UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

GEOGRAPHY **0460/04**

Paper 4 Alternative to Coursework **October/November 2007**

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: Calculator
Ruler

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.

Answer **all** the questions.
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	
Q1	
Q2	
Total	

This document consists of **11** printed pages and **1** blank page.

1 Study Fig. 1. Students investigated the changes in the width and depth of a stream at three sites, Site A, Site B and Site C, as distance increased from the source.

(a) Complete the hypothesis for this investigation by selecting the correct words from the following: [1]

decrease increase shallower deeper

'The width will _____ *and the depth will become*

_____ *as distance from the source increases.'*

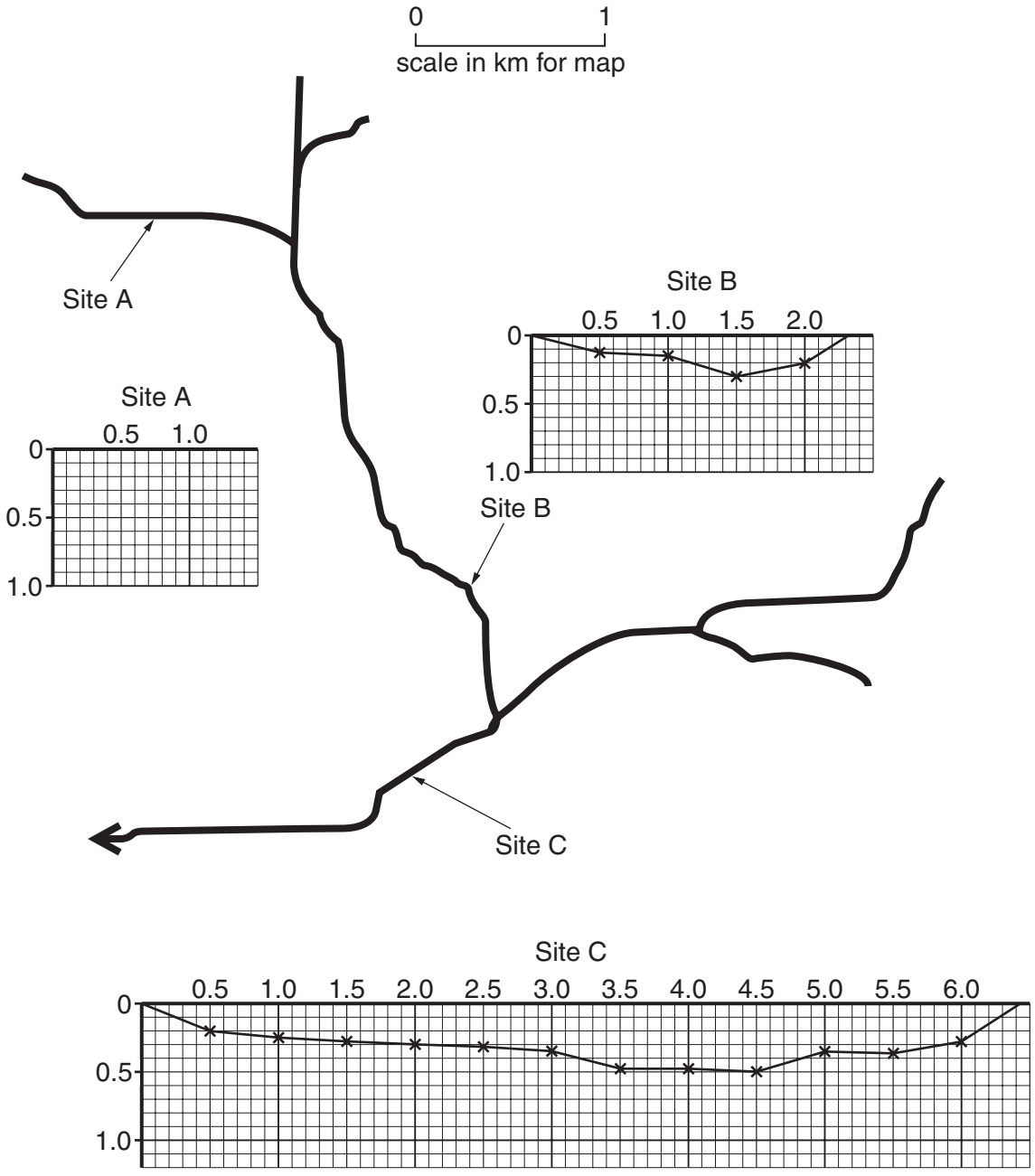

Fig. 1

(b) (i) How did the students measure the width of the stream at each site? Their equipment included two ranging poles and a measuring tape. Draw a labelled diagram, Fig. 2, for your answer.

Fig. 2 [3]

Table 1

		Depth in metres at distances from left bank													
Site	Total Width (m)	0.5m	1.0m	1.5m	2.0m	2.5m	3.0m	3.5m	4.0m	4.5m	5.0m	5.5m	6.0m	Wetted perimeter (m)	Discharge (m^3/sec)
A	1.40	0.15	0.10											1.50	0.01
B	2.31	0.12	0.15	0.30	0.20									2.50	0.09
C	6.42	0.20	0.25	0.28	0.30	0.32	0.35	0.48	0.48	0.50	0.35	0.36	0.28		1.25

(ii) At each site, the students also measured the depth of the stream systematically (every $\frac{1}{2}$ metre). The results of the investigation are shown in Table 1.

Draw a line graph for Site A on Fig. 1, to show the depth of the stream, using information from Table 1. [3]

(c) (i) The wetted perimeter is the amount of bank and bed which the stream water touches.

Use Fig. 1 to calculate the length of the wetted perimeter at Site C. Write your answer in Table 1. [2]

(ii) Explain how the wetted perimeter can change the speed of the river.

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.....[2]

(d) **(i)** The students also measured the velocity of the stream at each site. A floating object was timed travelling over a distance of 10 metres. The recording sheet for Site B is shown in Fig. 3. Fill in two other pieces of important information on the recording sheet.

Location	Site B			
Time in seconds of floating object over 10 metres				
18.0	16.8	15.4	18.5	13.3

Fig. 3 [2]

(ii) State a reason why the timing of the floating object over 10 metres was repeated five times.

Reason .....

.....[1]

(iii) The cross-sectional area is used to calculate the discharge. Look again at Fig. 1 and select the cross-sectional area most appropriate for Site B from the possibilities below. Underline your answer. [1]

$3.29\,m^2$ $0.32\,m^2$ $0.09\,m^2$

(e) Study Table 1 and Fig. 1 again. Describe how the following characteristics of the stream change from Site A to Site C. You should state data to support your descriptions.

Width

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Depth

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Discharge

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.....[6]

(f) The stream was measured again at the same sites after a storm, when 60 mm of rain fell in 48 hours. Describe how this storm would change the discharge and the processes of the stream.

Discharge change

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Processes change

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.....[3]

(g) **(i)** Describe in detail how the investigation could be improved. Suggest reasons for these improvements.

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.....[4]

(ii) Write a brief conclusion to this investigation.

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.....[2]

2 Students at an international school in Spain investigated migration and population increase in a coastal tourist town. The teacher suggested that the main reason for the population increase was the growth in worldwide tourism in the past 40 years.

(a) Suggest **three** reasons why there has been a growth in worldwide tourism in the past 40 years.

Reason 1 .....

.....

Reason 2 .....

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Reason 3 .....

.....[3]

The students wrote a short questionnaire to investigate the hypothesis

'people who moved to the tourist town came from countries close to Spain'.

The questionnaires were given to 100 parents at a school event. Study the questionnaire shown in Fig. 4.

Questionnaire to investigate migration

Q1	Were you born in this coastal town?	YES	
		NO	
Q2	How long have you lived here?	Under 10 yrs.	
		10 – 19 yrs.	
		20 – 29 yrs.	
		30 – 39 yrs.	
		40 – 49 yrs.	
		Over 50 yrs.	
Q3	In which country were you born?		

Fig. 4

(b) (i) Why was it important to ask Question 1 (shown in Fig. 4)?

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.....[1]

(ii) State **one** advantage and **one** disadvantage of the method of using parents as a source of data.

Advantage

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Disadvantage

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.....[2]

Table 2

Q1. Were you born in this coastal town?	Yes = 69%		No = 31%			
Q2. How long have you lived here?			Born in coastal town		Not born in coastal town	
	Under 10 yrs		0		13	
	10–19 yrs		0		10	
	20–29 yrs		6		4	
	30–39 yrs		19		4	
	40–49 yrs		33		0	
	Over 50 yrs		11		0	
Q3. In which country were you born?	USA	2	Norway	1	UK	6
	Brazil	2	Netherlands	2	Thailand	1
	Italy	2	France	1	Germany	2
	Austria	1	Tunisia	4	India	3
	Spain	4				

(c) (i) Table 2 shows the results of the questionnaire.

Using the results of Question 2 in Table 2, complete the bar graph, Fig. 5. Use the key and write a title to the graph.

Title .....

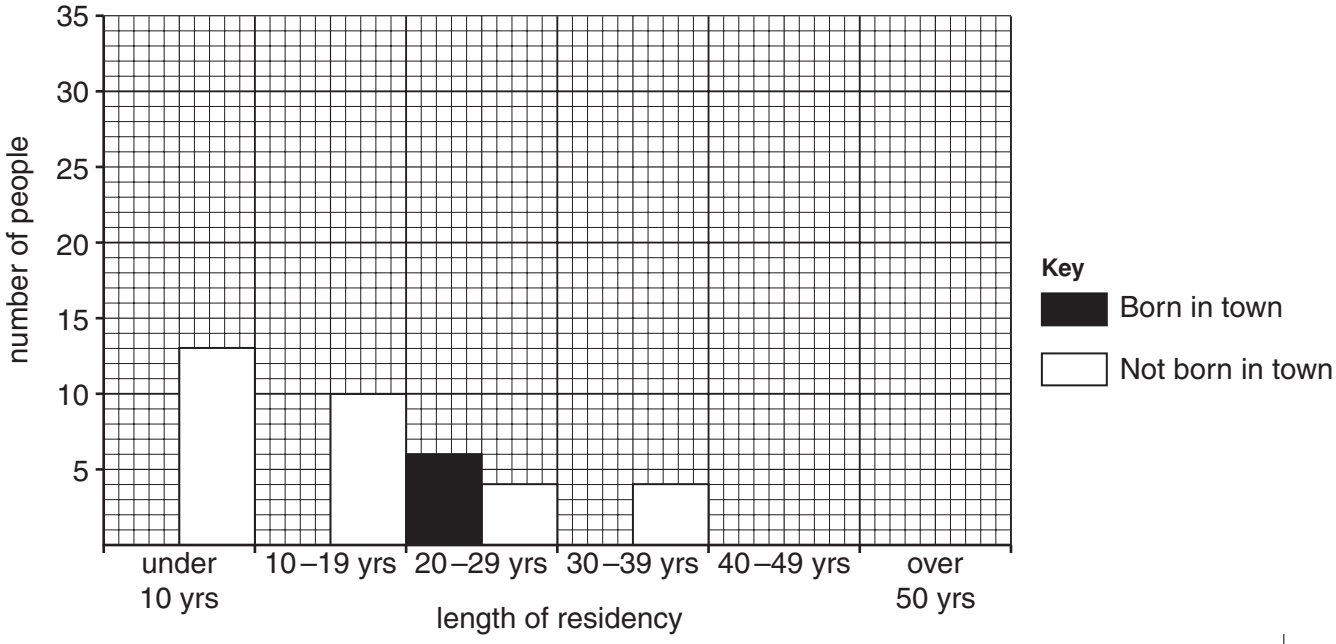

Fig. 5 [4]

(ii) Look again at the results of Questions 1 and 2 in Table 2 and the graph, Fig. 5. Describe the pattern shown by the data.

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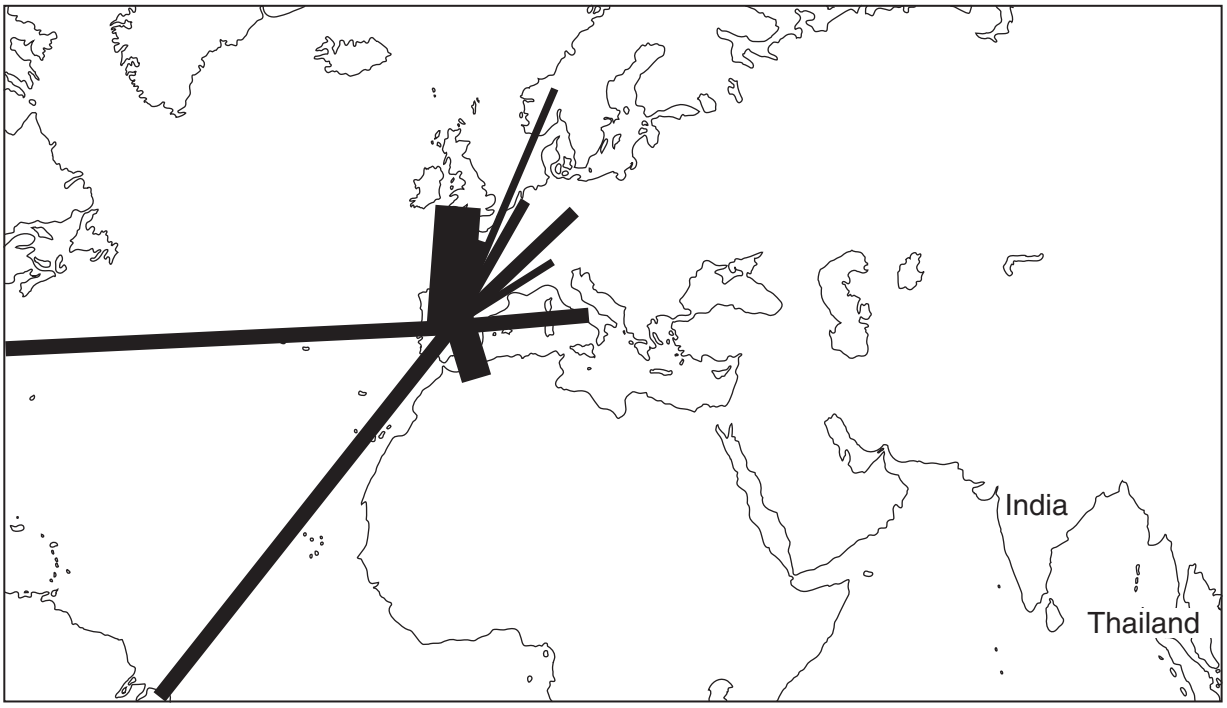
.....[3]



Scale: 1 mm = 1 person

Fig. 6

(d) (i) Study Fig. 6, which shows responses to Question 3 on the questionnaire. Add the flow lines for India and Thailand using the data in Table 2. [2]

Table 3

Europe	19
North America	2
South America	2
Asia	4
Africa	4

(ii) Study Table 3, which shows which continent the migrants came from. Suggest why so many of the migrants came from European countries.

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.....[3]

(iii) Write a conclusion to this investigation.

Is the hypothesis correct?

Give reasons for your answer. Support your reasons by stating data.

Suggest how the investigation could be improved.

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.....[5]

(e) The students decided to find out more about why people move to the coastal tourist town. They found information about the town on the internet. This information is shown on Fig. 7.

45 years ago this coastal town was a small fishing and market town. It had very few shops and just one hotel. Restaurants, bars and hotels were rapidly built from 1960 onwards. This provided many employment opportunities and an international airport opened in 1965. The roads were improved to cope with the increase in visitors, who wanted to enjoy the warm climate and local culture.

Fig. 7

(i) The internet information is secondary data. What is *secondary data*? State **two** other examples of secondary data.

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.....[2]

(ii) On Fig. 7 underline the pull factors of people moving to live in this tourist town. [2]

(iii) The students decided to write an additional question to investigate the different reasons why people moved to live in the town.

On Fig. 8 write a suitable question in the style of Question 2 (Fig. 4), as part of that questionnaire.

Fig. 8 [3]

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