

Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

Forename(s)

Candidate signature

I declare this is my own work.

INTERNATIONAL A-LEVEL GEOGRAPHY

Paper 5 Fieldwork and Geographical Skills

Wednesday 17 January 2024 07:00 GMT Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:

- a ruler with millimetre measurements
- a calculator, which you are expected to use where appropriate.

Instructions

- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do **not** write outside the box around each page or on blank pages.
- All working must be shown.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 60.
- You may use a bilingual dictionary for this exam.
- You may **not** use an English dictionary.

For Examiner's Use	
Question	Mark
1	
2	
3	
4	
5	
TOTAL	



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You must answer **all** questions in **Section A**.

[4 marks]

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1

Turn over for the next question

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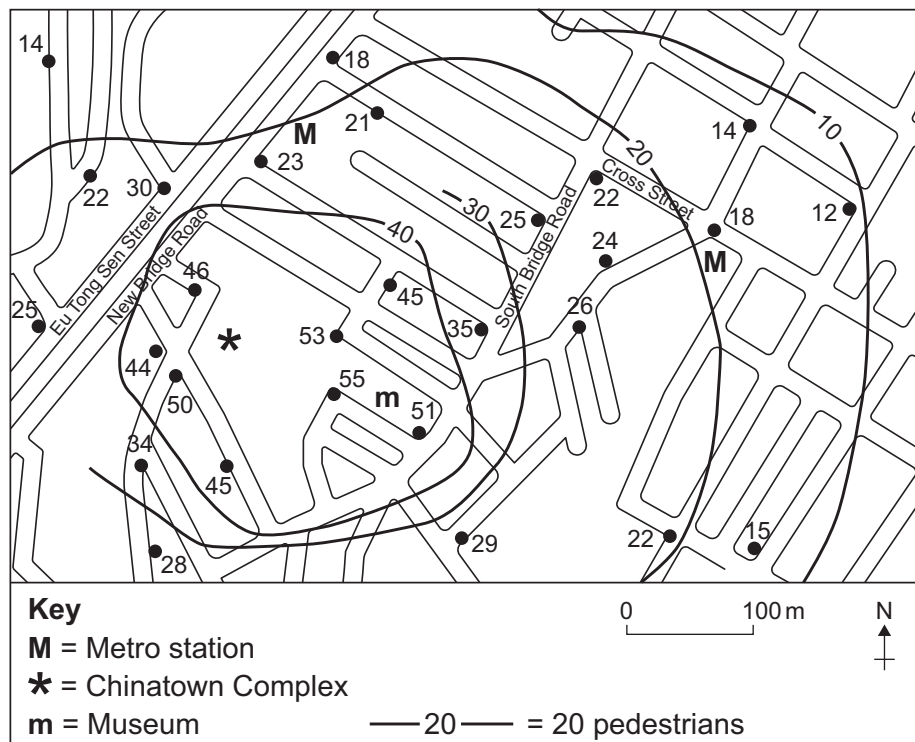
0 2

A group of students recorded pedestrian flows in the Chinatown area of Singapore as part of an urban geography study.

Working in small groups during the morning, students counted the number of pedestrians passing different locations. After 10 minutes, each group moved to a different recording site.

The students marked the data they collected onto a street plan of the area and used it to create the isoline map of pedestrian flows shown in **Figure 1**.

Figure 1



0 2 . 1

(a) Complete the isoline for 30 pedestrians on **Figure 1**.

[1 mark]

(b) Complete **Figure 1** by adding an isoline for 50 pedestrians.

[1 mark]



[2 marks]

[6 marks]

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0 3

A student was studying carbon sequestration in trees. The student used fieldwork to find the height, age and carbon content of trees in two different areas of forest.

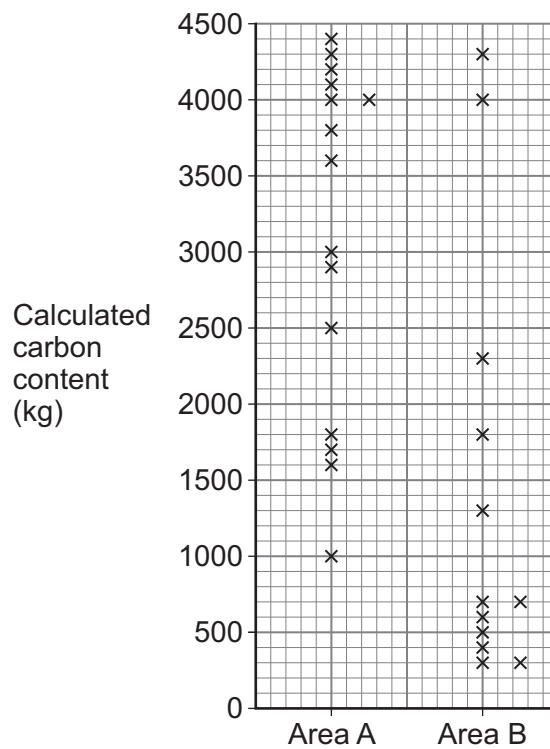
Carbon sequestration happens when carbon is stored in trees as they take in carbon dioxide from the atmosphere during photosynthesis.

The student selected samples of trees from the two areas of forest. **Figure 2** shows the measured tree height and calculated carbon content of the samples. The student plotted these results as a dispersion diagram in **Figure 3**.

Figure 2

Sample from Area A			Sample from Area B		
Tree number	Tree height (m)	Calculated carbon content (kg to nearest 100)	Tree number	Tree height (m)	Calculated carbon content (kg to nearest 100)
1	26.5	1600	1	23.3	2400
2	26.8	1000	2	18.3	2300
3	26.5	4000	3	18.5	1800
4	23.5	4300	4	20.2	1400
5	21.9	3600	5	18.5	4300
6	22.9	4100	6	18.9	700
7	24.6	3800	7	18.2	600
8	27.5	4400	8	23.4	300
9	27.2	4000	9	22.3	300
10	22.6	1800	10	22.1	4000
11	22.5	2500	11	18.2	400
12	21.8	2900	12	18.3	500
13	23.2	1700	13	17.9	700
14	26.2	4200	14	17.3	1300
15	24.9	3000	15	18.3	1400



Figure 3

0 3 . 1

Complete **Figure 3** by adding the following data from **Figure 2**:

- the calculated carbon content for tree number 1
- the calculated carbon content for tree numbers 4 and 15.

[2 marks]**Question 3 continues on the next page****Turn over ►**

Figure 4 shows some statistics for the calculated carbon content (kg) of the samples of trees in Area A and Area B.

Figure 4

Statistic	Sample from Area A calculated carbon content (kg)	Sample from Area B calculated carbon content (kg)
Mean (to the nearest whole number)		1493
Median		1300

0 3 . 2

Complete **Figure 4** by calculating the mean **and** median for the calculated carbon content of the trees in Area A.

Give your answers to the nearest whole number.

[2 marks]



[6 marks]

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Assess the extent to which measures of central tendency (mean, median and mode) are useful in the analysis of geographical data.

[illegible]

Question 3 continues on the next page

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The student investigated the relationship between tree height and calculated carbon content using the data from the sample in Area A.

The null hypothesis is:

‘There is no relationship between tree height and calculated carbon content’.

A Spearman’s Rank Correlation test has been started in **Figure 5**.

Figure 5

Tree number	Height (m)	Rank height	Calculated carbon content (kg)	Rank calculated carbon content	Difference (d)	d ²
1	26.5	4.5	1600	14	−9.5	90.25
2	26.8	3	1000	15	−12	144
3	26.5	4.5	4000	5.5	−1	1
4	23.5	9	4300			
5	21.9	14	3600	8	6	36
6	22.9	11	4100	4	7	49
7	24.6	8	3800	7	1	1
8	27.5	1	4400	1	0	0
9	27.2	2	4000			
10	22.6	12	1800	12	0	0
11	22.5	13	2500	11	2	4
12	21.8	15	2900	10	5	25
13	23.2	10	1700	13	−3	9
14	26.2	6	4200	3	3	9
15	24.9	7	3000	9	−2	4
						Σ d² = 433.5



0 3 . 5

(a) Complete **Figure 5**.**[2 marks]**(b) Calculate the Spearman Rank Correlation Coefficient (r_s) to 3 decimal places.Spearman Rank Correlation Coefficient = r_s

$$r_s = 1 - \frac{6 \sum d^2}{(n^3 - n)}$$

Where $\sum d^2$ = the sum of d^2
 n = the number of pairs of data

[2 marks]

Show your working.

 $r_s =$ _____**Question 3 continues on the next page****Turn over ►**

Figure 6 shows the critical values of the Spearman Rank Correlation Coefficient.

Figure 6

Number in sample (n)	0.05 level of significance	0.01 level of significance
15	0.443	0.600

03.6

Use the information shown in Figure 6 to assess the statistical significance of your calculated value of r_s .

[2 marks]



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[9 marks]

[illegible]



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9

END OF SECTION A

Turn over for Section B

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You must answer **all** questions in **Section B**.

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0 5 . 2

Evaluate your investigation.

In your answer you should:

- comment on the strengths and weaknesses of different stages of the study
- suggest improvements.

[9 marks]

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END OF QUESTIONS



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[illegible]

[illegible]

