UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER | | | | | |

CANDIDATE NUMBER | | | | |

GEOGRAPHY **0460/42**

Paper 4 Alternative to Coursework **May/June 2010**

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 on all the work you hand in.
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 ON ANY BARCODES.

Answer **all** the questions.
The Insert contains Fig. 1 for Question 1 and Figs 5, 6 and 7 for Question 2.
The Insert is **not** required by the Examiner.
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 **15** printed pages, **1** blank page, and **1** Insert.

1 Eight students wanted to find out more about people who lived in a squatter settlement which was near to their school in a city in Uttar Pradesh, India. The squatter settlement had grown rapidly in the last ten years, both in size and in the number of inhabitants.
They decided to investigate the following hypotheses:

For Examiner's Use

Hypothesis 1: *Most people who live in the squatter settlement came to the city to look for a paid job.*

Hypothesis 2: *Many of the people who live in the squatter settlement have paid jobs but they are poor people.*

The students decided that the best way to test their hypotheses was to ask some people who lived in the squatter settlement to give answers to a questionnaire.

(a) Their first task was to produce their questionnaire. An example of a completed questionnaire is shown in Fig. 1 (Insert).

(i) The students wanted to interview 100 people who had moved into the squatter settlement.
Describe a suitable method for the students to choose people to interview. Explain why you have chosen this method.

.....

.....

.....

.....

.....

.....[2]

(ii) Look at Fig. 1 (Insert). Suggest **two** reasons why the students gave people choices of age group to select from rather than just asking their age.

1 .....

.....

2 .....

.....[2]

(iii) The students considered including more questions in their questionnaire, but decided not to.
Suggest **two** appropriate questions they could have used to find out more about migration to the city.

1 .....

.....

2 .....

.....[2]

(b) Having completed their questionnaire the students produced a table of their results. Table 1 below shows a sample of the answers they obtained.

For Examiner's Use

Resident interviewed	Age-group	Gender	Reason for migration	Job	Income (rupees)
1	15 – 30	Female	Join other members of family	Domestic servant	Less than 20 000
2	15 – 30	Male	Get a paid job	Rickshaw driver	20 000 – 50 000
3	Under 15	Male	Better education	Student	Less than 20 000
4	Over 60	Female	Returning to place of birth	Shop owner	20 000 – 50 000
5	31 – 60	Female	Marry someone living here	Housewife	Less than 20 000
6					

Table 1

(i) The completed questionnaire shown in Fig. 1 (Insert) is from resident number 6. Enter this data onto Table 1. [2]

(ii) Each pair of students completed six questionnaires and then met with the others to check their method before doing any more questionnaires.
Suggest why this meeting was a good idea.

.....

.....

.....

..... [2]

(c) Having recorded the results from all 100 questionnaires in their results table, the students produced summaries of their results.

For Examiner's Use

Answers to Question 1 in the questionnaire

Why did you move to the city?	Number of residents
Look for a paid job	36
Better education opportunities for children	32
To marry someone living here	9
Better living conditions	9
Returning to place of birth	9
To join other members of the family	5
Total number of answers	**100**

Table 2

(i) Use the results in Table 2 to complete Fig. 2 below. [2]

Pie graph showing results of Question 1

Why did you move to the city?

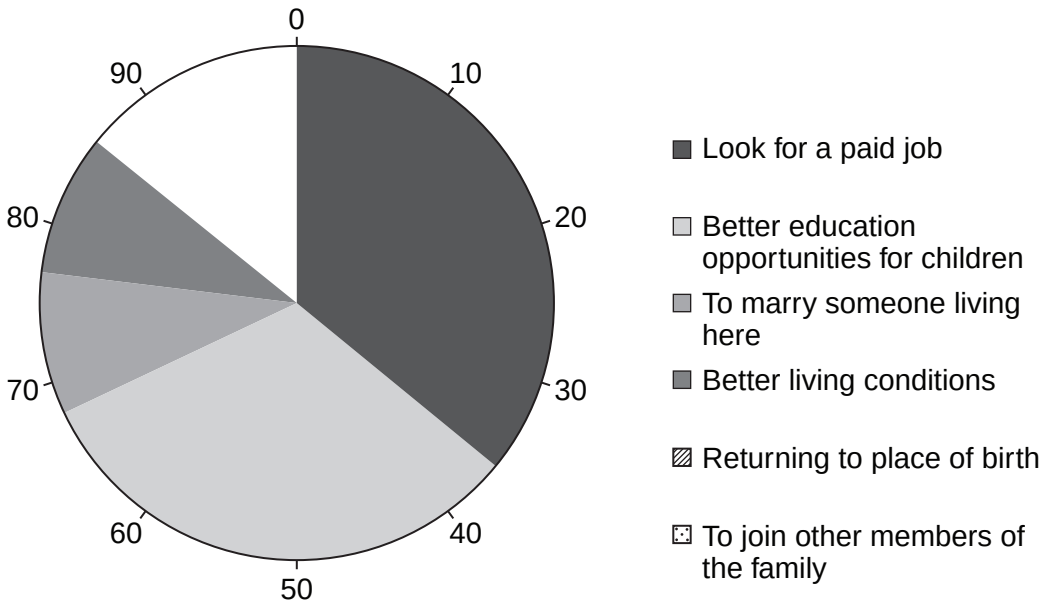


Fig. 2

(ii) To what extent do these results support **Hypothesis 1:** *Most people who live in the squatter settlement came to the city to look for a paid job?*
Support your answer with evidence from Table 2 and Fig. 2.

For Examiner's Use

.....

.....

.....

.....

.....

.....[3]

(d) Table 3 below summarises the answers to question 2 in the questionnaire.

Answers to Question 2 in the questionnaire

What is your job or occupation?	Number of residents
Shop owner	23
Domestic servant	15
Rickshaw driver	14
Housewife	13
Builder	9
Plumber	8
Student	7
Unemployed	7
Mechanic	4
Total number of answers	**100**

Table 3

(i) Use the results in Table 3 to complete Fig. 3 below. [2]

Bar graph showing results of Question 2

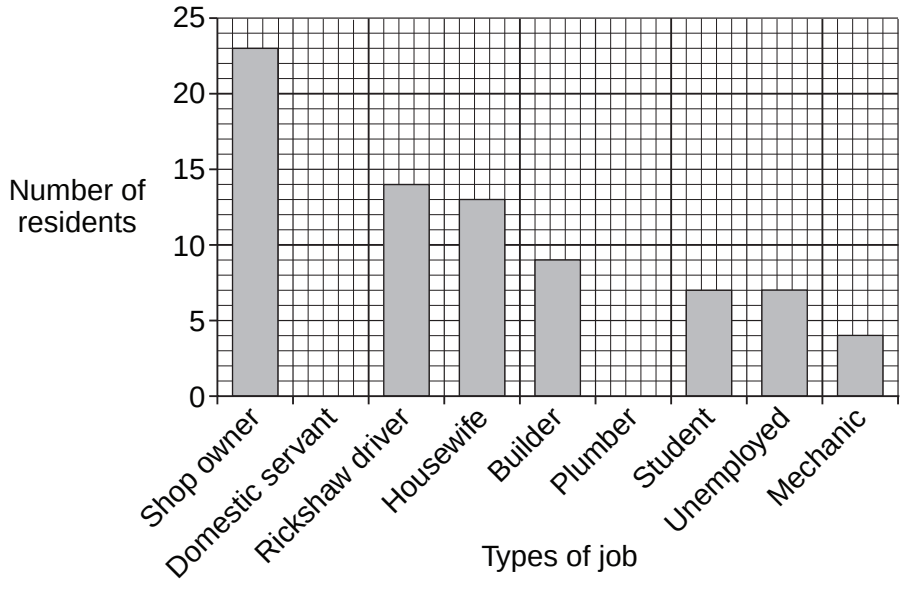


Fig. 3

(ii) Do the results shown in Fig. 3 support the first part of **Hypothesis 2:** *Many of the people who live in the squatter settlement have paid jobs?*
Explain your answer by using information from Fig. 3.

For Examiner's Use

.....

.....

.....

.....

.....

.....[2]

(e) Table 4 below summarises the answers to question 3 in the questionnaire.

How much money do you earn in one year?	**Number of residents**
Less than 20 000 rupees	27
20 000 – 50 000 rupees	73
More than 50 000 rupees	0
Total number of answers	**100**

1 000 rupees = 20 U.S. dollars ($)

Table 4

The students realised that in order to reach a conclusion about **Hypothesis 2** they would need to get some secondary data from the internet to make a comparison with these answers.

The students found some data on the internet which helped them to decide on a conclusion about the second part of **Hypothesis 2:** *Many of the people who live in the squatter settlement are poor people.*

This data is shown in Fig. 4 below.

Results of internet research

Average income of all residents of the city in Uttar Pradesh	54 000 rupees
Average income of the population of India	24 000 rupees

1 000 rupees = 20 U.S. dollars ($)

Fig. 4

Is **Hypothesis 2:** *Many of the people who live in the squatter settlement are poor people* correct? Use information from Table 4 and Fig. 4 to explain your answer.

For Examiner's Use

.....

.....

.....

.....

.....

.....[3]

(f) **(i)** Look again at Fig. 1 (Insert).
Suggest why the students included questions about age and gender.

.....

.....[1]

(ii) Suggest another hypothesis which the students might have included to make use of this information.

.....

.....[1]

(iii) Instead of putting the answers to question 3 into one of three categories the students could have just asked people how much money they earned in one year.
What might be **two** disadvantages of this new question?

1 .....

.....

2 .....

.....[2]

(g) Suggest **one** other aspect of life in a squatter settlement which students could investigate by a fieldwork technique other than a questionnaire.
Describe how they could carry out this investigation.

For Examiner's Use

.....

.....

.....

.....

.....

.....

.....

.....[4]

[Total: 30 marks]

2 A student was studying weather measurement in her lesson. She decided to do some fieldwork to measure and record rainfall and wind direction at her school. To extend her fieldwork she decided to compare her results with measurements recorded at the local airport, about 45 km away from school. The locations of the school and airport are shown in Fig. 5 (Insert).

For Examiner's Use

The student decided to investigate the following hypotheses:

Hypothesis 1: *Rainfall is greater when the wind is blowing from the south.*

Hypothesis 2: *Rainfall is greater at the airport than at the school.*

(a) The student decided to take weather readings at 09.00 every day for two weeks.

(i) Why did she want to take readings at the same time each day?

.....

..... [1]

(ii) Suggest **one** possible problem of keeping to her schedule.

.....

..... [1]

(b) To investigate **Hypothesis 1** the student used a rain gauge and a wind vane.

(i) She took daily readings of the amount of rain which had fallen. Fig. 6 (Insert) shows the rain gauge which she used. Explain how she used it.

.....

.....

.....

.....

.....

..... [3]

(ii) Suggest **two** factors which the student should have considered when deciding where to position the rain gauge.

1 .....

.....

2 .....

..... [2]

For Examiner's Use

(iii) As well as measuring the amount of rain which had fallen, the student also used a wind vane to record the wind direction. The wind vane shown in Fig. 7 (Insert) was attached to the roof of the school.

Complete the sentences below to explain how the wind vane works.

The letters (N, E, S, W) show ..... .

The arrow shows ..... .

The wind vane is located on the roof so that .....

..... . [3]

(iv) Suggest **one** other way the student could have measured wind direction if the wind vane had not been available.

.....[1]

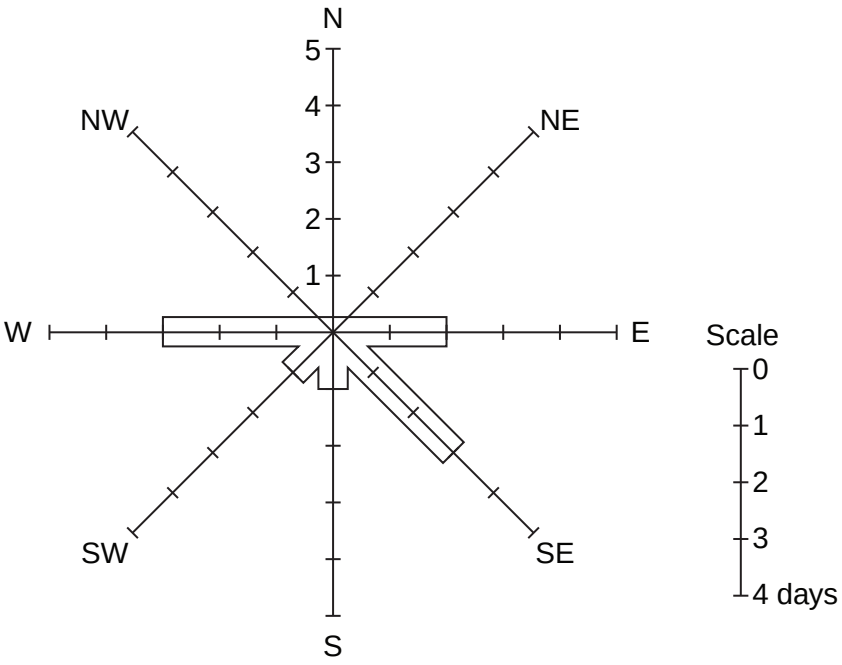
(v) The results of the student's investigation are shown in Table 5 below.

Day	Rainfall (mm)	Wind direction
1	1	W
2	1	W
3	0	N
4	1	NW
5	0	W
6	0	NW
7	8	E
8	12	SE
9	1	NW
10	6	SW
11	5	S
12	4	E
13	7	SE
14	6	SE
Total	52	
Average per day	3.7	

Table 5

Use the results from Table 5 to complete Fig. 8, the wind rose graph, below. Draw in the bars for NW and N. [2]

For Examiner's Use



Wind direction at school location
(number of days)

Fig. 8

(vi) The student wanted to link the results of her two investigations so she plotted them on the scatter graph, Fig. 9 below. Complete the graph by adding the results for east winds from Table 5. [2]

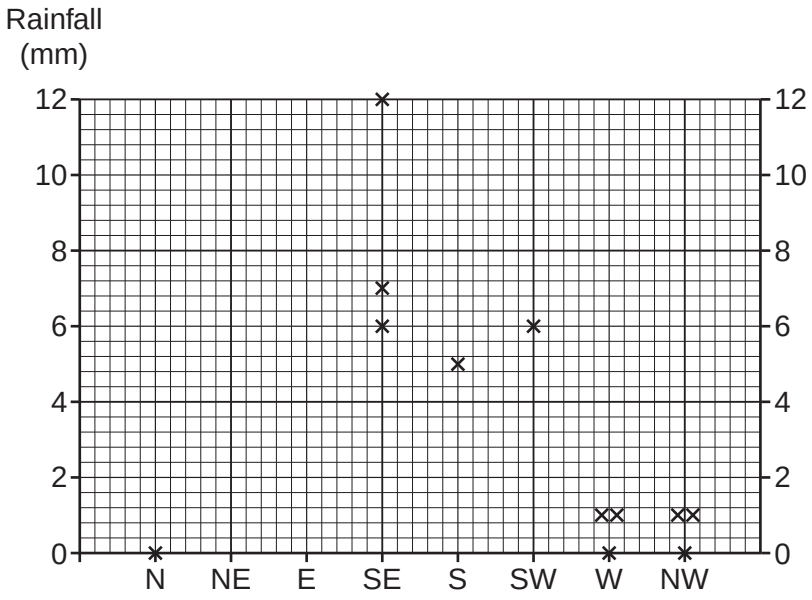


Fig. 9

(vii) **Hypothesis 1:** *Rainfall is greater when the wind is blowing from the south.*
Do the results of the investigation agree with this hypothesis? Support your conclusion with data from Fig. 9.

For Examiner's Use

.....

.....

.....

.....

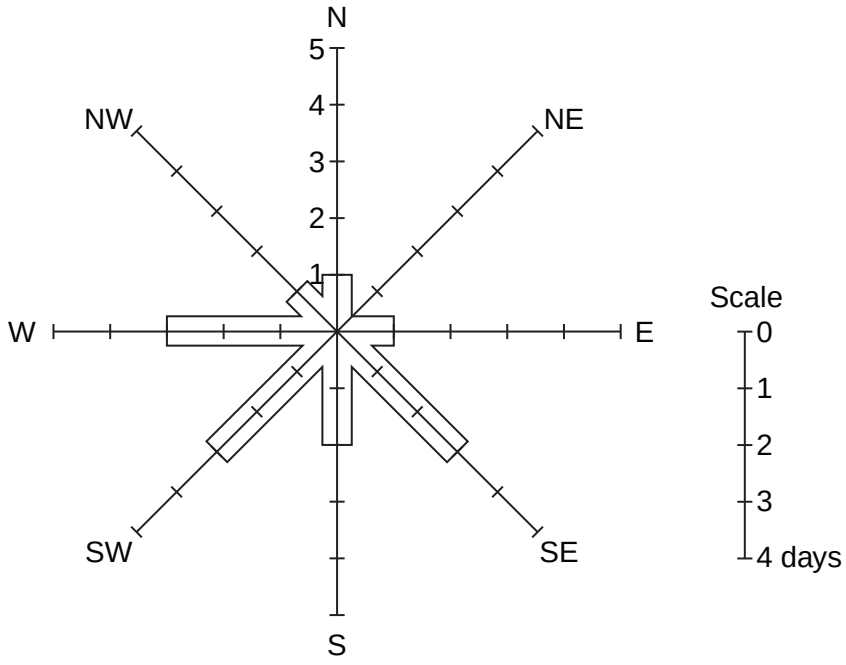
.....

.....[3]

(c) To investigate **Hypothesis 2:** *Rainfall is greater at the airport than the school*, the student found some secondary data about rainfall at the local airport to compare with her primary data. This data is shown in Table 6 and Fig. 10.

Day	Rainfall (mm)	Wind direction
1	3	SW
2	1	W
3	0	N
4	2	NW
5	0	SW
6	2	W
7	11	E
8	15	S
9	2	W
10	9	SW
11	7	S
12	4	SE
13	9	SE
14	7	SE
Total	72	
Average per day		

Table 6



Wind direction at airport location
(number of days)

Fig. 10

(i) How is primary data different from secondary data?

.....

.....

.....

..... [2]

(ii) Calculate the average rainfall per day at the airport. Insert the figure in Table 6. [1]

(iii) In order to compare the amount of rainfall at school and the airport, the student plotted the dispersion graph shown in Fig. 11, below.

For Examiner's Use

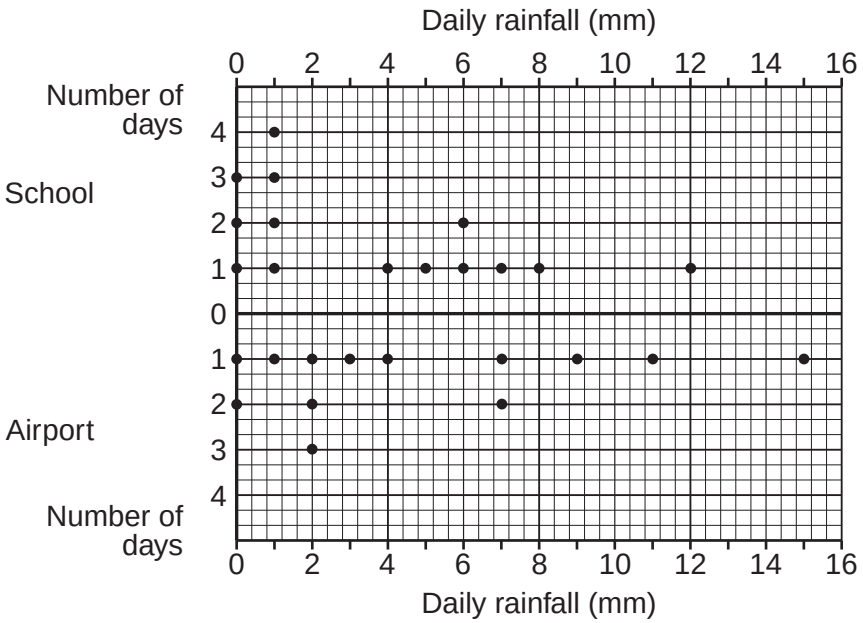


Fig. 11

Complete the dispersion graph for day 13 at the airport by using rainfall data from Table 6. [1]

(iv) Use Fig. 11 to describe **two** differences between the rainfall patterns at the school and the airport.

1 .....

.....

2 .....

.....[2]

(v) The student reached the conclusion that **Hypothesis 2** is correct:
Rainfall is greater at the airport than at the school.
Suggest why rainfall is greater at the airport. Use Fig. 5 (Insert) and Figs. 8 and 10 to help you to answer.

For Examiner's Use

.....

.....

.....

.....

.....

.....[3]

(d) When the student had completed her tasks she wondered how she could improve the reliability of her results. Suggest some ways she could improve the reliability of her results.

.....

.....

.....

.....

.....

.....[3]

[Total: 30 marks]

BLANK PAGE