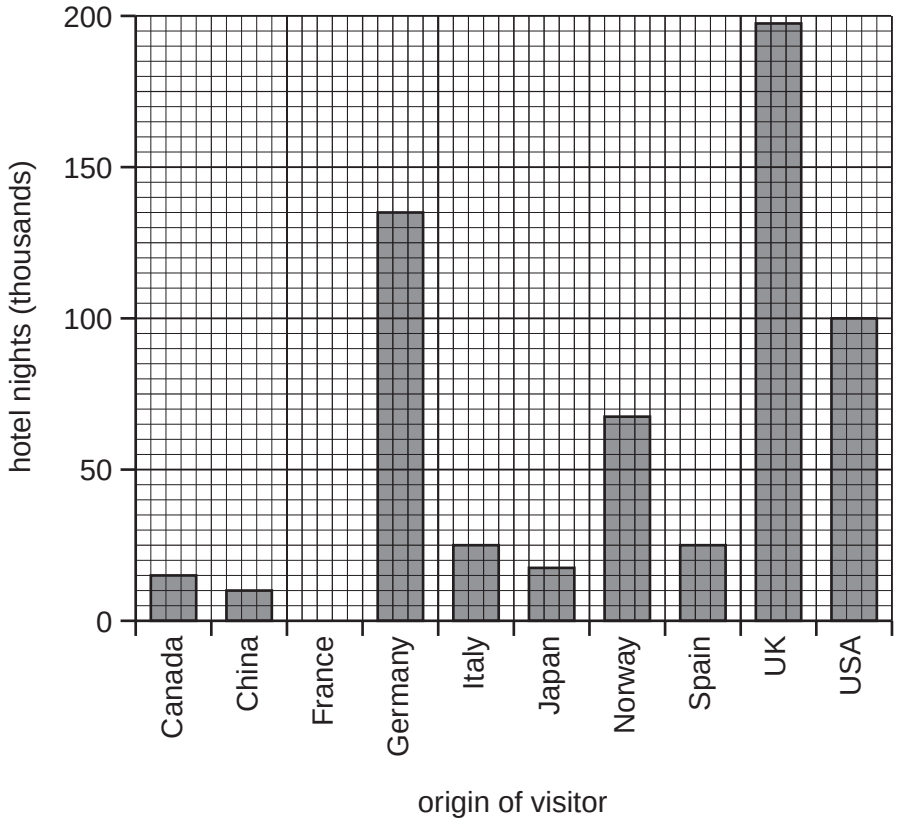

Fig. 6

(i) Complete Fig. 6 to show 45 000 nights spent in hotels by visitors from France. [1]

(ii) For which **two** countries were the number of nights spent in hotels the same?

.....[1]

(c) Study Fig. 7, the itinerary for a holiday in Iceland.

For Examiner's Use

Iceland – The Land of Geysers and Glaciers

Itinerary
Day 1: Fly to Reykjavik and transfer to hotel.
Day 2: Tour to include lava fields, Gullfoss (Iceland's biggest waterfall), hot springs and Thingvellir National Park.
Day 3: Tour of coastal villages and spectacular shorelines.
Day 4: Swim in the blue lagoon. Transfer to airport for return flight.

Fig. 7

Using Fig. 7, state **six** attractions of Iceland's physical landscape.

.....

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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 characteristics of local streams and rivers. They decided to do fieldwork at three sites which are shown on Fig. 8 (Insert).

The two hypotheses used by the students were:

Hypothesis 1: *Width, depth and wetted perimeter of the river channel increase downstream*.

Hypothesis 2: *There is a relationship between the size and the roundness of pebbles on the river bed.*

(a) Before beginning their fieldwork the students received advice from their teacher.

(i) Suggest **three** pieces of advice their teacher gave them to keep them safe whilst carrying out fieldwork.

1 .....

.....

2 .....

.....

3 .....

..... [3]

(ii) Give **two** reasons why their teacher suggested they might do a pilot study.

1 .....

.....

2 .....

..... [2]

(b) To investigate **Hypothesis 1**, the students made two measurements at each site. They measured the width of the river channel and the depth of the river at points across the channel.

Suggest what equipment they would use to measure the width of the channel and the depth of the river and how they would make the measurements.

Width of channel .....

.....

.....

.....

Depth of river .....

.....

.....

..... [4]

(c) The results of their measurements are shown in Table 3, below.

Table 3

Channel measurements

		Depth of river at distances across the channel (m)											
Site	Width of channel (m)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	Wetted perimeter (m)
A	1.3	0.15	0.1											1.4
B	2.3	0.14	0.18	0.33	0.2									2.5
C	6.5	0.2	0.26	0.29	0.3	0.33	0.38	0.47	0.48	0.51	0.36	0.35	0.26	

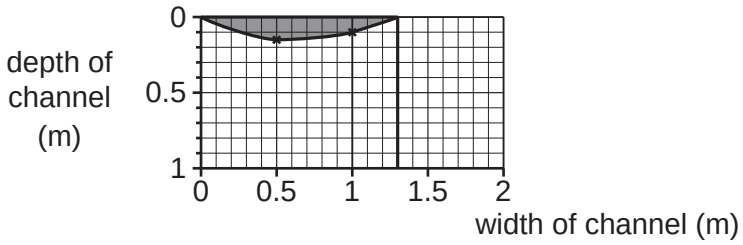
(i) Use the results in Table 3 to complete Fig. 9 below by:

- completing the cross-section of the channel at Site B;
- shading in the river channel at Site B. [3]

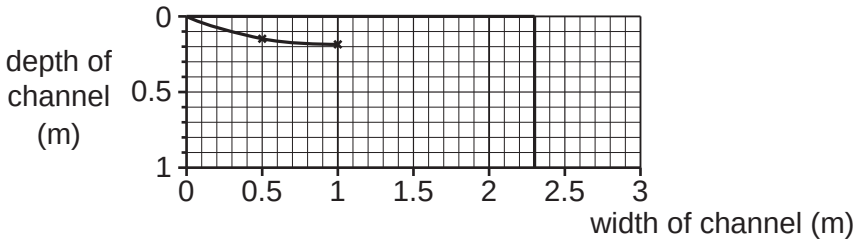
For Examiner's Use

Cross-section at sites A, B and C

Site A



Site B



Site C

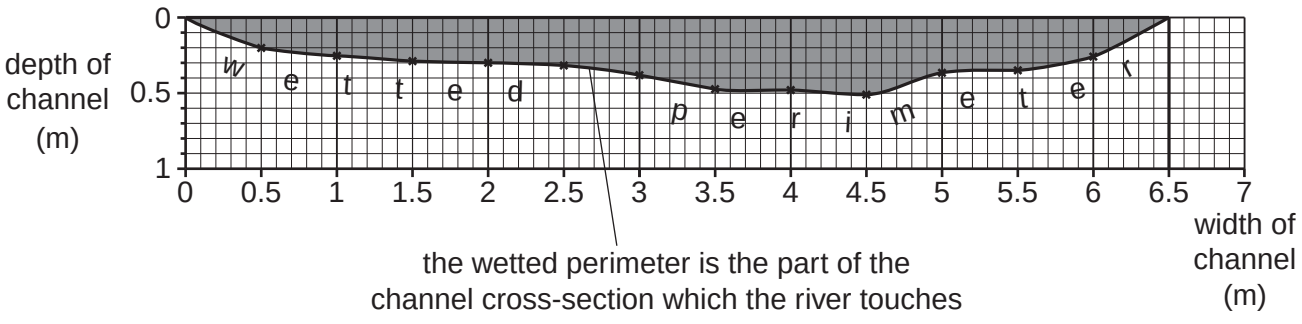


Fig. 9

For Examiner's Use

(ii) The wetted perimeter (the part of the channel cross-section which the river touches) is labelled on Fig. 9 at Site C. Measure the length of the wetted perimeter at this site.

…….. metres [2]

(iii) How and why will the speed of river flow be affected by contact with the river channel?

.....

.....

.....

..... [2]

(iv) The students made the conclusion that **Hypothesis 1**: *Width, depth and wetted perimeter of the river channel increase downstream* was correct.
How would you use their results to support this conclusion?

.....

.....

.....

..... [2]

(d) Next the students made some measurements to investigate **Hypothesis 2**:
There is a relationship between the size and the roundness of pebbles on the river bed.

For Examiner's Use

(i) At each site (A, B and C) a student selected 10 pebbles at random from the bed of the river. He then measured the size and roundness of the pebbles using the equipment shown in Fig. 10 (Insert). Suggest how he made the two measurements.

pebble size .....

.....

roundness of pebble .....

..... [2]

The results of the student's work are shown in Table 4 below.

Table 4

Site	A	B	C
Average (mean) pebble size (cm)	12	9	7.5
Average roundness score	2	3.5	4

(ii) Plot the average pebble size and roundness score for Site B on Fig. 11 below. [2]

Pebble Measurements

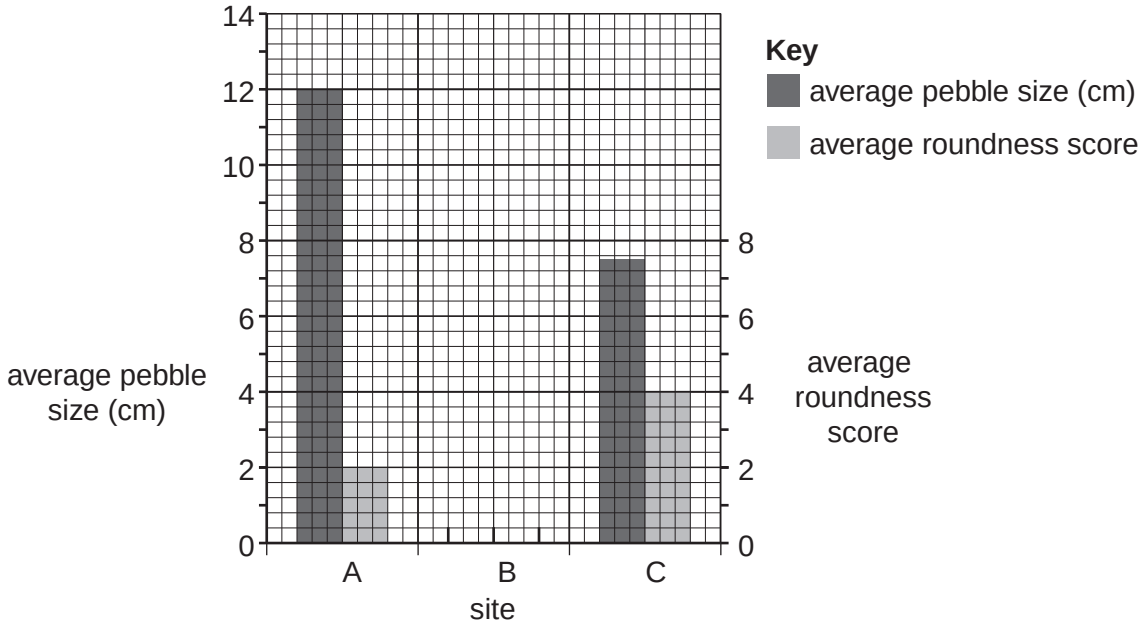


Fig. 11

(iii) What conclusion would the students make about **Hypothesis 2:** *There is a relationship between the size and the roundness of pebbles on the river bed?*

.....

.....

.....

..... [2]

(iv) Suggest why pebble size and roundness change downstream.

.....

.....

.....

..... [2]

(e) Suggest **four** ways that the students could have improved their data collection methods to make their results for both hypotheses more reliable.

1.....

.....

2.....

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3.....

.....

4.....

..... [4]

[Total: 30 marks]

8 A group of students was studying traffic flows in and out of the centre of a town. A map of the area being studied is shown in Fig. 12 below.

For Examiner's Use

Number of vehicles at each site

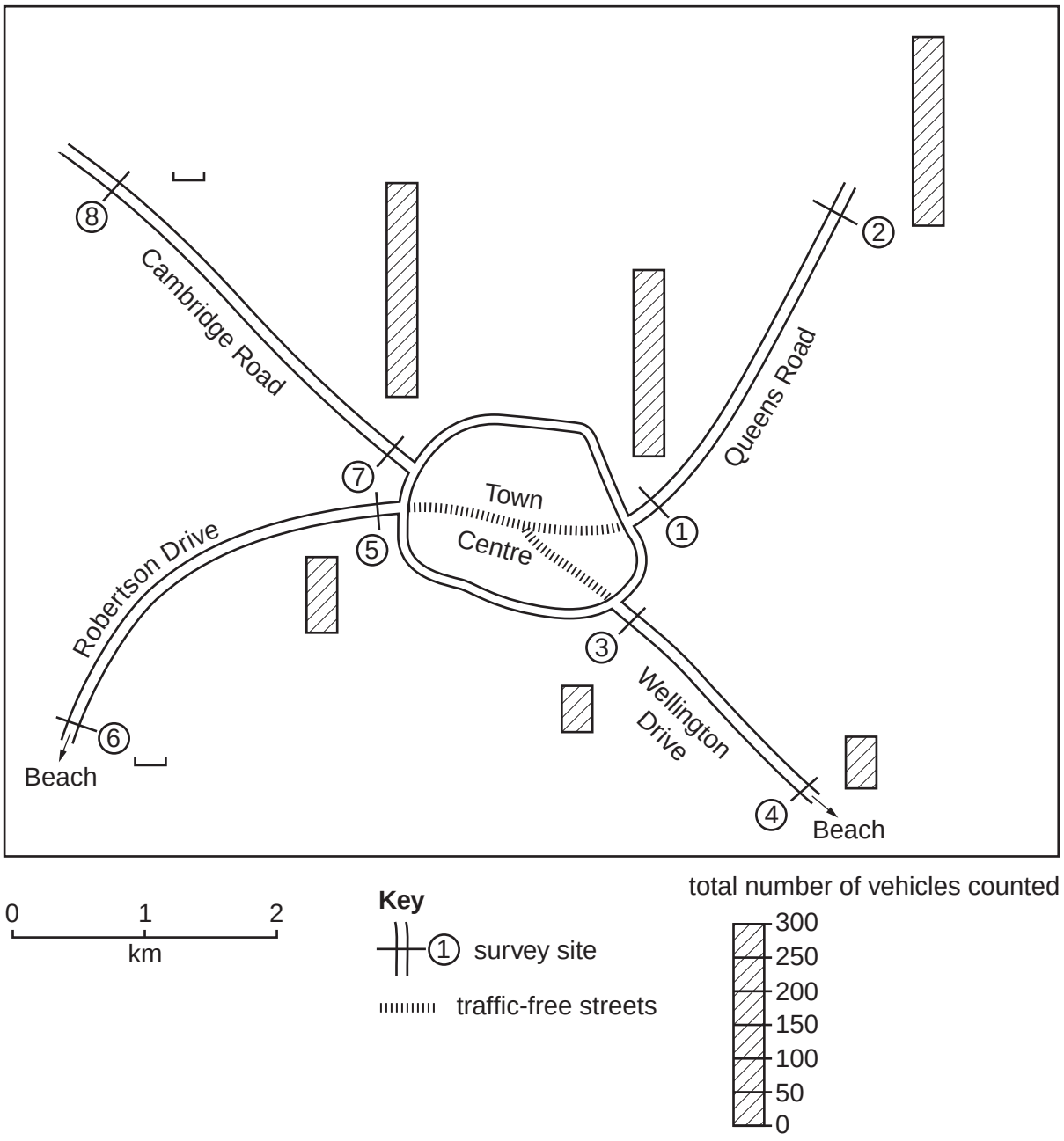

Fig. 12

The students wanted to investigate the following hypotheses:

Hypothesis 1: *The amount of traffic will be less further from the town centre.*

Hypothesis 2: *The amount of traffic going towards and going away from the town centre will change during the day.*

The students chose eight sites to do traffic surveys at 08.00 and 17.00. These are shown on Fig. 12.

For Examiner's Use

(a) (i) Suggest **four** things the students would need to do to plan for their traffic count.

1 .....

.....

2 .....

.....

3 .....

.....

4 .....

..... [4]

(ii) The students agreed to use a tally method to record vehicles passing each survey point. Give **two** reasons why this is a suitable recording method.

1 .....

.....

2 .....

..... [2]

For Examiner's Use

(b) The results of the students' survey are shown in Table 5 (Insert).

(i) On which road were the two highest totals?

..... [1]

(ii) Use the data in Table 5 to draw bars on Fig. 12 (page 19) to show the **total** number of vehicles counted at sites 6 and 8. [2]

(iii) What would be the students' conclusion about **Hypothesis 1:** *The amount of traffic will be less further from the town centre?*

Support your decision with evidence from Fig. 12 and Table 5.

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.....

..... [4]

(c) (i) To investigate **Hypothesis 2:** *The amount of traffic going towards and going away from the town centre will change during the day*, the students decided to use the results from **one** site on each of the four roads. These results are shown in Table 6 (Insert).

Look at Tables 5 and 6 and suggest **one** reason why they made this decision.

.....

..... [1]

(ii) The students plotted flow lines to show their results at sites 2, 4, 6 and 8. Fig. 13 below shows the traffic flows at 08.00, and Fig. 14 on page 23 shows the traffic flows at 17.00.

For Examiner's Use

Traffic flows at 08.00

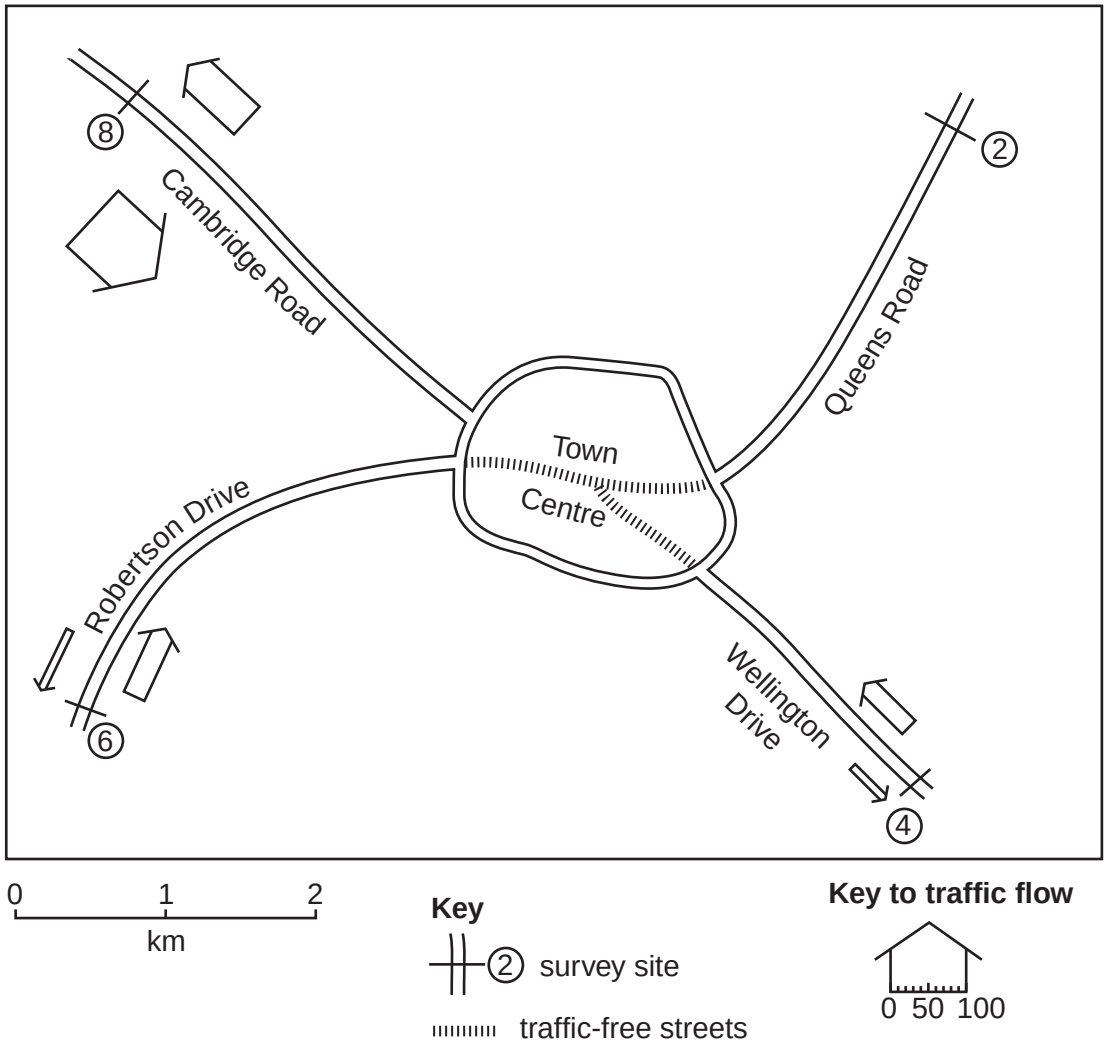

Fig. 13

Traffic flows at 17.00

For Examiner's Use

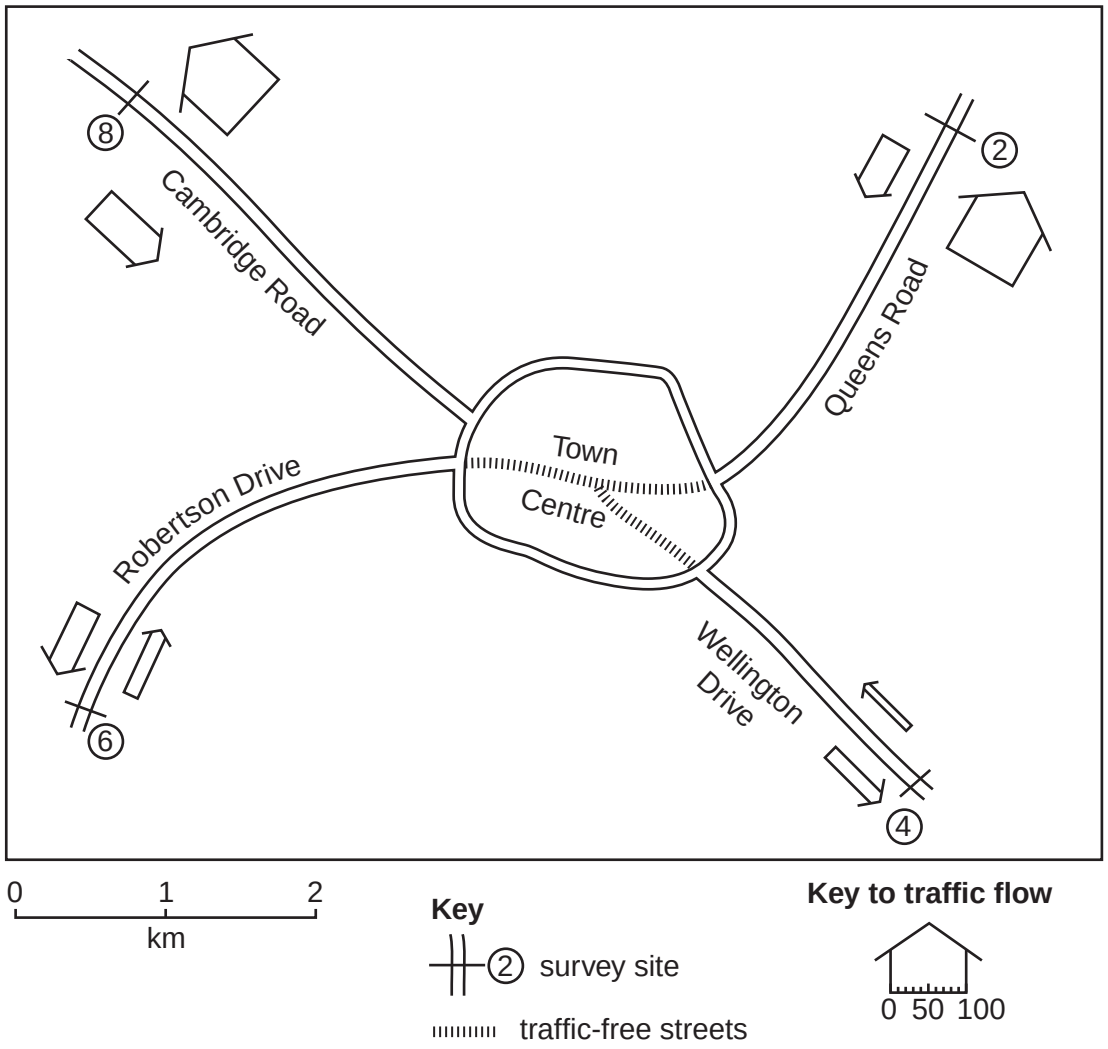

Fig. 14

Use the data from Table 6 (Insert) to draw two flow lines on Fig. 13 (page 22) to show the number of vehicles travelling along Queens Road at **08.00**. [2]

(iii) Use the data in Table 6 to complete below the rank order of the number of vehicles at 08.00. Write in the names of the three roads in the table below.

Rank	**Name of road**
Highest	Cambridge Road
Lowest	

[1]

For Examiner's Use

(iv) What conclusion would the students make about **Hypothesis 2:** *The amount of traffic going towards and going away from the town centre will change during the day?*
Use evidence from Table 6 and Figs 13 and 14 to support your answer.

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..... [4]

(d) Suggest **three** improvements to the data collection methods used in the students' investigation.

1.....

.....

2.....

.....

3.....

..... [3]

(e) Robertson Drive and Wellington Drive provide access to a popular beach. How and why might this cause traffic flow to vary?

.....

.....

.....

..... [2]

(f) To extend her fieldwork one student decided to do an investigation into what opinions people had about the traffic-free zone in the centre of the town.

(i) Suggest a suitable hypothesis.

.....

..... [1]

(ii) Complete the questionnaire, Fig. 15, below, with **three** questions which the student could ask to test her hypothesis. The first part of the questionnaire has been done for you. [3]

Traffic-free zone questionnaire

Questionnaire

As part of my Geography coursework, I am doing an investigation into the traffic-free zone of the town centre. Please answer the following questions.

Male ☐ Female ☐

Age: Under 20 ☐ 20 – 35 ☐ 36 – 50 ☐

51 – 65 ☐ Over 65 ☐

Question 1.

.....

.....

Question 2.

.....

.....

Question 3.

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Thank you for your time.

Fig. 15

[Total: 30 marks]

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