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Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

8177055380

GEOGRAPHY **0460/42**

Paper 4 Alternative to Coursework **May/June 2020**

1 hour 30 minutes

You must answer on the question paper.

You will need: Insert (enclosed) Ruler
Calculator
Protractor

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- If additional space is needed, you should use the lined pages at the end of this booklet; the question number or numbers must be clearly shown.

INFORMATION

- The total mark for this paper is 60.
- The number of marks for each question or part question is shown in brackets [ ].
- The insert contains additional resources referred to in the questions.

This document has **16** pages. Blank pages are indicated.

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1 Charity workers were doing research into differences in the health of families in Chennai, a city in India. They worked in two densely populated areas of the city which are both shown in Fig. 1.1 (Insert). One was an area of unplanned housing (squatter settlement) and the other was another area of poor quality housing which was planned and permanent.

The researchers wanted to find out if the following hypotheses were correct:

Hypothesis 1: *Diseases were more common in the area of unplanned housing than in the area of permanent housing.*

Hypothesis 2: *Most residents in both areas used government health facilities.*

(a) To investigate the two hypotheses the researchers used a questionnaire with a representative sample of people who lived in each area. The sample size (number of people who answered the questionnaire) was 100 in each area.

(i) Why did the researchers need to use a sample of people?

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..... [1]

(ii) Information which is collected using a questionnaire is known as 'primary data'. What does 'primary data' mean?

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..... [1]

(iii) The following is a **poor** sampling method which may have been used to get a representative sample of people to answer the questionnaire.

'Give the questionnaire to all mothers who the researchers met outside the local school.'

Explain why this is a poor method to obtain a representative sample.

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(iv) Describe a **good** sampling method which the researchers could use to choose a representative sample of people to answer the questionnaire. Explain why this would be a good method to use.

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(b) The questionnaire is shown in Fig. 1.2 (Insert). The results of Question 1 in the questionnaire are shown in Table 1.1 (Insert).

(i) **Plot the results** for typhoid in the unplanned housing area in Fig. 1.3 below. [1]

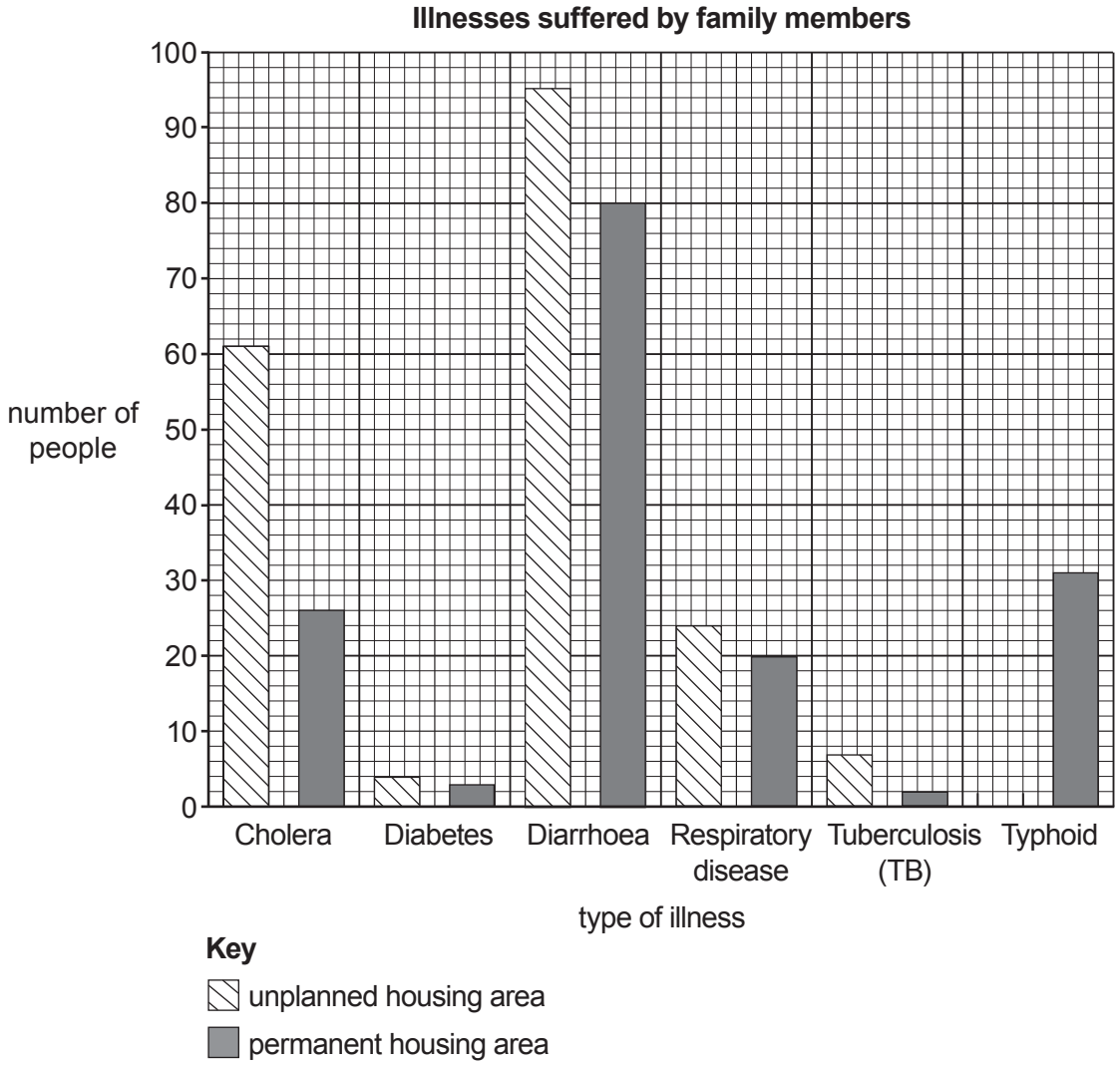

Fig. 1.3

(ii) What conclusion would the researchers make about **Hypothesis 1:** *Diseases were more common in the area of unplanned housing than in the area of permanent housing*? What evidence in Fig. 1.3 and Table 1.1 supports their conclusion?

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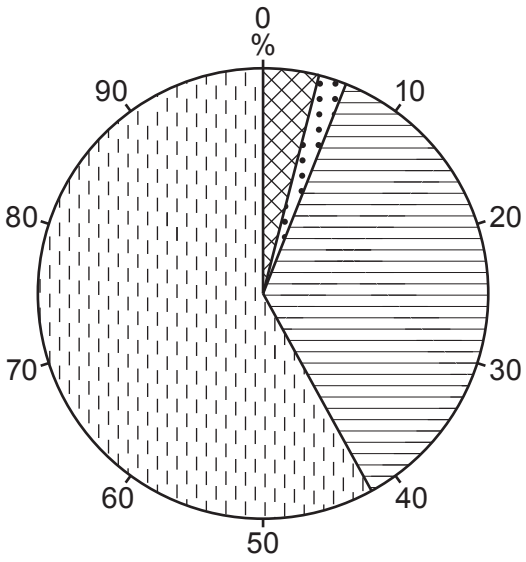
(c) The results of Question 2 in the questionnaire are shown in Table 1.2 (Insert).

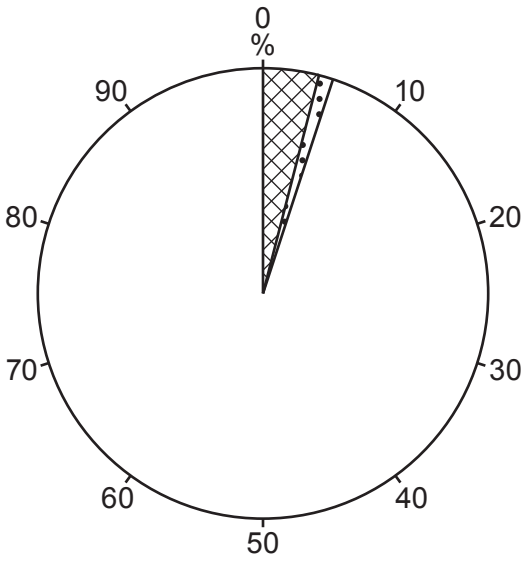
(i) Use the results to **complete the pie graph** for the permanent housing area in Fig. 1.4 below. [2]

Where people go for treatment of an illness

Unplanned housing area



Permanent housing area



Key

- Family or friends
- Clinic or hospital run by a charity or NGO
- Government doctor, clinic or hospital
- Private doctor, clinic or hospital

Fig. 1.4

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(ii) The researchers agreed a conclusion that **Hypothesis 2:** *Most residents in both areas used government health facilities* was **incorrect**. Support this decision with evidence from Fig. 1.4 and Table 1.2.

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(d) (i) The results which the researchers obtained for Question 2 were unexpected. One of the researchers suggested that they should have used the questionnaire in a pilot study before doing the main research. How might this have helped?

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..... [2]

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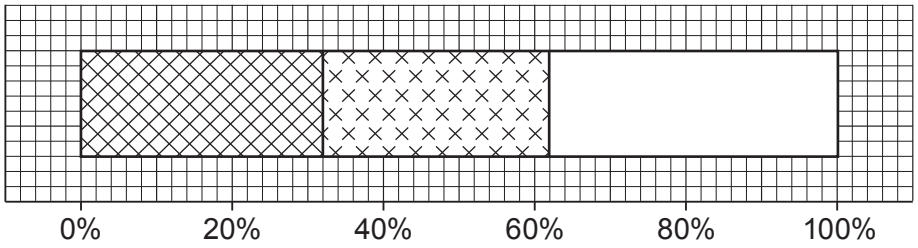
(ii) The researchers returned to the two areas of the city and asked people to answer another question: 'What is the main reason you chose not to use government health facilities?' The answers which people gave are shown in Table 1.3 (Insert).

Complete the graph, Fig. 1.5 (below), to show the answers given by people in the unplanned housing area. [2]

The main reason people chose not to use the government health facilities

Unplanned housing area



Key

- Poor quality of treatment
- Long waiting times to be treated
- Long distance to travel
- Limited and inconvenient opening hours
- Lack of qualified medical staff

Permanent housing area

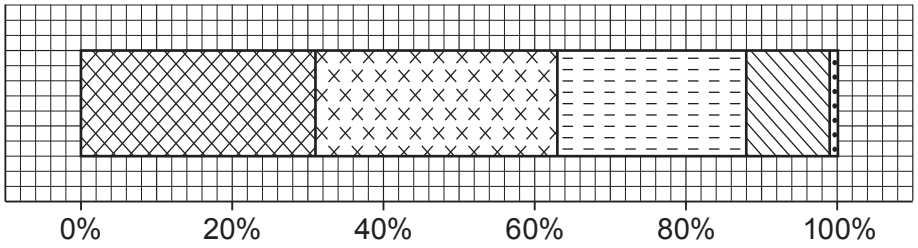


Fig. 1.5

(e) Suggest how the health of residents in poorer areas of the city could be improved.

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(f) The researchers wanted to extend their study by investigating housing conditions in the two areas. Describe how they could collect information about housing conditions. Do **not** include a questionnaire in your answer.

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[Total: 30]

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2 Students were planning fieldwork on a local pebble beach. The students wanted to investigate how pebbles varied in size. The beach, which is divided into sections by groynes, is shown in Fig. 2.1 (Insert).

(a) Fig. 2.2 (Insert) shows one of the groynes. Describe the groyne.

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..... [2]

(b) When the students arrived at the beach they saw a safety notice which is shown in Fig. 2.3 (Insert). Suggest **four** instructions their teacher would give the students to keep them safe whilst they did measurements at the sites shown in Fig. 2.4 (Insert).

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[Turn over

Groups of students worked in the different sections of the beach to investigate the following hypotheses:

Hypothesis 1: *The pebbles get smaller from the cliff towards the sea.*

Hypothesis 2: *The pebbles get smaller from south to north in the section of the beach between two groynes.*

(c) The students collected 20 pebbles at each of nine sites shown in Fig. 2.4 (Insert). They then measured the length, width and depth of each pebble. An example of this measurement is shown in Fig. 2.5 (Insert).

(i) Fig. 2.6 (below) shows the actual size of one of the pebbles collected. **Complete the measurements** of this pebble in the table below. [2]

Actual size of one pebble

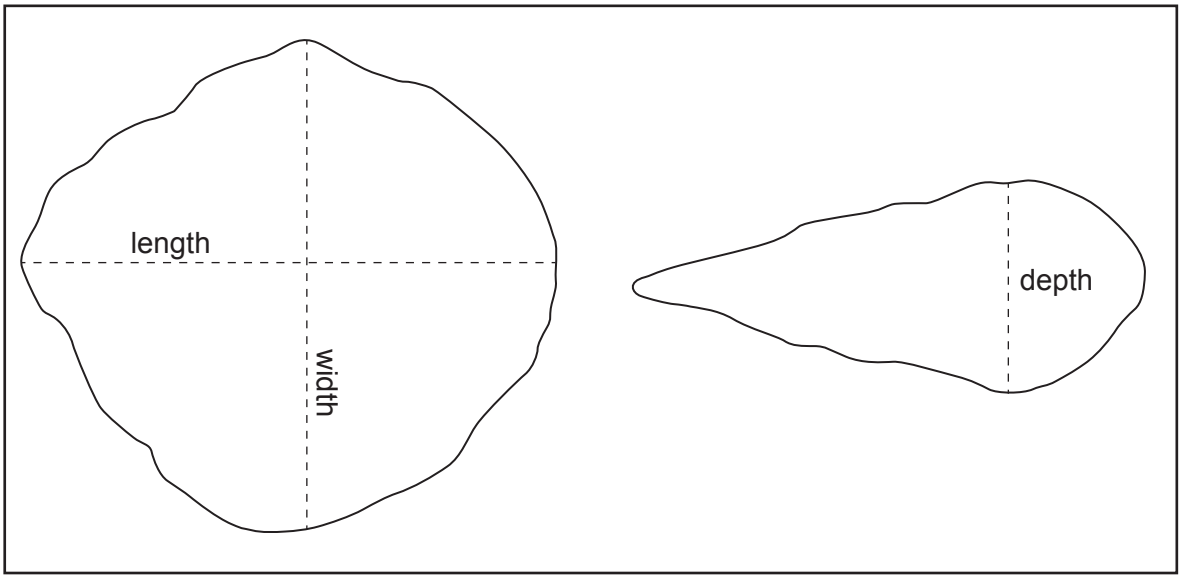
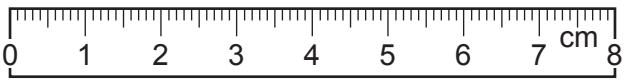


Fig. 2.6



length	70 mm
width	..... mm
depth	..... mm

(ii) In the space below **calculate the average** of the three measurements. [1]

(d) The results of the students' measurements at site M2 (on Fig. 2.4) are shown in Fig. 2.7 below.

(i) The average of the three measurements of pebble number 13 is 53 mm. **Plot this measurement** in Fig. 2.7. [1]

Students' results at site M2

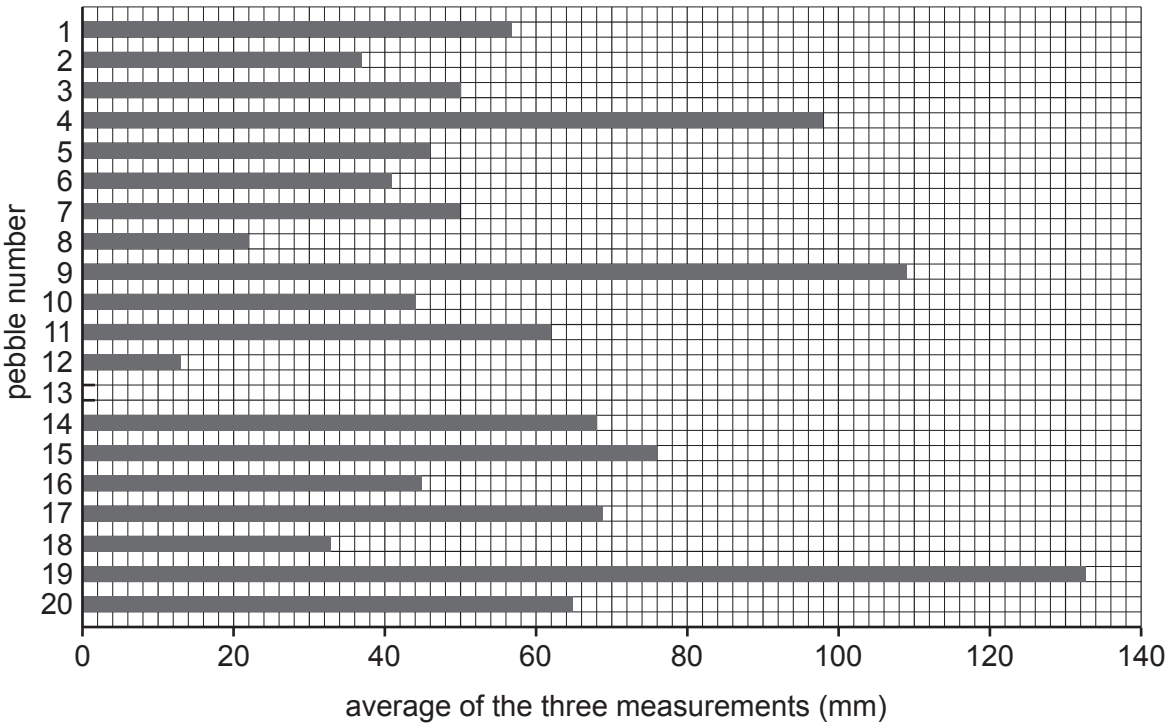


Fig. 2.7

(ii) Which pebble at site M2 has the largest average of the three measurements?

..... [1]

(e) (i) The results of the students' measurements for the nine sites are shown in Fig. 2.4 (Insert).
Do these results support **Hypothesis 1:** *The pebbles get smaller from the cliff towards the sea*? Support your decision with evidence from Fig. 2.4.

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(ii) Explain why the size of pebbles varies in the area between the sea and the cliff.

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(f) **(i)** Look again at Fig. 2.4 (Insert). Which **one** of the following is the correct conclusion to **Hypothesis 2:** *The pebbles get smaller from south to north in the section of the beach between two groynes*? Tick (✓) your decision in the box below.

	Tick (✓)
The conclusion is true for sites U1, U2 and U3	
The conclusion is true for sites M1, M2 and M3	
The conclusion is true for sites L1, L2 and L3	

[1]

(ii) Use data from Fig. 2.4 to support the conclusion you have chosen.

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..... [1]

(iii) Use data from Fig. 2.4 to show why one of the conclusions you rejected is wrong.

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..... [1]

(g) Movement of pebbles along a beach, which was tested in **Hypothesis 2**, is influenced by longshore drift. The students had learned that longshore drift is usually affected by the prevailing wind direction.

(i) How could the students have checked the wind direction when they did their fieldwork?

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(ii) Describe and explain the process of longshore drift which is shown in Fig. 2.8 (Insert).

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(h) As an extension activity the students measured the beach profile from the edge of the sea to the cliff. Describe how they would measure the profile using the following equipment:

- two ranging poles
- a clinometer
- a tape measure

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[Total: 30]

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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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