OXFORD

INTERNATIONAL
AQA EXAMINATIONS

Please write clearly in block capitals.

Centre number | | | | | | Candidate number | | | | |

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I declare this is my own work.

INTERNATIONAL A-LEVEL

GEOGRAPHY

Paper 5 Fieldwork and Geographical Skills

Friday 23 June 2023 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	
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5	
6	
TOTAL	

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Section A

Answer **all** questions in the spaces provided.

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

0 1 Remotely sensed data can be used in geographical investigations.

Describe the concept of remote sensing.

[4 marks]

Extra space

4

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0 2 A group of students carried out a geographical investigation in an area of the Northern Territory in Australia shown within **Figure 1**.

Figure 1



0 2 . 1 Add **three** annotations, in the space around **Figure 1**, which describe characteristics of this physical landscape.

[3 marks]

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0 2 . 2 Outline **two** health and safety risks the students would need to consider when planning fieldwork in the area shown in **Figure 1**.

Suggest how each of these risks could be managed.

[4 marks]

1 _____

_____

_____

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2 _____

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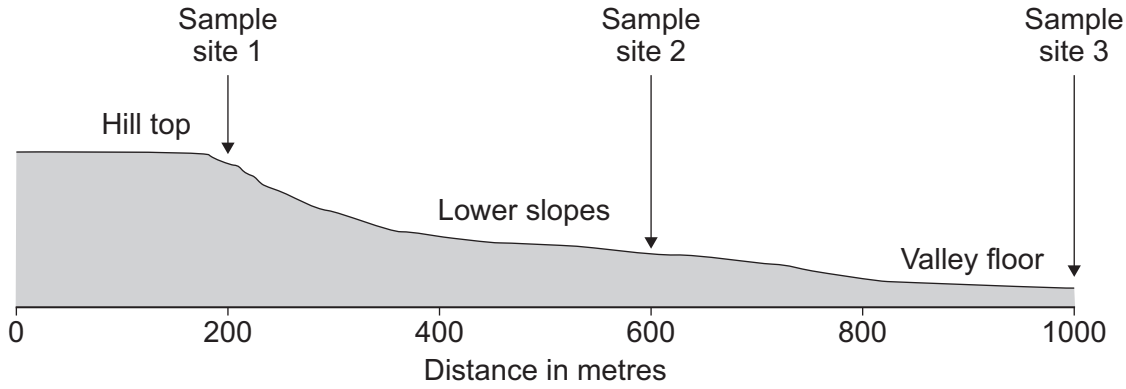
7

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0 3 The students were investigating whether soil texture changed along a slope in this area of Australia. To investigate this idea they obtained a soil sample from each of the systematically chosen sites shown on the slope profile in **Figure 2**.
Soil texture refers to the proportion of sand, silt and clay particles that combine to make up the mineral part of the soil.

Figure 2



The soil samples were analysed to compare the differences in their proportions of sand, silt and clay particles. Their results are shown in **Table 1**, the pie charts in **Figure 3** and the triangular graph in **Figure 4**.

0 3 . 1 Calculate the percentage (%) clay data for **Site 3** in **Table 1**.

[1 mark]

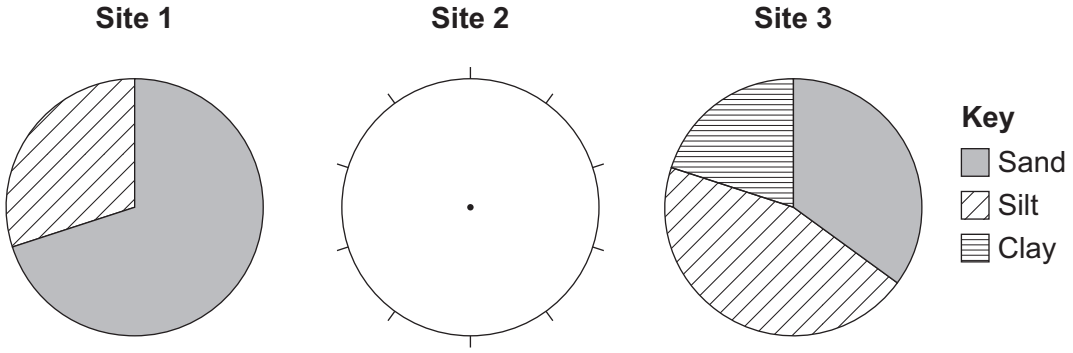
Table 1

Soil component	Site 1	Site 2	Site 3
% sand	70	50	35
% silt	30	40	45
% clay	0	10	

0 3 . 2 Use the data in **Table 1** to draw the pie chart for **Site 2** in **Figure 3**.

[3 marks]

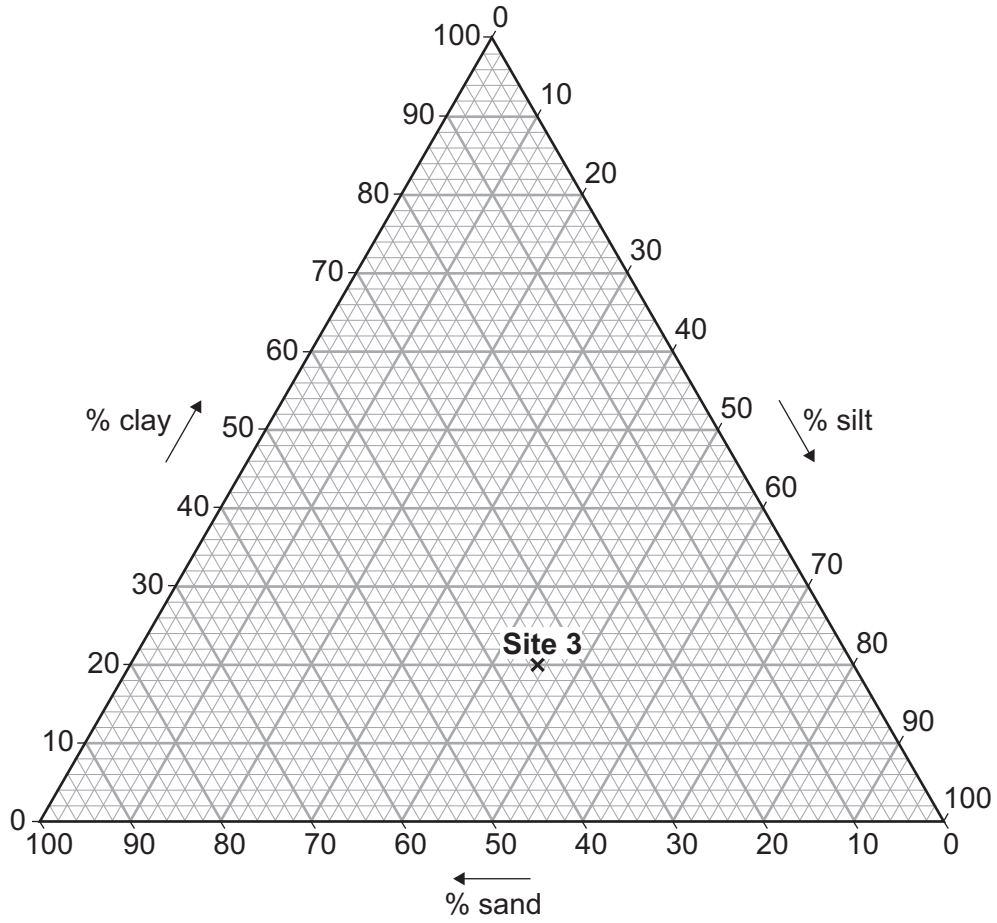
Figure 3



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0 3 . 3 **Figure 4** is a triangular graph which shows the soil texture data shown in **Table 1**.

Figure 4



Complete **Figure 4** by adding soil texture data for **Site 1** and **Site 2**.

[2 marks]

0 3 . 4 Using the information in **Table 1** and **Figures 2**, **3** and **4**, analyse changes in soil texture along the hillslope.

[6 marks]

Question 3 continues on the next page

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0 3 . 5 The investigation into changing soil texture along the slope involved the systematic collection of samples from three evenly spaced sites at 200 m, 600 m and 1000 m from the top of the slope.

Critically evaluate the sampling method used by the students in this investigation.

[6 marks]

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18

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0 4 An A-level Geography student collected secondary data from the Internet to investigate the frequency of tropical storms in the Atlantic region over the last 5 decades.

The student wanted to investigate if the observed frequency of tropical storms over this period of time was significantly different from the expected frequency.

The secondary data collected is shown in **Table 2**.

Table 2

Decade	1970s	1980s	1990s	2000s	2010s
Number of tropical storms	16	17	25	36	30

In order to test the hypothesis that there is a significant difference between the observed and expected frequency of tropical storms over this period of time, the student performed a Chi-square statistical analysis on the data.

The student gave two hypotheses (H) in this investigation.

H0: There is no significant difference between the observed and expected frequency of Atlantic tropical storms over time.

H1: There is a significant difference between the observed and expected frequency of Atlantic tropical storms over time.

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A Chi-square calculation has been started in **Table 3**.

0 4 . 1 Complete the two missing cells in **Table 3** and calculate the Chi-square value (to 2 decimal places) for this investigation.

[4 marks]

Table 3

	Decades					
	1970s	1980s	1990s	2000s	2010s	**Total**
Number of tropical storms Observed Frequency (O)	16	17	25	36	31	125
Number of tropical storms Expected Frequency (E)	25	25	25	25	25	125
Observed (O) – Expected (E)	–9	–8	0		6	
$(O–E)^2$		64	0	121	36	
$\frac{(O–E)^2}{E}$	3.24	2.56	0	4.84	1.44	

Formula for calculating Chi-square = $\sum \frac{(O–E)^2}{E}$

You **must** show your working.

Chi-square value for this investigation = _____

Question 4 continues on the next page

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Table 4 shows an extract from a table of critical values for Chi-square.

Table 4

	Levels of significance		
Degrees of freedom	0.05	0.01	0.005
3	7.82	11.34	12.84
4	9.49	13.28	14.86
5	11.07	15.09	16.75

Degrees of freedom = number of groups of data – 1

0 4 . 2 Using the information in **Table 4**, interpret the statistical significance of your Chi-square result.

[3 marks]

Extra space

7

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0 5 Discuss the benefits and limitations of using different statistical methods to analyse geographical data.

[9 marks]

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9

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Section B

Answer **all** questions in the spaces provided.

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

0 6 You have experienced geography fieldwork as part of your course. Use this experience to answer **Questions 06.1** and **06.2**.

State the aim(s) of your fieldwork investigation.

0 6 . 1 Explain the ethical considerations involved when collecting and using data in your fieldwork investigation.

[6 marks]

Extra space

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0 6 . 2 With reference to your results and conclusions, explain how you have improved your understanding of the geographical ideas forming the basis of your investigation.

[9 marks]

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15

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