Cambridge Assessment International Education

Cambridge IGCSE™

GEOGRAPHY **0460/42**

Paper 4 Alternative to Coursework **October/November 2024**

INSERT **1 hour 30 minutes**

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INFORMATION

- This insert contains additional resources referred to in the questions.
- You may annotate this insert and use the blank spaces for planning. **Do not write your answers** on the insert.

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Table 1.1 for Question 1

Results of traffic count

fieldwork site number	distance from CBD (km)	number of vehicles counted in 10 mins
1	0.5	409
2	1.5	425
3	2	376
4	**3.5**	**310**
5	4.5	616
6	5	200
7	6	243
8	6.5	74
9	7.5	18

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Fig. 1.2 for Question 1

Air Quality Index

Air Quality Index value	level of health concern	colour	advice
0 to 50	good	green	None
51 to 100	moderate	yellow	Very sensitive people should reduce prolonged outdoor exercise.
101 to 150	unhealthy for sensitive groups	orange	Children, active adults and people with respiratory diseases such as asthma should reduce prolonged outdoor exercise.
151 to 200	unhealthy	red	Children, active adults and people with respiratory diseases such as asthma should avoid prolonged outdoor exercise. Everyone else should reduce prolonged outdoor exercise.
201 to 300	very unhealthy	purple	Children, active adults and people with respiratory diseases such as asthma should avoid physical activity outdoors. Everyone else should avoid prolonged outdoor exercise.
301 to 500	hazardous	maroon	Everyone should avoid physical activity outdoors.

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Fig. 1.3 for Question 1

Equipment used to measure the Air Quality Index



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Table 1.2 for Question 1

Amount of traffic and Air Quality Index

fieldwork site number	number of vehicles counted in 10 minutes	Air Quality Index value
1	409	135
2	425	152
3	376	132
4	310	120
5	616	195
6	**200**	**105**
7	**243**	**120**
8	74	86
9	18	57

Fig. 1.5 for Question 1

Student's bipolar survey sheet

fieldwork site number _____ date _____ time _____

	score					
negative description	**–2**	**–1**	**0**	**+1**	**+2**	**positive description**
dirty with lots of litter						clean with no litter
poor-quality housing						high-quality housing
unattractive and derelict						attractive and well looked after
poor-quality roads and pavement						good-quality roads and pavement
many pedestrians						few pedestrians
little open or green space						plenty of open or green space
much noise from traffic						little noise from traffic
	total score =					

Fig. 2.1 for Question 2

Measuring infiltration

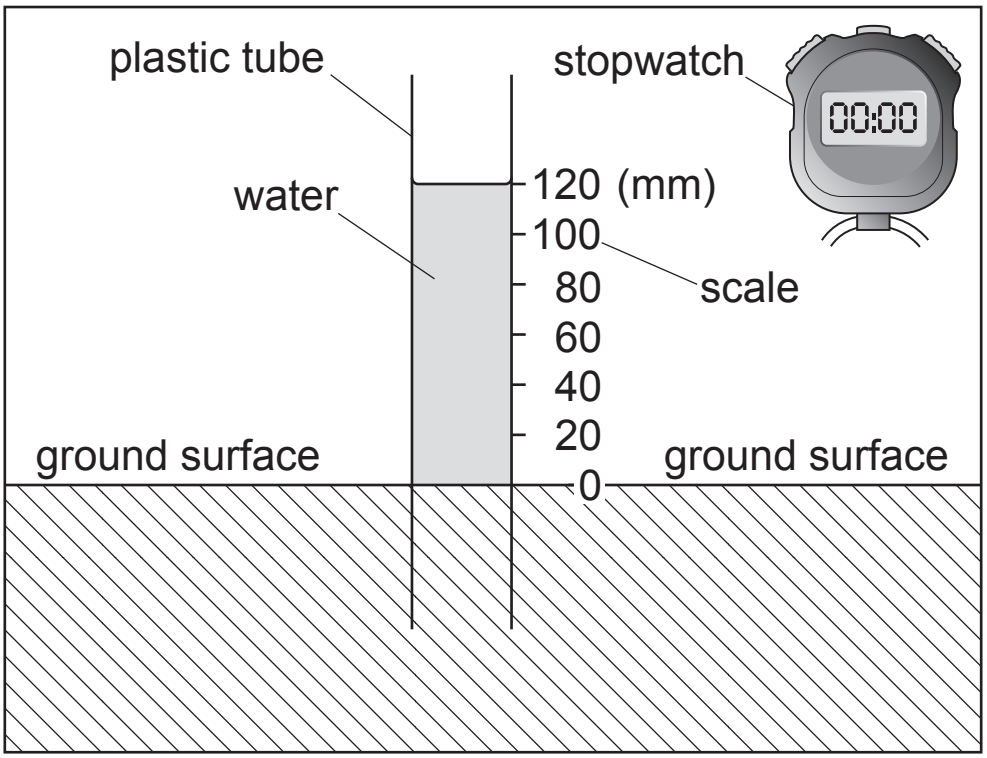


Table 2.1 for Question 2

Results of students' measurements of water level

time (mins)	water level in tube (mm)	
	site 1	**site 4**
0	120	120
1	120	115
2	119	111
3	118	111
4	118	91
5	116	75
6	115	51
7	113	28
8	110	**13**
9	108	**9**
10	105	**6**

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Fig. 2.3 for Question 2

How to measure soil moisture content

Method 1

1. Take a sample of soil from each site.
2. Put each soil sample into separate plastic bags, and label the bag with the site number.
3. Take the soil samples back to school.
4. Empty each soil sample into a small dish, and weigh it to find out the weight of each sample.
5. Put the soil samples into an oven, and heat them at 250 °C for 30 minutes.
6. Take the soil samples from the oven, and weigh them again.
7. Calculate the soil moisture percentage by using the formula:

$$\frac{\text{original weight when wet} - \text{weight after being heated and dried}}{\text{original weight when wet}} \times 100$$

Method 2

1. Switch on the digital soil moisture meter.
2. Put the sensor probe into the soil to a depth of about 10 cm.
3. Read the percentage display on the meter.



Table 2.2 for Question 2

Infiltration rate and soil moisture content

site	infiltration rate (mm per min)	soil moisture content (%)
1	1.5	37.3
2	1.6	34.8
3	**5.1**	**31.5**
4	11.4	27.7
5	13.3	24.9
6	17.1	22.4

Table 2.3 for Question 2

Gradient and infiltration results

site	slope gradient (°)	infiltration rate (mm per min)
1	9	1.5
2	4	1.6
3	**3**	**5.1**
4	6	11.4
5	2	13.3
6	7	17.1

Fig. 2.6 for Question 2

Vegetation at each fieldwork site

	site 1	site 2	site 3	site 4	site 5	site 6
infiltration rate (mm per min)	1.5	1.6	5.1	11.4	13.3	17.1
types of vegetation	scrub grass bare soil	patchy grass bare soil	grass	grass isolated bushes	dense grass isolated trees	dense grass bushes

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