Surname		Other Names	
Centre Number			Candidate Number				
Candidate Signature									

For Examiner's Use

General Certificate of Education
January 2008
Advanced Level Examination

AQA
ASSESSMENT and QUALIFICATIONS ALLIANCE

GEOGRAPHY (SPECIFICATION A) **GGA7**
Unit 7 Fieldwork Investigation

Thursday 31 January 2008 1.30 pm to 3.30 pm

For this paper you must have:
- pre-release material (previously despatched);
- a calculator.

Time allowed: 2 hours

Instructions

- Use blue or black ink or ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- Answer the questions in the spaces provided.
- Do **all** rough work in this book. Cross through any work you do not want to be marked.
- Figures and page numbers pre-fixed **P** are to be found in the pre-release book.

Information

- The maximum mark for this paper is 100.
- The marks for questions are shown in brackets.
- You are reminded of the need for good English and clear presentation in your answers. You will be marked on your ability to use an appropriate form and style of writing, to organise relevant information clearly and coherently, and to use specialist vocabulary where appropriate. The legibility of your handwriting and the accuracy of your spelling, punctuation and grammar will also be considered.

Advice

Where appropriate, credit will be given for the use of diagrams to illustrate answers and where reference is made to your personal investigative work. You are advised to allocate your time carefully.

For Examiner's Use			
Question	Mark	Question	Mark
1		5	
2			
3			
4			
Total (Column 1) →			
Total (Column 2) →			
TOTAL			
Examiner's Initials			

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

1 Aim

(a) With reference to your own experience of planning a fieldwork enquiry, outline how **Figure P1** might have provided the idea for this enquiry.

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(4 marks)

(b) With specific reference to the objectives on **Page P2**, suggest why the shingle ridge became the focus for this enquiry.

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(2 marks)

6

2 Methods

(a) The method of collecting the beach material for size and roundness is partly described on **Page P5**.

Following the collection of the beach material, state the step-by-step instructions to be followed to measure the size and calculate the Cailleux roundness index.

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(6 marks)

Question 2 continues on the next page

(b) The sampling method for the selection of beach material is described on **Page P5**. Referring to both the sample size and method, comment on the advantages and disadvantages of the strategy adopted.

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(6 marks)

(c) **Figure P2** is a source of secondary data that is useful for this study.
Suggest what other items of secondary data might be useful in producing a risk assessment prior to carrying out fieldwork in this study area and briefly outline their usefulness.

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(4 marks)

16

Turn over for the next question

3 Skills, Techniques and Interpretation

(a) (i) Using **Photograph 4** in **Figure P3**, label **Figure 1** to show the features of the coastal landforms of deposition.

Figure 1

(6 marks)

(ii) With specific reference to the aim and objectives of this enquiry, assess the value and limitations of the photographs in **Figure P3**.

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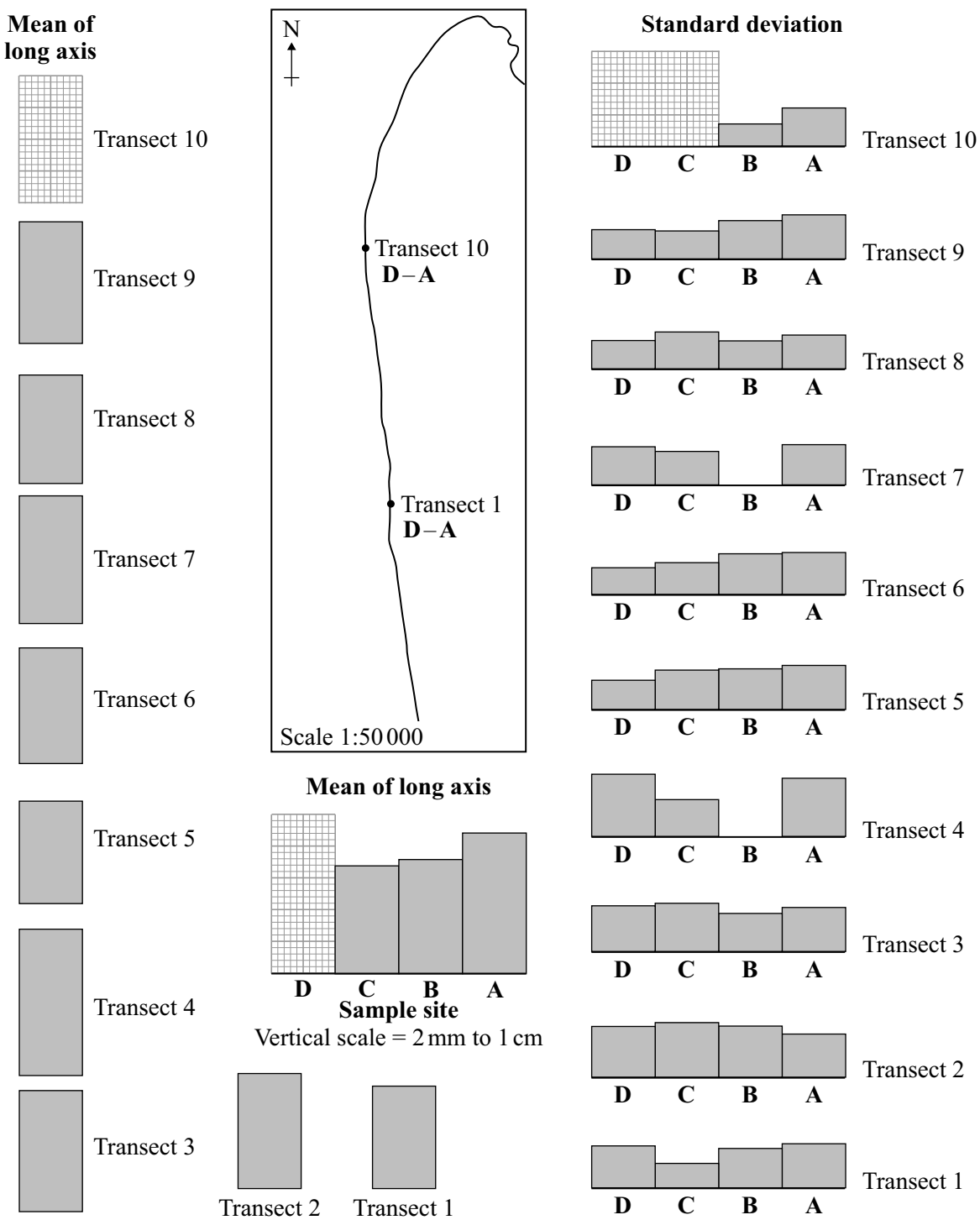
(6 marks)

Question 3 continues on the next page

(b) (i) **Figure P6a** shows the results of the measurement of the long axis of beach material surveyed, whilst **Figure P6b** shows the standard deviation. The mean for each of the transects and sample sites and the standard deviation are partly displayed in **Figure 2**. The figures are rounded to the nearest millimetre. Complete **Figure 2** by adding the mean for transect 10, sample site D, and the standard deviation for sample sites C and D of transect 10.

Figure 2



(4 marks)

(ii) With reference to objective 1, describe and comment on the extent to which the size of beach material changes northwards and across the shingle ridge.

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(10 marks)

Question 3 continues on the next page

(iii) To further investigate the size of beach material along the spit, a Chi-squared (χ^2) test can be applied to the data collected. State your expected/alternative hypothesis.

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(2 marks)

(iv) Complete **Figure 3** to calculate the value of χ^2.

Figure 3

Observed frequency

Long axis of beach material (cm)	**Transect 1**	**Transect 6**	**Transect 10**	**Total**
0–5.0	8	6	0	14
5.1–10.0	19	21	30	70
10.1–15.0	10	11	10	31
15.1 or more	3	2	0	5
Total	40	40	40	120

Expected frequency = (row total × column total ÷ grand total)

Long axis of beach material (cm)	**Transect 1**	**Transect 6**	**Transect 10**	**Total**
0–5.0	4.67	4.67	4.67	14
5.1–10.0	23.33	23.33	23.33	70
10.1–15.0	10.33	10.33	10.33	31
15.1 or more				5
Total	40	40	40	120

$$\chi^2 = \frac{(8-4.67)^2}{4.67} + \frac{(6-4.67)^2}{4.67} + \frac{(0-4.67)^2}{4.67} +$$
$$\frac{(19-23.33)^2}{23.33} + \frac{(21-23.33)^2}{23.33} + \frac{(30-23.33)^2}{23.33} +$$
$$\frac{(10-10.33)^2}{10.33} + \frac{(11-10.33)^2}{10.33} + \frac{(10-10.33)^2}{10.33} +$$
$$\frac{(3-1.67)^2}{1.67} + \frac{(2-1.67)^2}{1.67} + \_\_\_\_\_$$

$$\chi^2 = 2.37 + 0.38 + 4.67 + 0.80 + 0.23 + 1.91 + 0.01 + 0.04 + 0.01 + 1.06 + 0.06 + \_\_\_\_\_$$
$$\chi^2 = 13.21$$

(3 marks)

(v) Using the table of critical values below, interpret the calculated value of χ^2.

	Significance level	
Degrees of freedom	0.05	0.01
6	12.59	16.81

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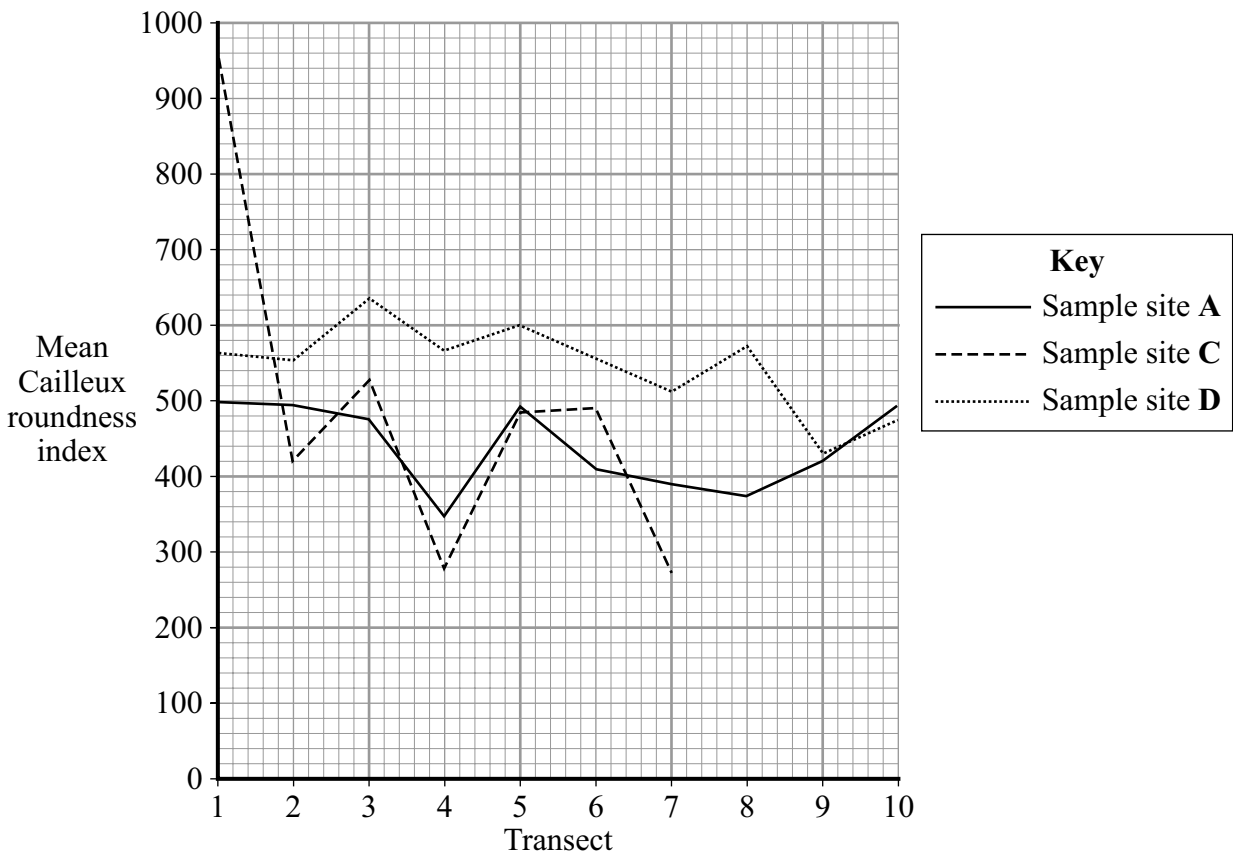
(4 marks)

Question 3 continues on the next page

(c) (i) **Figure P7** shows information about the mean Cailleux roundness index. This is partly presented in **Figure 4**. Complete **Figure 4** by adding the information for sample site C of transects 8, 9 and 10.

Figure 4



Note: Sample site B has been omitted owing to incomplete data.

(3 marks)

(ii) Describe and comment on the extent to which roundness of the material changes northwards and across the shingle ridge.

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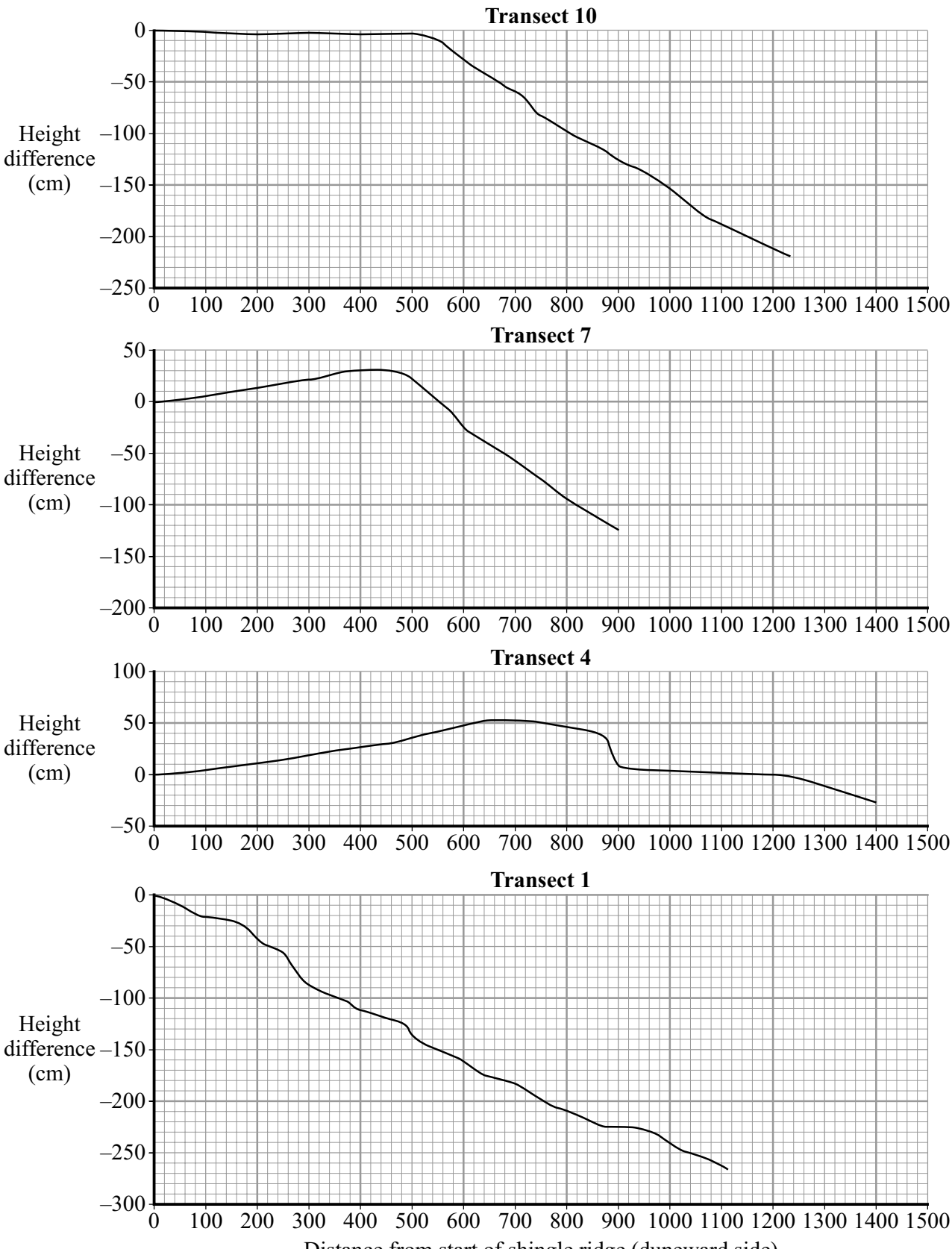
(6 marks)

Question 3 continues on the next page

(d) (i) **Figure P8** shows the results of the beach profile survey. This information is partly presented in **Figure 5**. Complete **Figure 5** by adding the data for the last three measurements of transect 7.

Figure 5



(3 marks)

(ii) Compare and contrast the beach profiles shown in **Figure 5** and suggest reasons for the changes that you have noted.

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(8 marks)

55

Turn over for the next question

4 Conclusion

Write a summary of your findings for this enquiry with specific reference to the aim and objectives given on **Page P2**. Using your own experience of conducting an enquiry, you should, in addition, consider the reliability of these findings and suggest how this enquiry could be improved and extended.

Summary .....

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Reliability .....

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Improvements and Extensions .....

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(10 marks)

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5 Enquiry Related Issues

Two additional aspects of coasts that have not been investigated in this enquiry are:

1. the management of the dune environment behind the shingle ridge
2. the management of the coast as a system.

Figures P9a & **P9b** and **P10a** & **P10b** respectively show photographs relating to these aspects.

Select **one** of these additional aspects and using the relevant photographs as a stimulus:

- identify an aim/objective/hypothesis/issue that you would investigate, and
- outline what additional data you would collect, and
- where, how and why you would collect these data.

Aspect selected .....

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(13 marks)

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END OF QUESTIONS

There are no questions printed on this page