



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE
NAME

CENTRE
NUMBER

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CANDIDATE
NUMBER

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GEOGRAPHY

2217/22

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 ON 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 Photographs A and B for Question 3, Fig. 7 for Question 7 and Figs 11, 12 and 13 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 **27** printed pages, **5** blank pages and **1** Insert.



Section A

Answer **all** questions in this section.

For
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Use

1 Study the 1:50 000 map of Port Antonio, Jamaica.

(a) (i) List **four** services found at Mount Pleasant, on the western edge of the map.

.....
.....
.....
..... [2]

(ii) Give the four-figure grid reference of the square that contains most of the services at Mount Pleasant.

..... [1]

(b) (i) Give the six-figure grid reference for the summit of Pumpkin Hill, which is in the south of the extract.

..... [1]

(ii) Measure the bearing and straight line distance of the water tank at Cuffie Head (010696) from the water tank at Durham (005643).

Bearing degrees

Distance metres. [2]

(c) (i) Study the mouth of the Rio Grande in grid square 0172. Name the coastal landform to the east of the river mouth in 0172.

..... [1]

(ii) What is the direction of longshore drift as suggested by this coastal landform?

..... [1]

(d) West Harbour can be found in grid square 0769. Suggest why this is a good location for a port.

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..... [3]

(e) Study the Rio Grande river and its valley, from the bridge at Fellowship (070650) to the bridge at St Margaret's Bay (019718). Describe the river and its valley using the following headings:

(i) river features,

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..... [4]

(ii) vegetation and agriculture in valley,

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..... [3]

(iii) other evidence of human activity.

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..... [2]

[Total: 20 marks]

2 Study Fig. 1, which shows natural hazards occurring in India.

For
Examiner's
Use

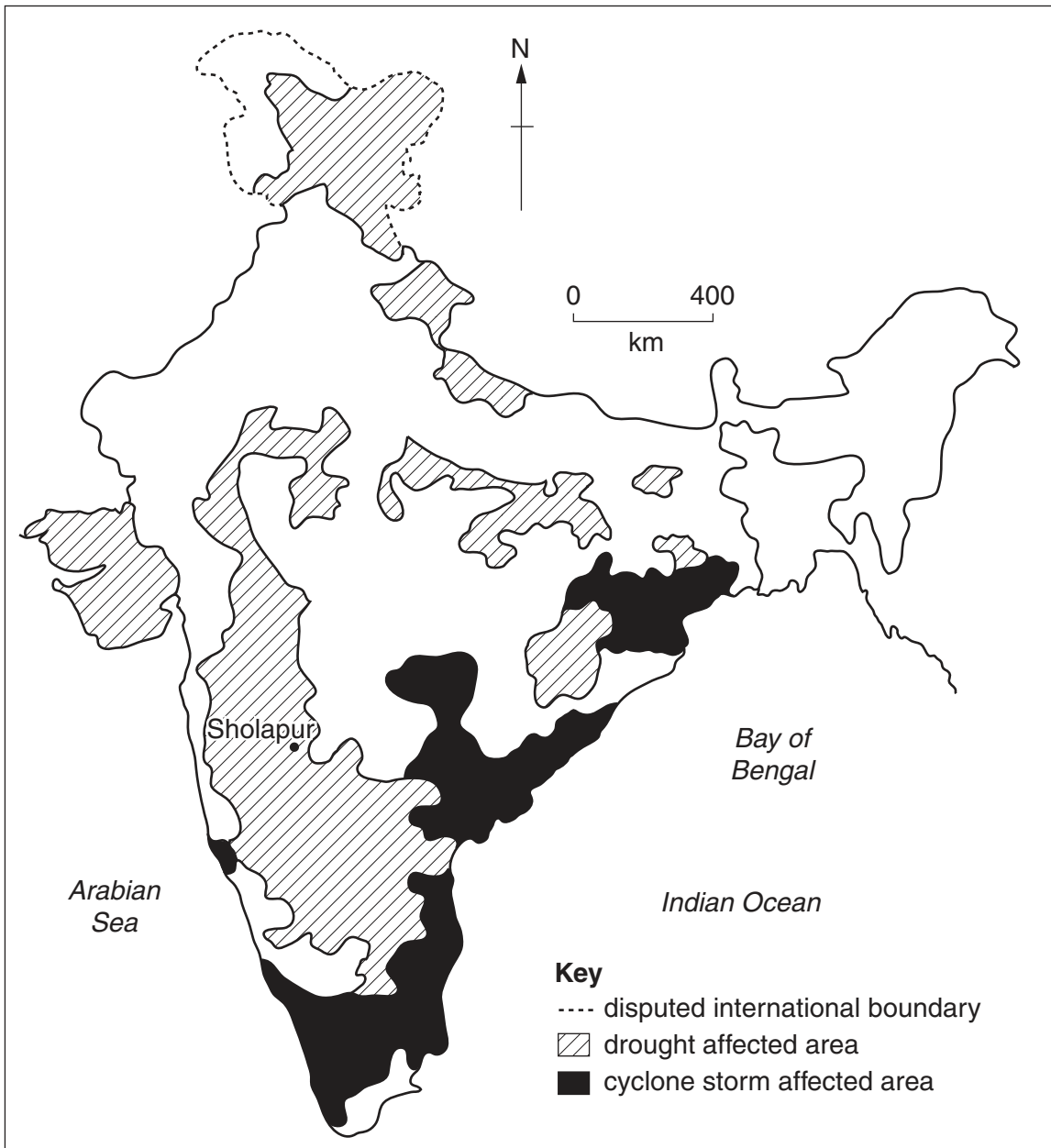


Fig. 1

(a) (i) Describe the distribution of areas affected by tropical storms (cyclones).

.....
 [1]

(ii) Tropical storms approach mainly from the sea. Draw an arrow on Fig. 1 to suggest the path of the storms approaching India. [1]

(b) Describe the distribution of drought affected areas.

.....

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..... [2]

(c) Study Fig. 2, which shows the climate of Sholapur. Sholapur is located in an area affected by drought but where major rivers sometimes flood.

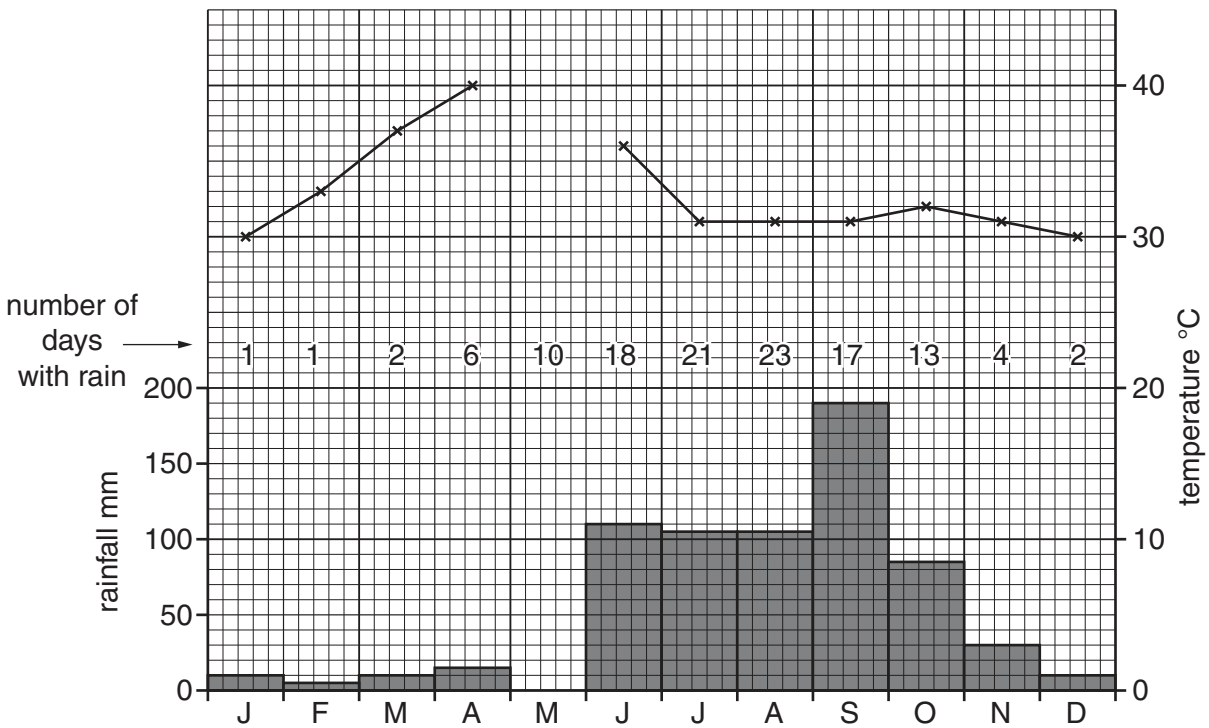


Fig. 2

(i) Complete Fig. 2 to show 25 mm of rain and 40°C in May. [1]

(ii) How many months experienced less than 20 mm of rain?

..... [1]

(iii) In which month is flooding most likely? Give a reason for your answer.

.....

.....

..... [2]

[Total: 8 marks]

3 Study Photograph A (Insert) of Lahore, a city in Pakistan, and Photograph B (Insert) of a town in the United Kingdom.

(a) Both photographs show the same urban zone. Name the zone and give reasons for your answer.

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.....[3]

(b) (i) Describe **three** differences between the urban areas shown on these photographs.

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.....[3]

(ii) Suggest reasons for **two** of these differences.

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.....[2]

[Total: 8 marks]

- 4 Study Fig. 3, which shows a section of coastline. Samples of beach material were taken at points A, B and C.

For
Examiner's
Use

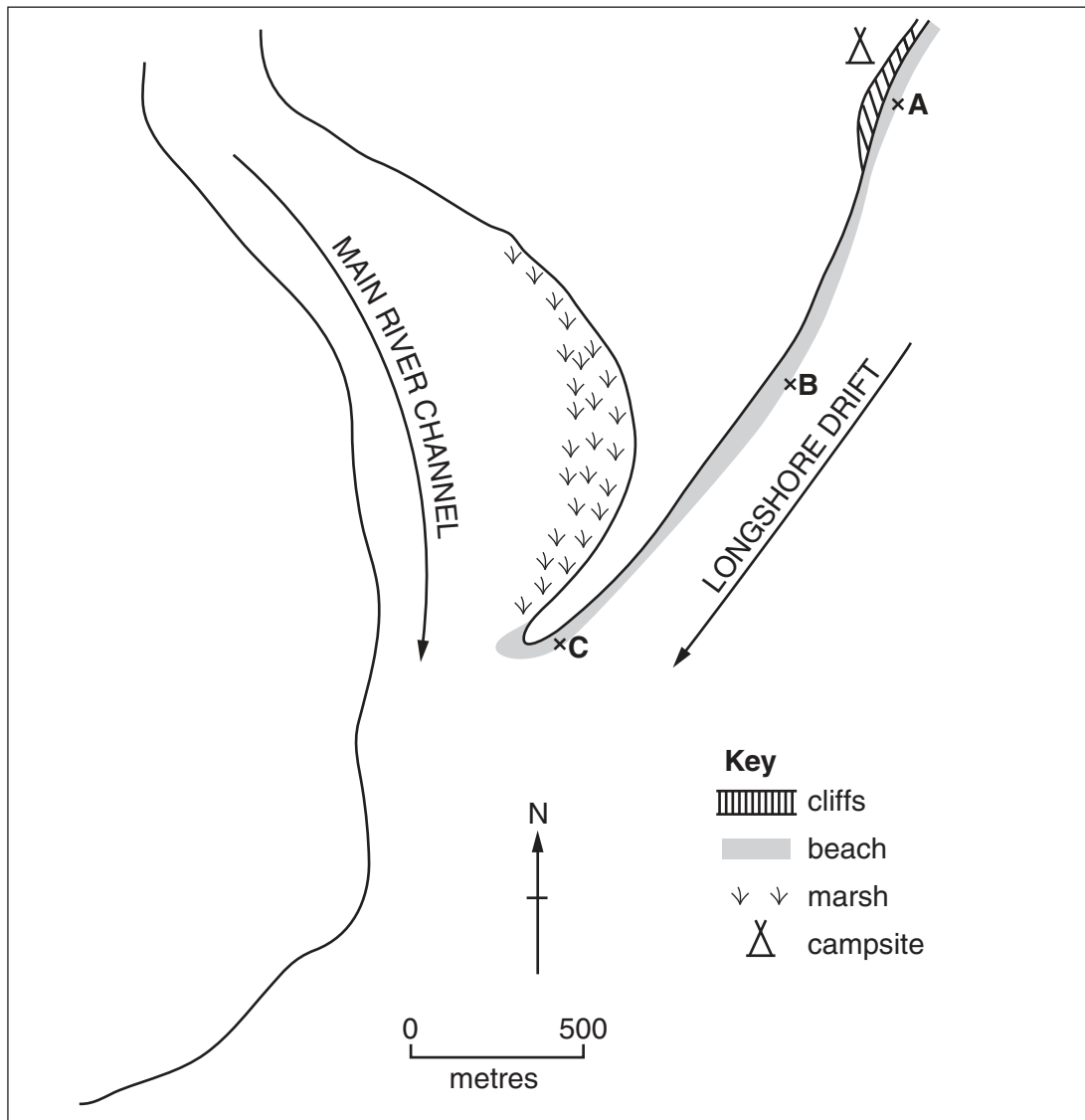


Fig. 3

- (a) Using the key, complete Fig. 4 to show that the sample at B contained 30% pebbles, 50% sand and 20% other materials.

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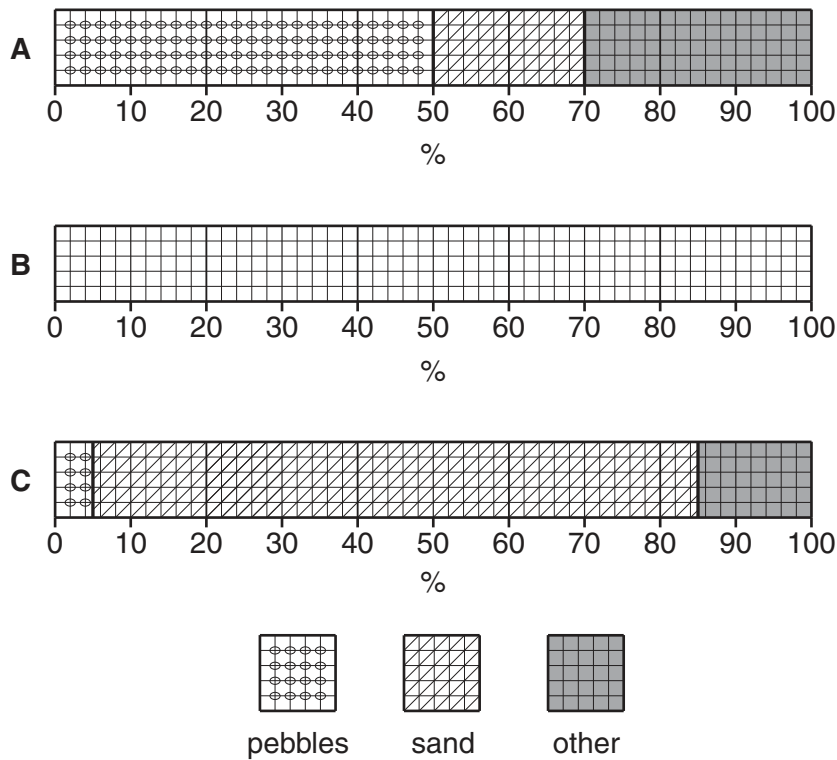


Fig. 4

[2]

- (b) (i) Describe the change in the percentage of pebbles along the beach.

.....
 [1]

- (ii) Describe the change in the size of beach material along the beach.

.....
 [1]

- (iii) "Other" material includes litter, seaweed and shells. Suggest why there is less "other" material at Site C than Site A.

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 [2]

(c) Suggest reasons for the development of the marsh.

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..... [2]

For
Examiner's
Use

[Total: 8 marks]

5 Study Fig. 5, which shows where tourists to Australia came from in 2005.

(a) (i) Complete the map to show that there were 1 400 000 visitors from Europe in 2005. [2]

(ii) How many tourists came from the Americas region in 2005?
.....[1]

(iii) Suggest **two** reasons for the pattern shown.
.....
.....
.....
.....[2]

(iv) Many visitors from the northern hemisphere arrive in January or February. Suggest a reason for this.
.....
.....[1]

(b) (i) The Great Barrier Reef is a tourist destination in Australia. On which coastline is it located?
.....[1]

(ii) Use **only** evidence from the map to explain why the sea temperature is suitable for coral growth in this part of the sea.
.....
.....[1]

[Total: 8 marks]

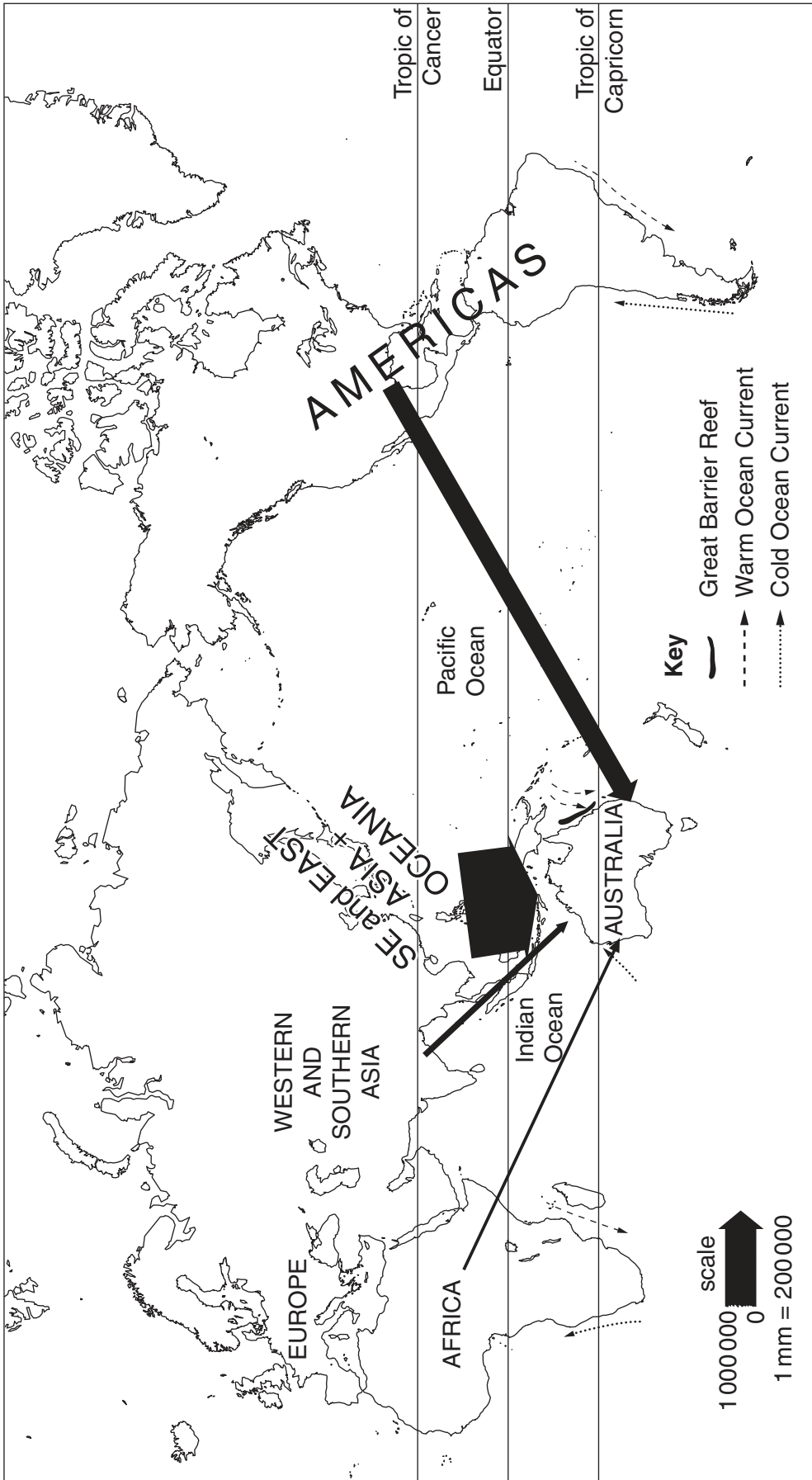


Fig. 5

6 Study Fig. 6, which shows population density in Brazil.

For
Examiner's
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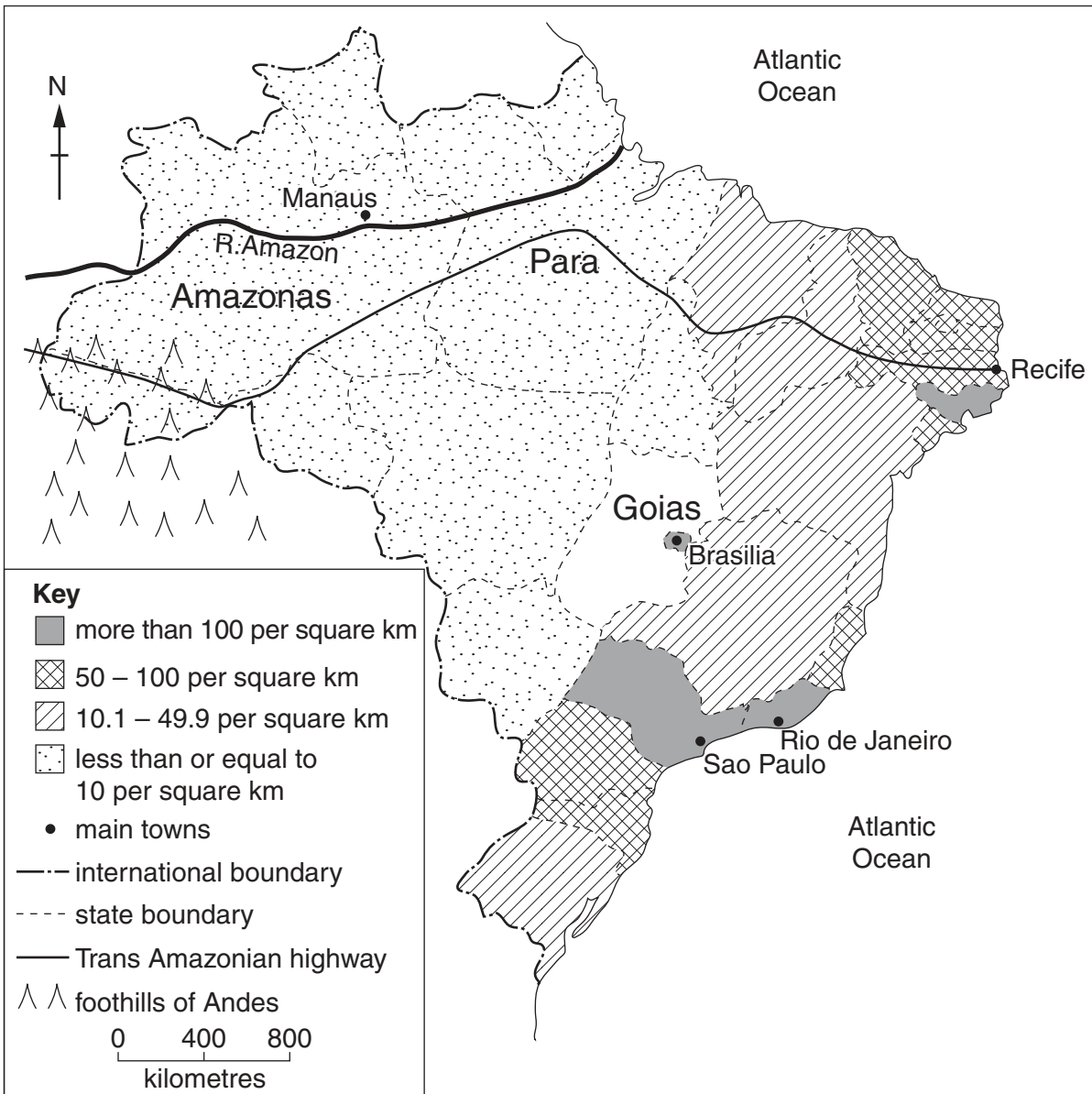


Fig. 6

(a) Complete the map to show that the state of Goiás has a population density of 16.9 people per square kilometre. [1]

(b) Para state has a population of 7 200 000 and an area of 1 200 000 square kilometres. Calculate the population density.

.....
 people per square kilometre [1]

(c) Describe the distribution of the areas with more than 50 people per square kilometre.

For
Examiner's
Use

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.....[3]

(d) The state of Amazonas has an average population density of 2.1 people per square kilometre but density varies greatly within the state. Suggest why the population density varies within the state.

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.....[3]

[Total: 8 marks]

Section B

Answer **one** question in this section.

- 7 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:

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. 7 (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.

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.....[2]

- (ii) Look at Fig. 7 (Insert). Suggest **two** reasons why the students gave people choices of age group to select from rather than just asking their age.

1

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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.

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. 7 (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.

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..... [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. 8 below.

[2]

Pie graph showing results of Question 1

Why did you move to the city?

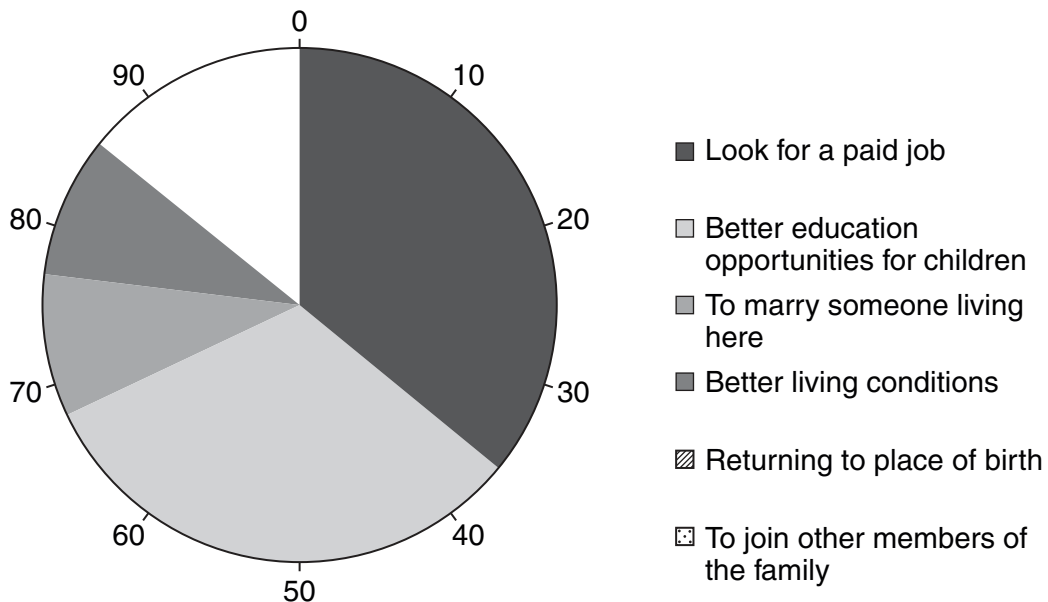


Fig. 8

- (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. 8.

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[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. 9 below. [2]

Bar graph showing results of Question 2

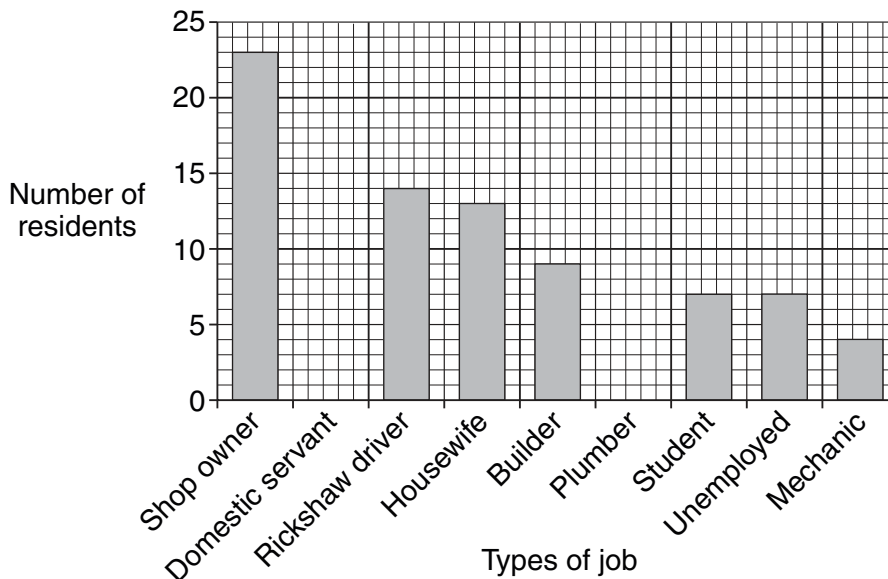


Fig. 9

- (ii) Do the results shown in Fig. 9 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. 9.

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.....

.....[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. 10 below.

Results of internet research

Average income of all residents in 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. 10

Is **Hypothesis 2**: *Many of the people who live in the squatter settlement are poor people* correct? Use information from Table 4 and Fig. 10 to explain your answer.

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Examiner's
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.....[3]

(f) (i) Look again at Fig. 7 (Insert).
Suggest why the students included questions about age and gender.

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.....[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*

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[4]

[Total: 30 marks]

8 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. 11 (Insert).

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. 12 (Insert) shows the rain gauge which she used. Explain how she used it.

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.....
.....[3]

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

1
.....
2
.....[2]

- (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. 13 (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]

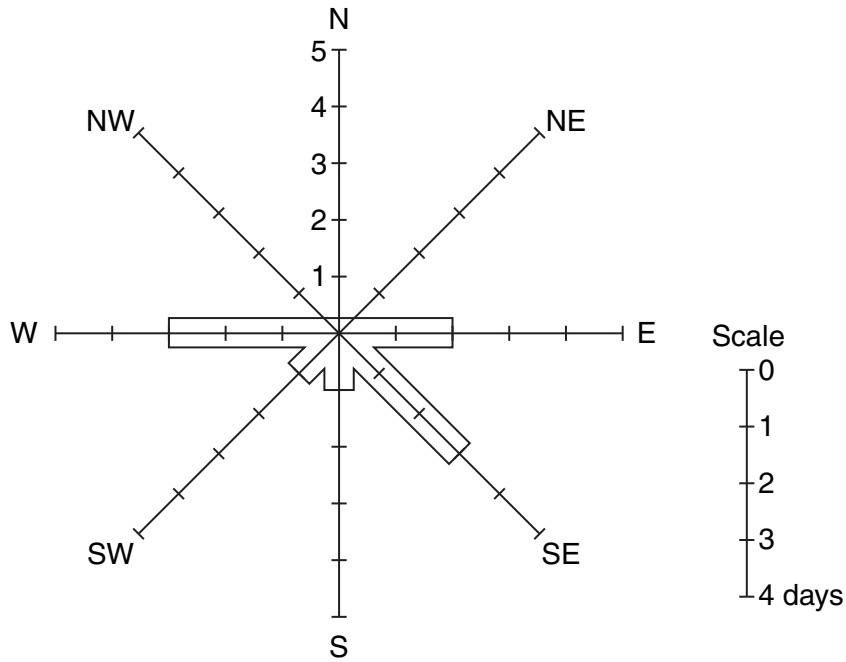
- (v) The results of the student's investigation are shown in Table 5 below.

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. 14, 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. 14

(vi) The student wanted to link the results of her two investigations so she plotted them on the scatter graph, Fig. 15 below. Complete the graph by adding the results for east winds from Table 5. [2]

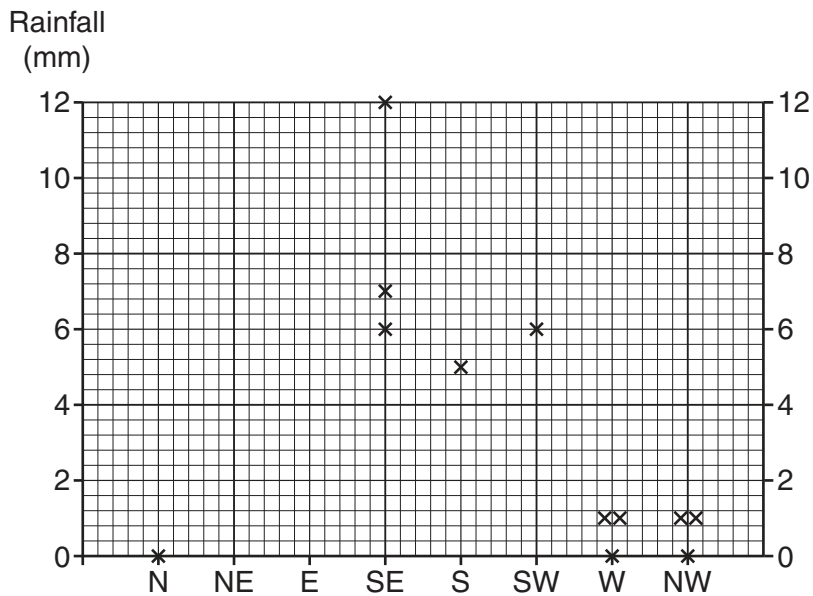


Fig. 15

(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. 15.

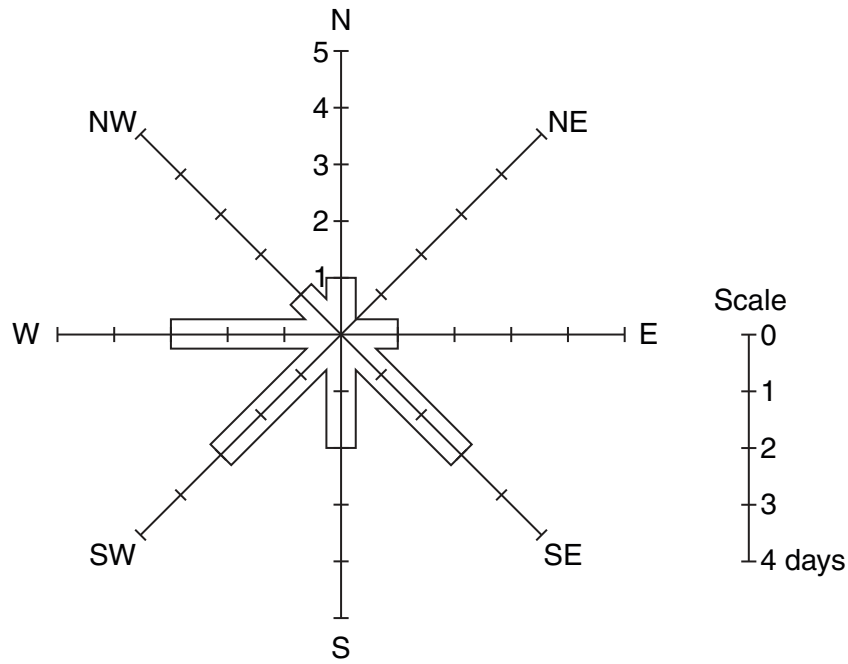
.....

[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. 16.

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. 16

(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. 17, below.

For
Examiner's
Use

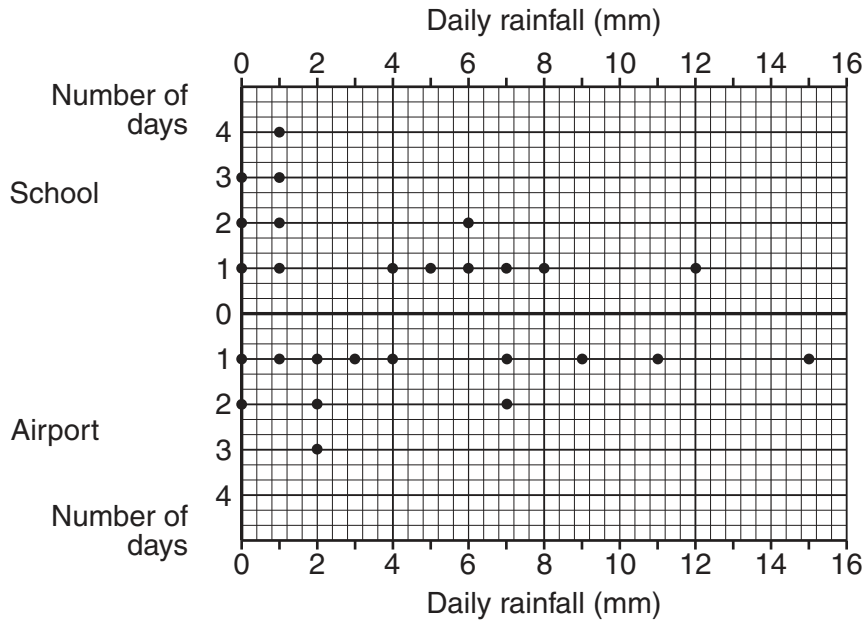


Fig. 17

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

- (iv) Use Fig. 17 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. 11 (Insert) and Figs. 14 and 16 to help you to answer.

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.....[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.

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.....[3]

[Total: 30 marks]

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Copyright Acknowledgements:

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Question 3 Photograph A	© Pervaiz Inayat; Photograph of Lahore, Pakistan; 2009.
Question 3 Photograph B	© Sandra Bird; © UCLES.
Question 5 Figure 5	© http://histgeo.ac-aix-marseille.fr/carto/centrepacifique/centrepacifique02.gif , 2009.

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