Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

4574868004

GEOGRAPHY **0460/43**

Paper 4 Alternative to Coursework **October/November 2017**

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: Calculator
Protractor
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.

Write your answer to each question in the space provided.
If additional space is required, you should use the lined pages at the end of the booklet. The question number(s) must be clearly shown.

Answer **all** questions.

The Insert contains Figs. 1, 2 and 6 and Tables 2 and 3 for Question 1, and Fig. 7 and Tables 4, 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.

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 **16** printed pages, **4** blank pages and **1** Insert.

DC (RW/SG) 132851/5

CAMBRIDGE International Examinations

1 Students in the UK visited a coastal area where a spit had formed. Fig. 1 (Insert) shows a map of the area.

(a) Which **one** of the following is the correct description of a spit? Tick (✓) your answer.

Description	Tick (✓)
a resistant rock that is separated from the land by erosion	
a tall, steep cliff which extends out into the sea	
an inlet which is sheltered on both sides by cliffs	
a sheltered area of coastline where sand collects	
a ridge of sand or shingle attached to the land at one end	

[1]

The students decided to test the following hypotheses:

Hypothesis 1: *The spit has been formed by constructive waves moving beach material along the coast.*

Hypothesis 2: *The coastal area is being managed to encourage sustainable tourism.*

Sustainable tourism meets the needs of people now and protects the area for future generations.

(b) Before they began their fieldwork the students discussed safety on the beach with their teacher.

Suggest **three** precautions the students or teacher needed to take to reduce the risk of accidents.

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2 .....

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.....[3]

(c) To investigate **Hypothesis 1** the students needed to know more about the waves along the coastline. They had learned that waves are either constructive or destructive.

Wave frequency is the number of waves which break on the shore per minute.

The wave frequency of constructive waves is less than 10 waves per minute and the wave frequency of destructive waves is 10 or more waves per minute.

(i) Describe a method the students could use to measure wave frequency.

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(ii) The results of the students' measurements of wave frequency are shown in Table 1 below.

Table 1

Results of students' measurements

Measurement number	Waves per minute
1	6
2	8
3	8
4	7
5	8
6	6
7	9
8	7
9	8
10	7
Average	

Calculate the average (mean) number of waves per minute. **Insert your answer** into Table 1. [1]

[Turn over

(d) The students had learned that longshore drift is important in moving beach material along the coast.

(i) Which **one** of the following statements about longshore drift is correct?
Tick (✓) your answer.

Statement	Tick (✓)
Waves approach the coastline at an angle.	
Swash moves material down the beach.	
Longshore drift occurs in deep water.	
Backwash moves material up the beach.	
The direction of longshore drift depends on the tide.	

[1]

(ii) To investigate longshore drift the students used two fieldwork methods. These are described in Fig. 2 (Insert), which is part of a student's fieldwork notes.

Suggest **one** disadvantage of method 1.

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.....[1]

(iii) Suggest **one** way the students could have made sure that their results using method 2 were accurate.

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.....[1]

(iv) The results of method 1 are shown in Table 2 (Insert). Use these results to **plot the average distance moved along the beach** in Fig. 3 below. [1]

Results of method 1

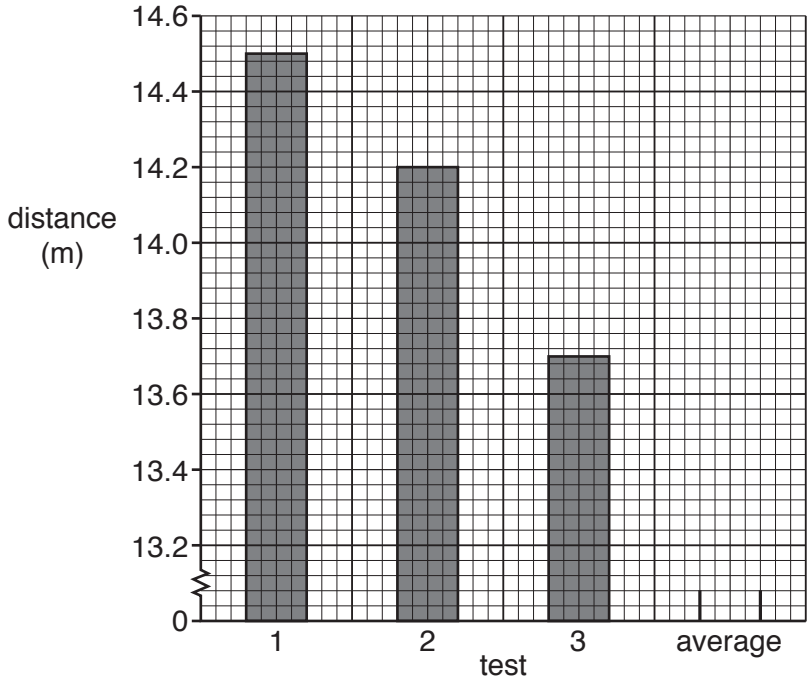

Fig. 3

(v) The results of method 2 are shown in Table 3 (Insert). Use these results **to complete Fig. 4** below. [1]

Height of beach material either side of the two groynes

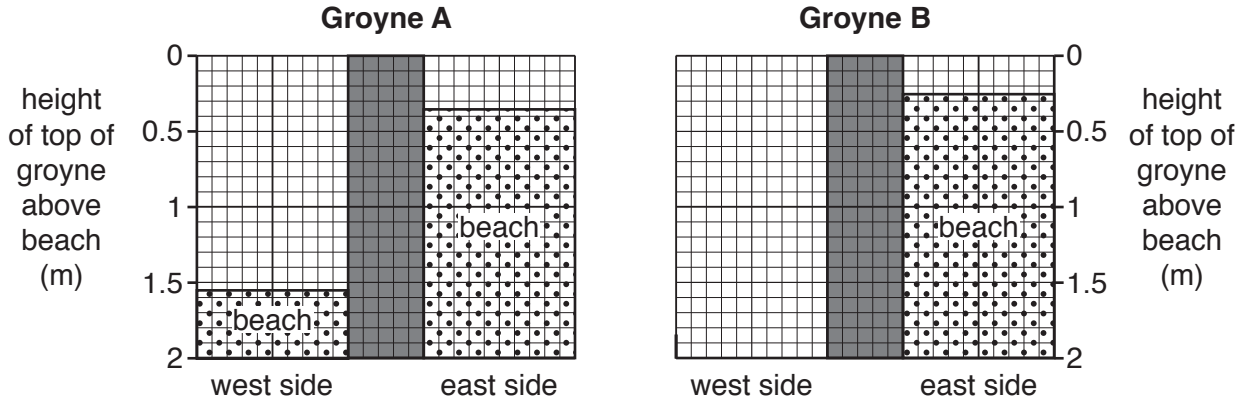

Fig. 4

(vi) What conclusion would the students make about **Hypothesis 1:** *The spit has been formed by constructive waves moving beach material along the coast*? Support your answer with evidence from Tables 1, 2 and 3, and Figs. 3 and 4.

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(vii) Look again at Fig. 1 (Insert). Suggest why the groynes have been built on the beach.

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[Turn over

(e) The coastline where the students did their fieldwork attracts many visitors. To investigate **Hypothesis 2:** *The coastal area is being managed to encourage sustainable tourism*, the students needed to assess the types and amount of management found on and near the beach.

(i) First they recorded evidence of management methods in the tally chart shown in Fig. 5 below. **Complete the tally chart** with their result of counting **eight** litter bins in the area. [1]

Tally chart

Evidence of management	Tally	Number counted
board-walk	𝍸	5
café	/	1
campsite	//	2
car park	//	2
direction signpost	𝍸 ////	9
fence	///	3
footpath	////	4
information board	//	2
litter bin		
recycling point	/	1
toilets	/	1
tourist information centre	/	1

Fig. 5

(ii) Another student located some of this evidence on a sketch map of part of the area near the beach. This is shown in Fig. 6 (Insert).

Describe the location of the footpaths shown on the map.

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(iii) Is **Hypothesis 2:** *The coastal area is being managed to encourage sustainable tourism* true or false? Circle your answer below.

True False

Explain your conclusion. Include evidence from Figs. 5 and 6.

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(f) For extension work the students drew the beach profile from the edge of the sea to the top of the beach. They used a tape measure, two ranging poles and a clinometer. Describe how they made their measurements.

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[Total: 30 marks]

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2 Students in India wanted to find out more about people who had migrated to the city of Jaipur from within India and lived in squatter settlements made up of homemade shelters on pavements or next to roads.

The students decided to test the following hypotheses:

Hypothesis 1: *More migrants who live in the squatter settlement came from the area around Jaipur than areas further away.*

Hypothesis 2: *The quality of life of residents in the squatter settlement is poor.*

(a) To investigate the hypotheses the students used a questionnaire with 10% of the residents of the squatter settlements.

(i) Describe a sampling method for how the students could choose people to complete the questionnaire. Explain why you have chosen this method.

Name of sampling method .....

Description of method .....

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Explanation for choice .....

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(ii) Explain why a 10% sample (300 people) is an appropriate number of residents to answer the questionnaire.

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.....[2]

(b) The questionnaire is shown in Fig. 7 (Insert).

(i) The results of Question 1 (Which state did you come from when you moved to Jaipur?) are shown in Table 4 (Insert). **Complete Fig. 8** below by plotting the data for Gujarat. [1]

States from which migrants to the squatter settlement came

Key

× Jaipur

number of migrants

- more than 100
- 51–100
- 21–50
- 11–20
- 1–10
- 0

- international boundary
- state boundary
- disputed boundary

Fig. 8

(ii) Suggest **one** other suitable method to display the results of Question 1 on a map of India.

.....[1]

(iii) What is the correct conclusion about **Hypothesis 1:** *More migrants who live in the squatter settlement came from the area around Jaipur than areas further away*? Support your answer with evidence from Fig. 8 and Table 4.

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(iv) Suggest reasons for the pattern of migration shown in Fig. 8.

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(c) To investigate **Hypothesis 2:** *The quality of life of residents in the squatter settlement is poor*, the students used the results of Questions 2, 3 and 4 in their questionnaire.

(i) The students plotted their results of Question 2 (Where do you get most of your water from?) and Question 3 (What is your main method of lighting?) in pie graphs shown in Figs. 9A and 9B below. Use the data in Table 5 (Insert) to **complete the pie graph** in Fig. 9A. [3]

Main source of water

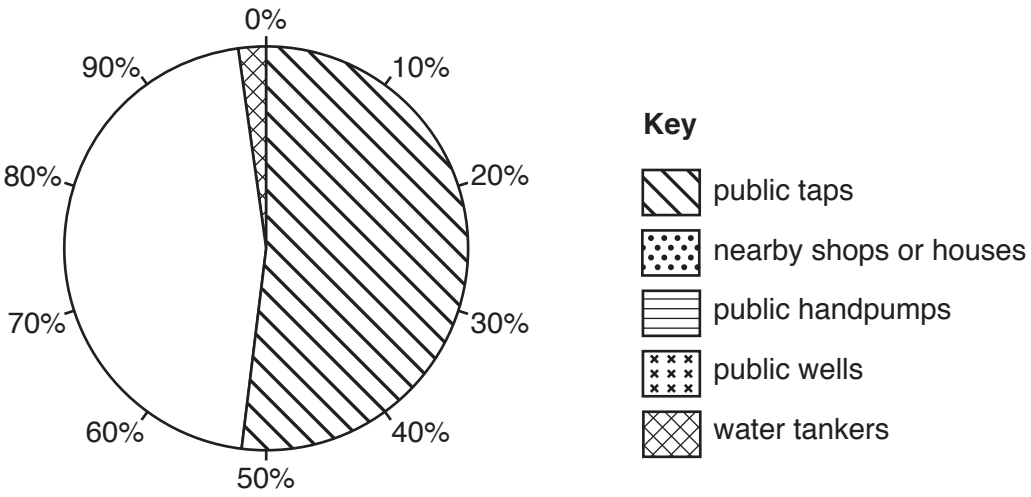

Fig. 9A

Main method of lighting

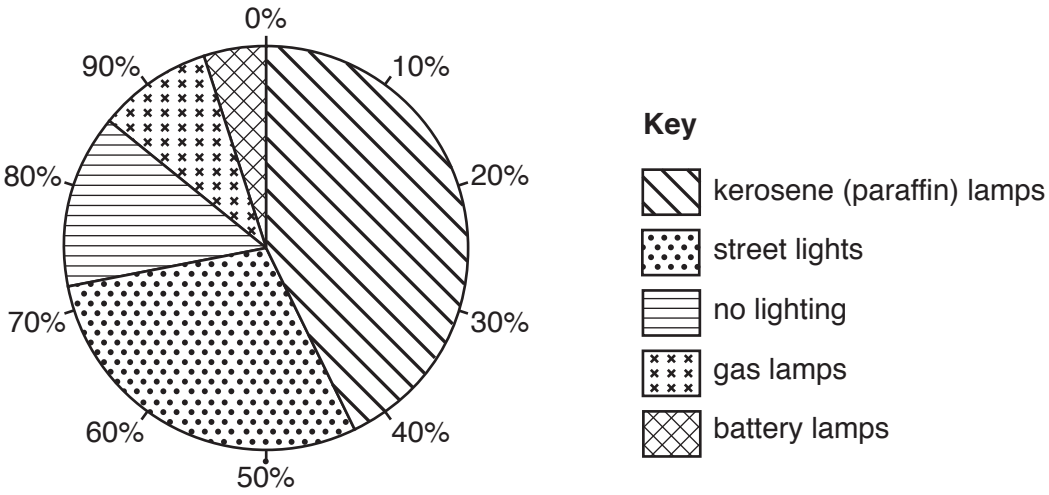

Fig. 9B

(ii) In Fig. 9B what percentage of residents have 'no lighting'?

.....% [1]

(iii) The answers to Question 4 (How do you dispose of your rubbish?) are shown in Table 6 (Insert). **Plot the result** for 'Throw it on the road' in Fig. 10 below. [1]

Method of rubbish disposal

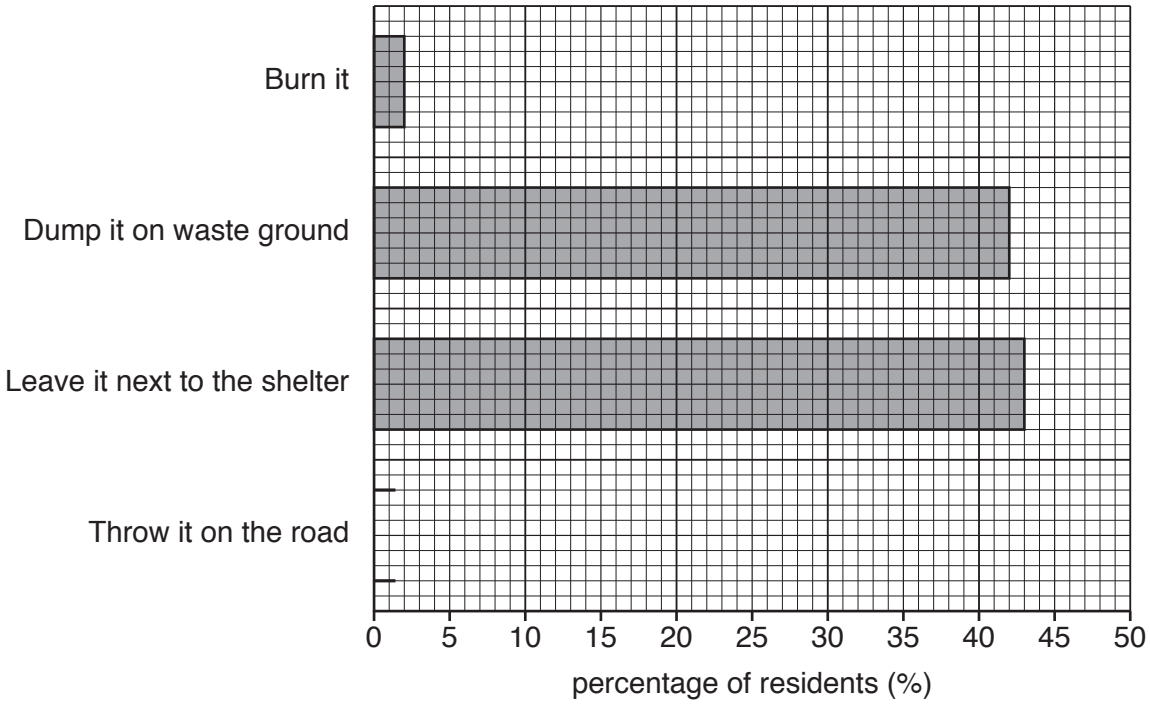

Fig. 10

(iv) The students decided that **Hypothesis 2:** *The quality of life of residents in the squatter settlement is poor* was true. Support this decision with information from Figs. 9A, 9B and 10.

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(d) (i) The answers to Question 5 (What is the job of the main income earner in the family?) are shown in Table 7 (Insert). Use the results to **complete Fig. 11** below. [3]

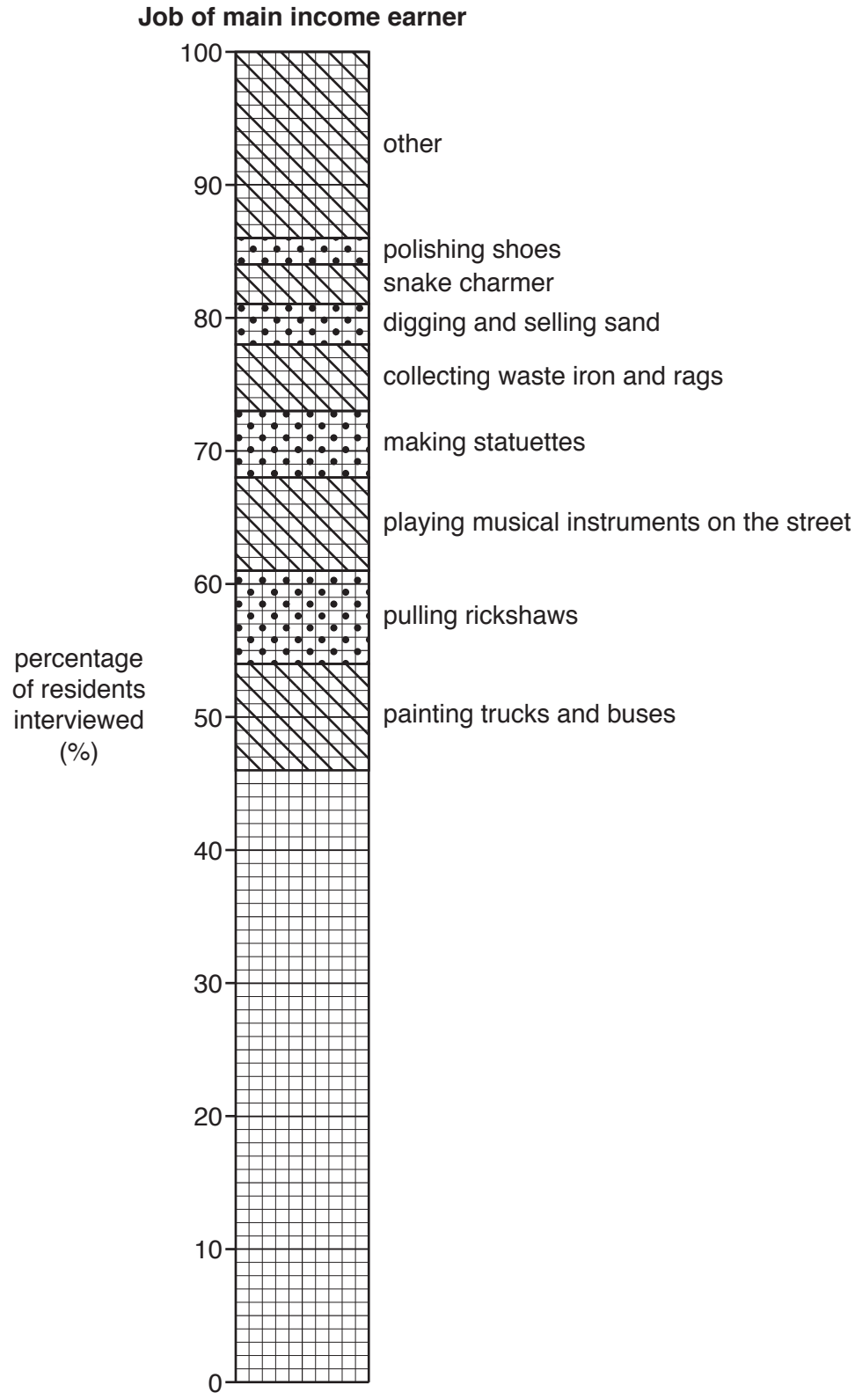

Fig. 11

(ii) Why do the jobs shown in Fig. 11 help to support the students' conclusion that residents in the squatter settlement have a poor quality of life?

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(e) To extend their work the students discussed ways to solve the problem of people living on pavements or next to roads. They suggested two possible solutions which are shown in Fig. 12 below.

Two possible solutions suggested by students

Solution A Build low-cost houses with basic water, sewage and power supplies which are cheap to rent. Solution B Police remove the people living on the pavements or next to roads and council workers clear the area of rubbish.

Fig. 12

Explain why solution A is better for people living on pavements or next to roads than solution B.

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[Total: 30 marks]

Additional Pages

If you use the following lined pages to complete the answer(s) to any question(s), the question number(s) must be clearly shown.

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