Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

5377966660

GEOGRAPHY **0460/41**

Paper 4 Alternative to Coursework **May/June 2015**

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 an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

The Insert contains Fig. 2 and Table 4 for Question 1, and Photograph A, Figs 7 and 10 and Table 6 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.

The syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **18** printed pages, **2** blank pages and **1** Insert.

CAMBRIDGE International Examinations

1 Students from Hyderabad, a city in India, were studying migration. In Hyderabad there are many IT (Information Technology) and high-technology industries which attract migrants to this rapidly growing city.

(a) Fig. 1 below shows the employment structure of Hyderabad and India overall.

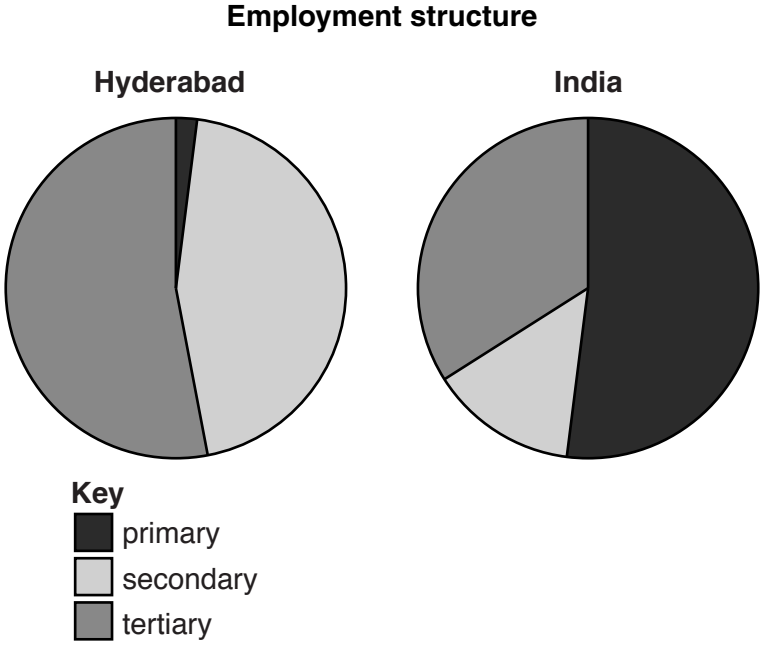

Fig. 1

Identify **two** differences between the employment structures of Hyderabad and India.

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2 .....

.....[2]

The students wanted to find out more about migration into two areas of Hyderabad. Jayabheri is a new area on the edge of the city and Begumpet is an older area nearer to the city centre. They decided to test the following hypotheses:

Hypothesis 1: *The pattern of migration into the two areas is different.*

Hypothesis 2: *People who have moved into each area think that they are good places in which to live.*

(b) To test their hypotheses the students did a questionnaire survey with 50 people in each area. Name and describe a suitable sampling method to identify 50 people to survey.

Name of sampling method .....

Description of method .....

.....[2]

(c) The questionnaire is shown in Fig. 2 (Insert).

(i) Explain why the first question the students asked was 'Have you migrated to live in this area?'.

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The results of Question 2 are shown below.

Table 1

Results of Question 2
Where did you migrate from when you came to Hyderabad?

Migrants to Jayabheri	
Area of the world	Number of migrants
USA	34
Europe	10
Japan	4
India (details shown below)	2

Migrants to Begumpet	
Area of the world	Number of migrants
India (details shown below)	29
Other Asian countries	10
USA	5
Europe	4
Australia	2

Migrants to Jayabheri	
Indian state	Number of migrants
Andhra Pradesh	2

Migrants to Begumpet	
Indian state	Number of migrants
Andhra Pradesh	16
Tamil Nadu	5
Maharashtra	3
Gujarat	2
Rajasthan	2
Bihar	1

(ii) Use the results in Table 1 to complete Fig. 3A to show the number of migrants to Jayabheri from Europe. [1]

Migration to Hyderabad from different areas of the world

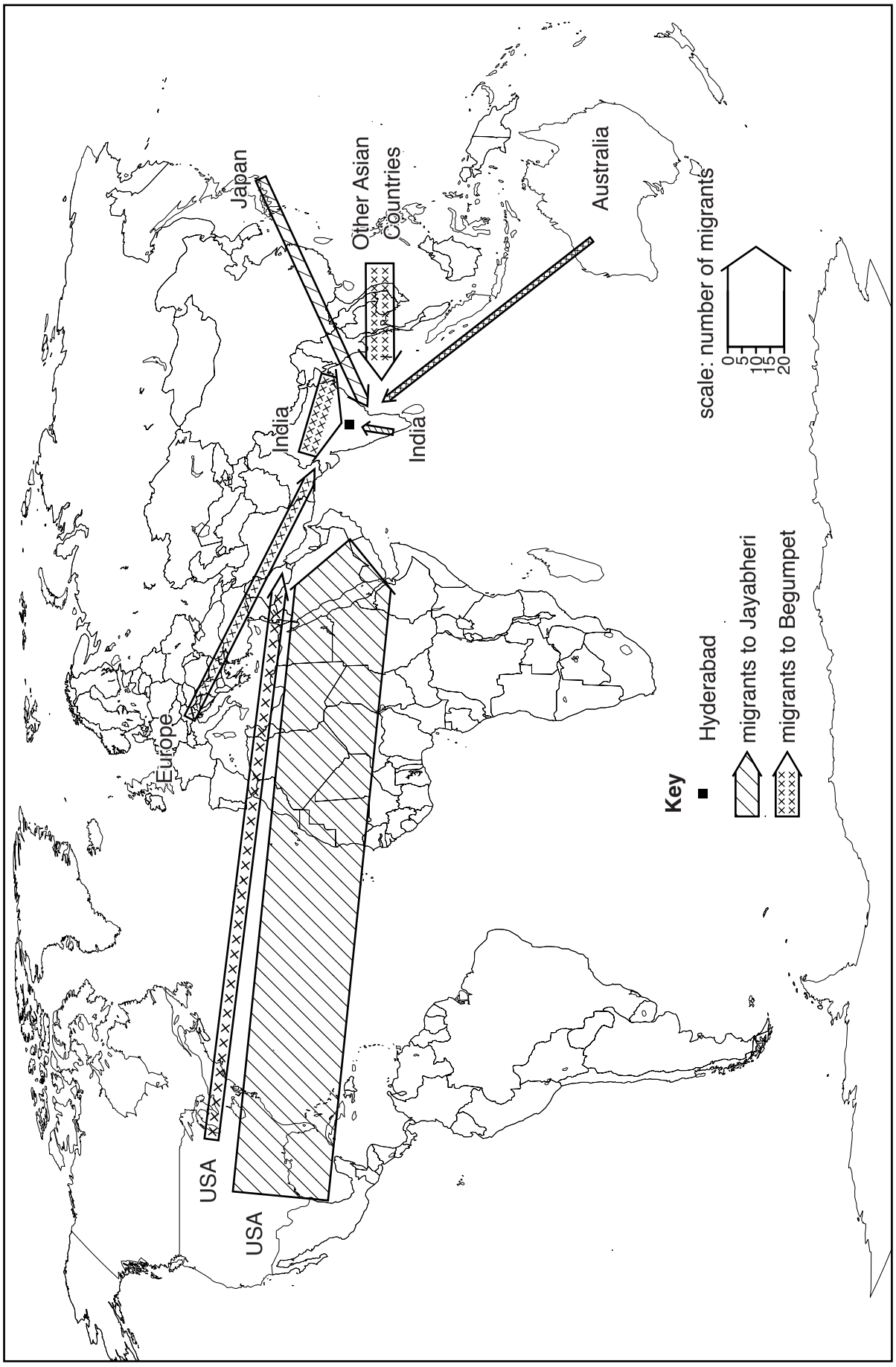

Fig. 3A

(iii) Use the results in Table 1 (on page 3) to complete Fig. 3B to show the number of migrants to Begumpet from Tamil Nadu. [1]

Migration to Hyderabad from states in India

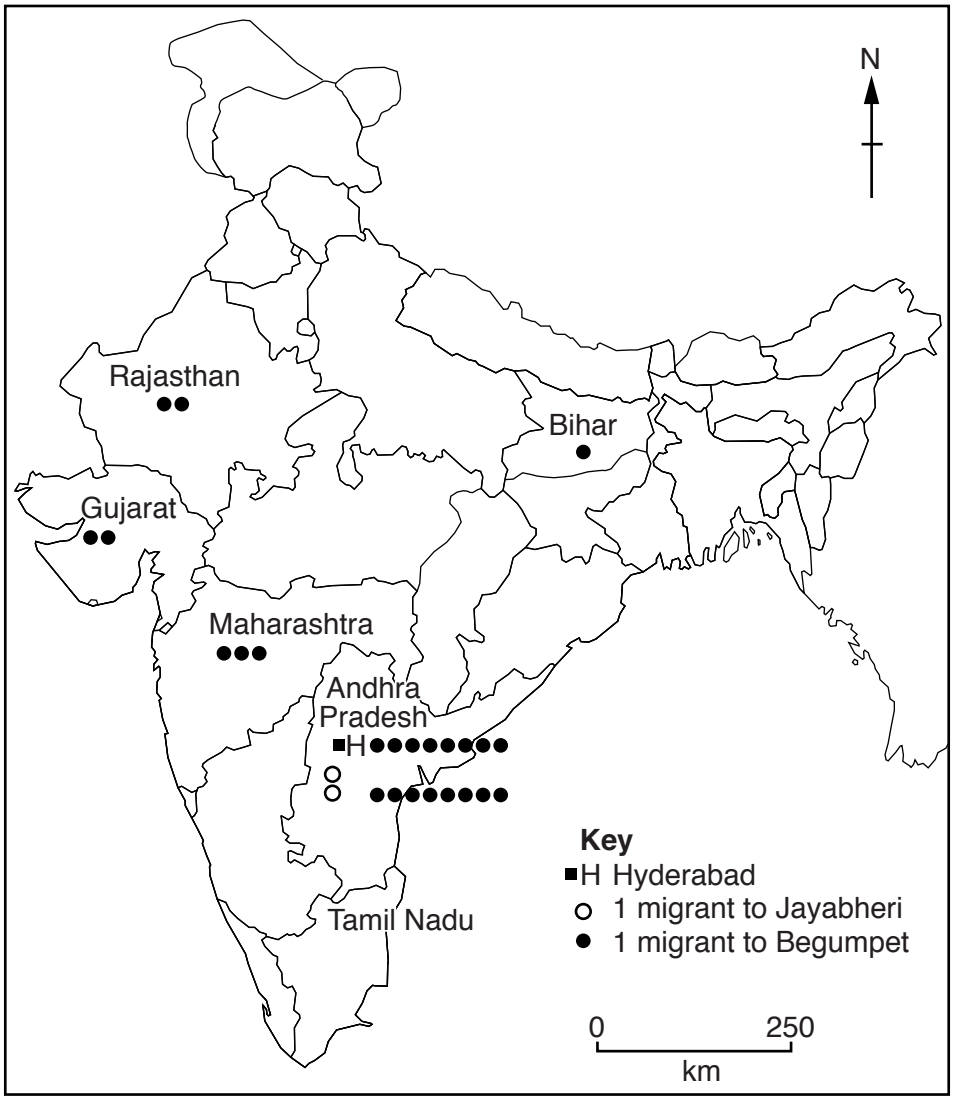

Fig. 3B

(iv) Give **one** advantage of using the map in Fig. 3B to show these results.

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.....[1]

(v) The results of Question 3 are shown below.

Table 2

Results of Question 3
How long have you lived in this area?

Length of time	Jayabheri	Begumpet
Less than 6 months	9	2
6 months to 1 year	12	3
1 to 2 years	27	7
2 to 4 years	2	**11**
More than 4 years	0	**27**

Use these results to complete the graph below. [2]

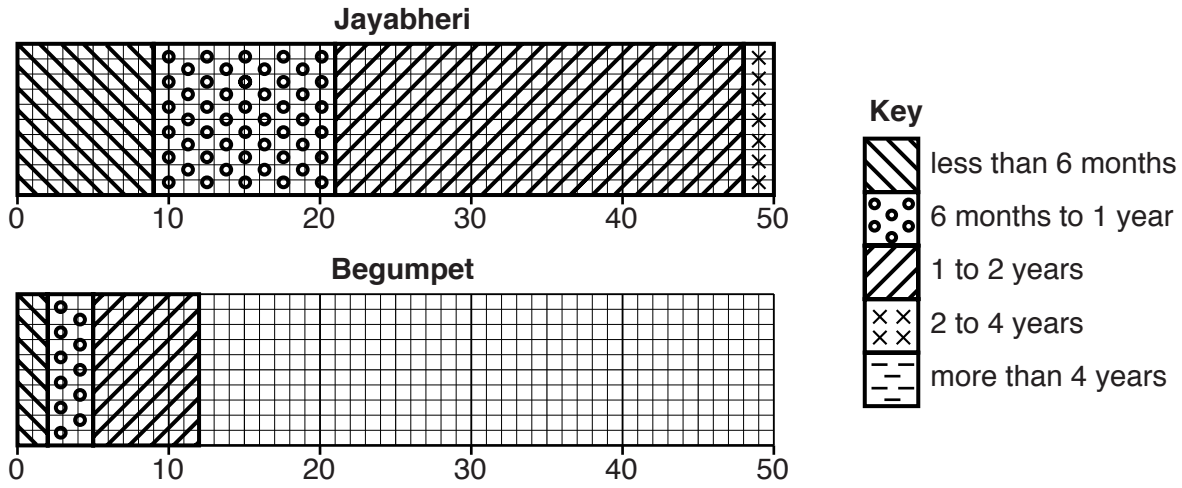

Fig. 4

(vi) The results of Question 4 are shown below.

Table 3

Results of Question 4
Why did you move to live in this area?

Reason	Jayabheri	Begumpet
Transferred by the company I work for	43	3
Moved to find work in the city	**4**	**21**
Moved for a better home	2	20
To live near relatives	1	6

Use these results to complete the graph below. [2]

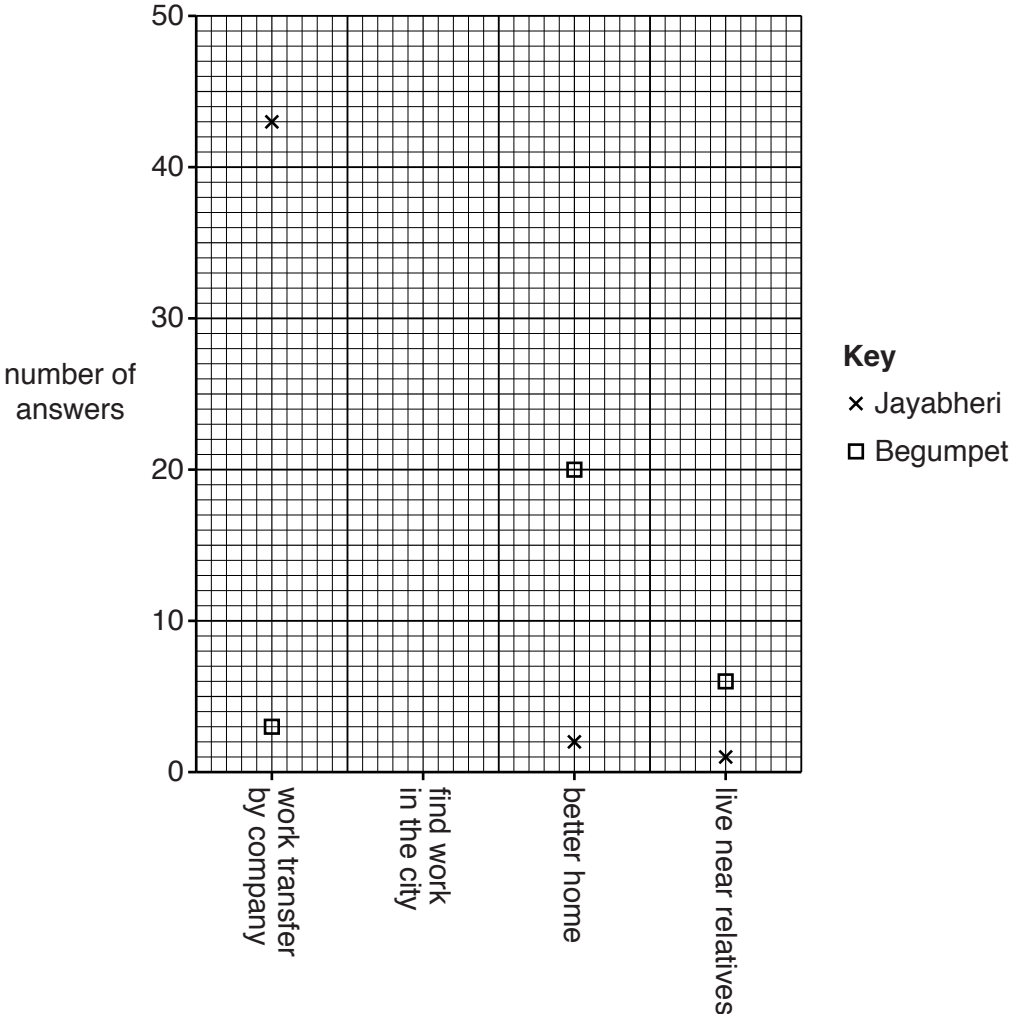

Fig. 5

(vii) Do the results of Questions 2, 3 and 4 support **Hypothesis 1**: *The pattern of migration into the two areas is different*? Support your conclusion with evidence from Figs 3A, 3B, 4 and 5.

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(d) (i) The students grouped the answers they received to Question 5 in the questionnaire. The benefits and problems are shown in Table 4 (Insert). Use these results to complete Fig. 6 opposite. [2]

(ii) Under which benefit or problem would the following answers be included? Tick (✓) your choice in the table below each answer.

1 I can quickly go back to the head office of my company in the USA.

Benefit	Tick (✓)
Easy access to the airport	
Easy access to the out-of-town shopping malls	
Easy access to shops in the city centre	

2 There is a large fence around the estate and everyone who comes in must have a resident permit or a visitor pass.

Benefit	Tick (✓)
Peaceful area away from traffic and crowds	
Large modern house for the family	
A secure housing area for the family to live in	

3 Since the new factories have opened the increase in lorries and trucks makes it slower to travel on the roads.

Problem	Tick (✓)
Traffic congestion caused by local industries	
Noise from the new airport	
Noise and fumes from traffic to the local industries	

[3]

Results of Question 5

What are the main benefits and problems of living in this area?

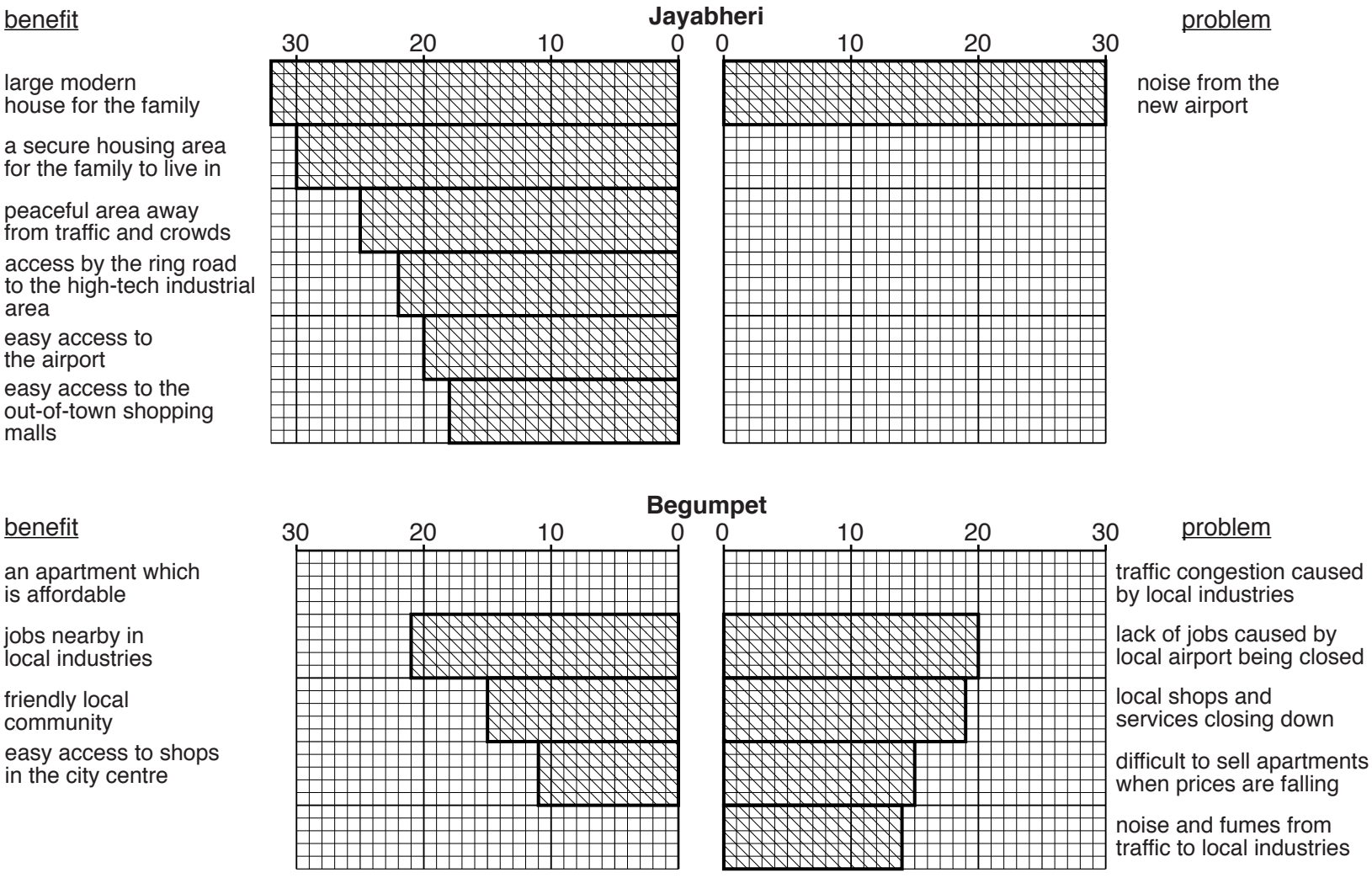

Fig. 6

(iii) The students made the conclusion that Fig. 6 supported Hypothesis 2 more in one area than the other. **Hypothesis 2** was *People who have moved into each area think that they are good places in which to live*. Tick below the area which shows more support for Hypothesis 2. Explain why you made this conclusion using evidence from Fig. 6 and Table 4.

	Tick (✓)
Jayabheri – new area on the edge of the city	
Begumpet – older area nearer to the city centre	

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(e) In other areas of Hyderabad people live in poor housing conditions or squatter settlements. The students did another fieldwork study to investigate housing and service provision in these areas. Describe methods **other than a questionnaire survey** to investigate housing and service provision.

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[Total: 30 marks]

PLEASE TURN PAGE FOR QUESTION 2

2 A group of students were planning fieldwork on a local beach. One of the students drew a sketch map of the area which is shown in Fig. 7 (Insert).

The students wanted to investigate the action of longshore drift on the beach, and whether longshore drift could be reduced by groynes.

Groynes are structures built out into the sea to stop or slow down longshore drift.

Groynes are shown in Photograph A (Insert).

(a) Explain why their teacher suggested the following safety precautions before the students began their fieldwork.

1 Check the times of high and low tide.

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2 Check the weather forecast for the area.

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3 Make sure that their cell (mobile) phone is fully charged.

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(b) **(i)** The students had learned that the direction of longshore drift is usually related to the prevailing wind direction.

Describe a simple method the students could use to work out the prevailing wind direction at the beach.

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(ii) Movement of pebbles and sand along the coast is by longshore drift. This is shown in Fig. 8 below.

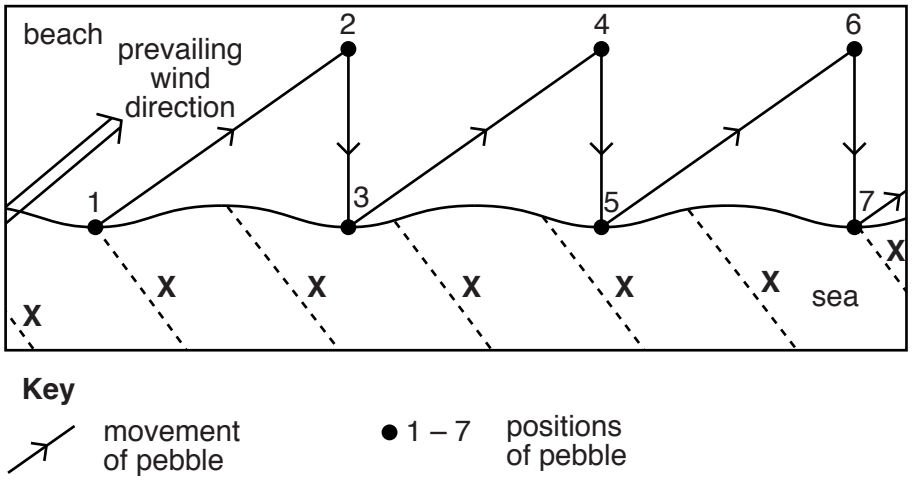

Fig. 8

Which **one** of the following do the lines labelled **X** on Fig. 8 show?
Tick your answer in the table below. [1]

	Tick (✓)
Wave crests approaching the beach	
Direction of the tides	
Warm water currents	

(iii) Explain the process of longshore drift shown on Fig. 8.

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The students decided to investigate the following hypotheses in the area shown in Fig. 7 (Insert) where part of the coastline is protected by groynes.

Hypothesis 1: *More longshore drift takes place on the unprotected coastline than on the protected coastline.*

Hypothesis 2: *Groynes reduce the movement of material along a beach.*

(c) (i) To test **Hypothesis 1**, the students dropped an orange into the sea at the water's edge at each of the six sites shown on Fig. 7. They marked the starting position with a ranging pole and measured the distance the orange moved along the beach in 5 minutes. The students did the test three times at each site. The results are shown in Table 5 below.

Table 5

Results of test to investigate longshore drift

Area of beach	Site	Distance travelled in 5 minutes (m)			Average distance travelled (m)
		Test 1	Test 2	Test 3	
Protected coastline	1	7.2	7.3	7.4	7.3
	2	8.0	8.3	8.2	8.2
	3	7.5	7.1	7.4	7.3
Unprotected coastline	4	9.6	9.8	10.1	9.8
	5	11.0	**11.2**	**10.8**	11.0
	6	12.6	12.2	12.5	12.4

Complete Fig. 9 opposite by plotting the distance that the orange moved in tests 2 and 3 at site 5. [2]

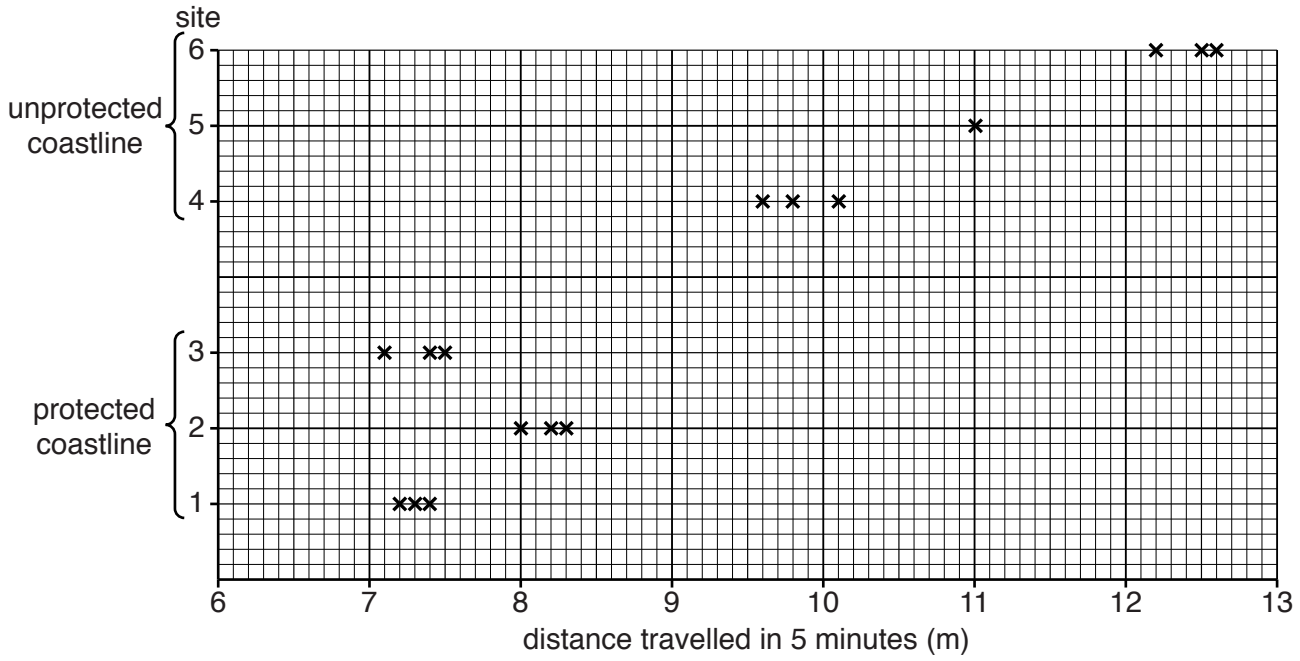

Fig. 9

(ii) What conclusion would the students make to **Hypothesis 1**: *More longshore drift takes place on the unprotected coastline than on the protected coastline*? Support your answer with results from Fig. 9 and Table 5.

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(iii) One student wanted to check that the results were reliable so she suggested that the fieldwork was repeated on another day. How might the following affect the results:

- wind direction;

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- strength of the wind?

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(d) To test **Hypothesis 2:** *Groynes reduce the movement of material along a beach,* the students measured the height of each groyne above the beach. They did this at three points along each groyne. This technique is shown in Fig. 10 (Insert) and their results are shown in Table 6 (Insert).

(i) Use the results in Table 6 to complete Fig. 11 below by plotting the average height of groyne D above the beach on both the south and north sides. [2]

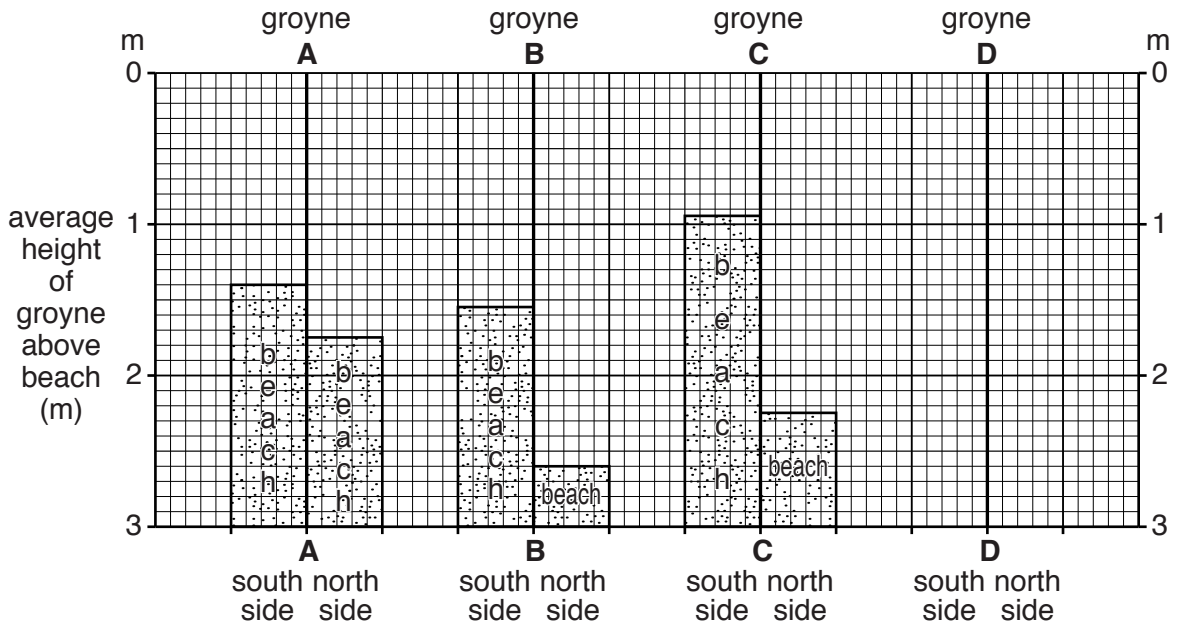

Fig. 11

(ii) The students' conclusion for **Hypothesis 2**: *Groynes reduce the movement of material along a beach*, was that the hypothesis was correct. What evidence in Fig. 11 supports their conclusion?

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(iii) Explain why the beach is at a different height on the south and north side of the groynes.

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(iv) Suggest **two** ways that the students could have improved the reliability of their results for **Hypothesis 2**.

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2 .....

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(e) As an extra piece of fieldwork some students did an investigation to compare beach profiles in different areas of coastline. Describe how they would measure a beach profile using the following equipment:

- two ranging poles
- a clinometer
- a tape measure

You may draw a diagram as part of your answer.

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[4]

[Total: 30 marks]

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