

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS**

**Advanced Subsidiary GCE**

**GEOLOGY**

**2832**

**The Rock Cycle – Processes and Products**

Wednesday

**11 JANUARY 2006**

Afternoon

1 hour

Candidates answer on the question paper.

Additional materials:

Ruler (cm/mm)

Candidate Name	Centre Number	Candidate Number												
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**TIME** 1 hour

**INSTRUCTIONS TO CANDIDATES**

- Write your name in the space above.
- Write your Centre number and Candidate number in the boxes above.
- Answer **all** the questions.
- Write your answers in the spaces provided on the question paper.
- Read each question carefully and make sure you know what you have to do before starting your answer.

**INFORMATION FOR CANDIDATES**

- The number of marks is given in brackets [ ] at the end of each question or part question.
- You will be awarded marks for the quality of written communication where this is indicated in the question.

FOR EXAMINER'S USE		
Qu.	Max.	Mark
1	17	
2	17	
3	16	
4	10	
<b>TOTAL</b>	<b>60</b>	

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**This question paper consists of 12 printed pages.**

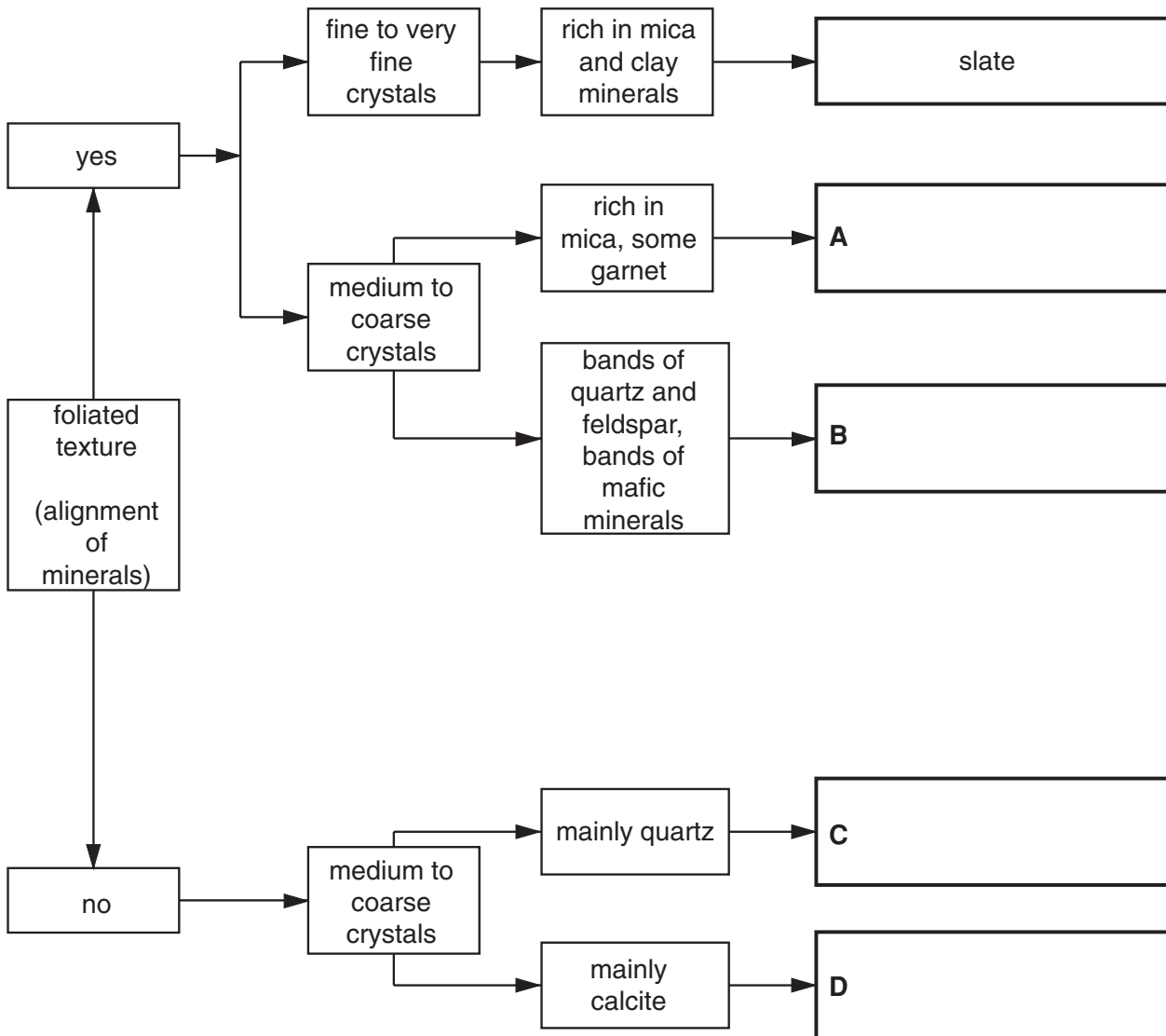
Answer **all** the questions.

- 1 (a) Complete the table below by placing ticks to show the pressure and temperature conditions associated with the three types of metamorphism.

type of metamorphism	pressure		temperature	
	high	low	high	low
regional	✓	✓		
thermal				
burial				

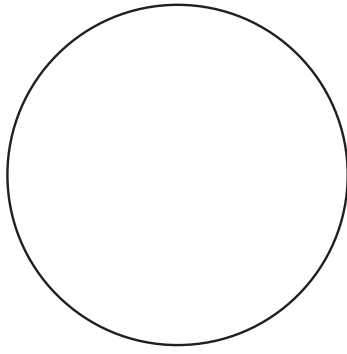
[3]

- (b) (i) Complete the flow diagram below by entering the names of the correct metamorphic rocks in boxes **A**, **B**, **C**, and **D**.

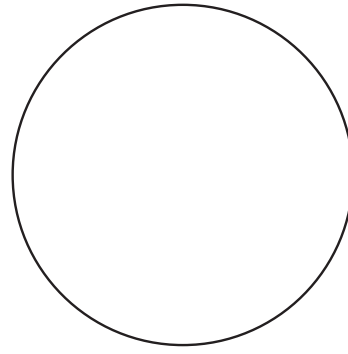


[4]

(ii) Draw and label sketches of rocks **A** and **B**, using the information in the flow chart.



**rock A**



**rock B**

[4]

(iii) Describe **two** differences in texture which distinguish between sedimentary and metamorphic rocks.

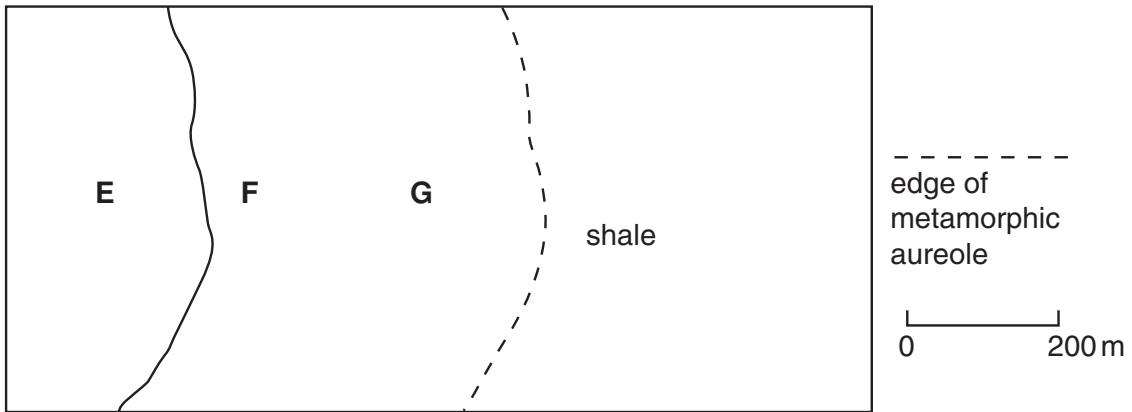
.....

.....

.....

..... [2]

(c) The geological sketch map below shows an area affected by thermal metamorphism.



(i) Name the rock group that would be found at **E**.

..... [1]

(ii) Name the rock that would be found at **F**.

..... [1]

(iii) Name the rock that would be found at **G**.

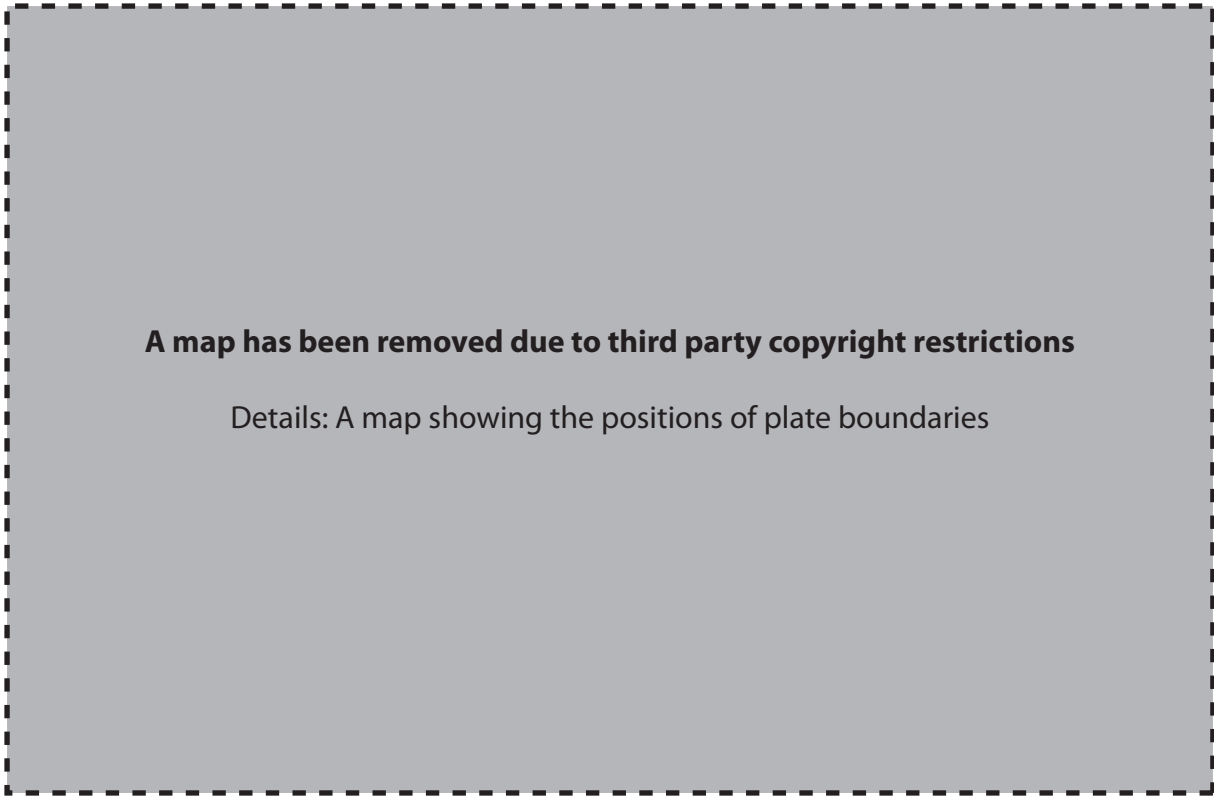
..... [1]

(iv) Define the term *metamorphic aureole*.

.....  
 ..... [1]

[Total: 17]

2 (a) The map below shows the positions of plate boundaries.



(i) Complete the table below to show the type of volcanic activity and the magma type at J, K and L.

location	type of volcanic activity	magma type
J	effusive	
K		basic
L		

[3]

(ii) Explain why volcanoes form at constructive plate margins.

.....

.....

.....

..... [2]

(b) Describe **two** dangers to life and property presented by strato volcanoes.

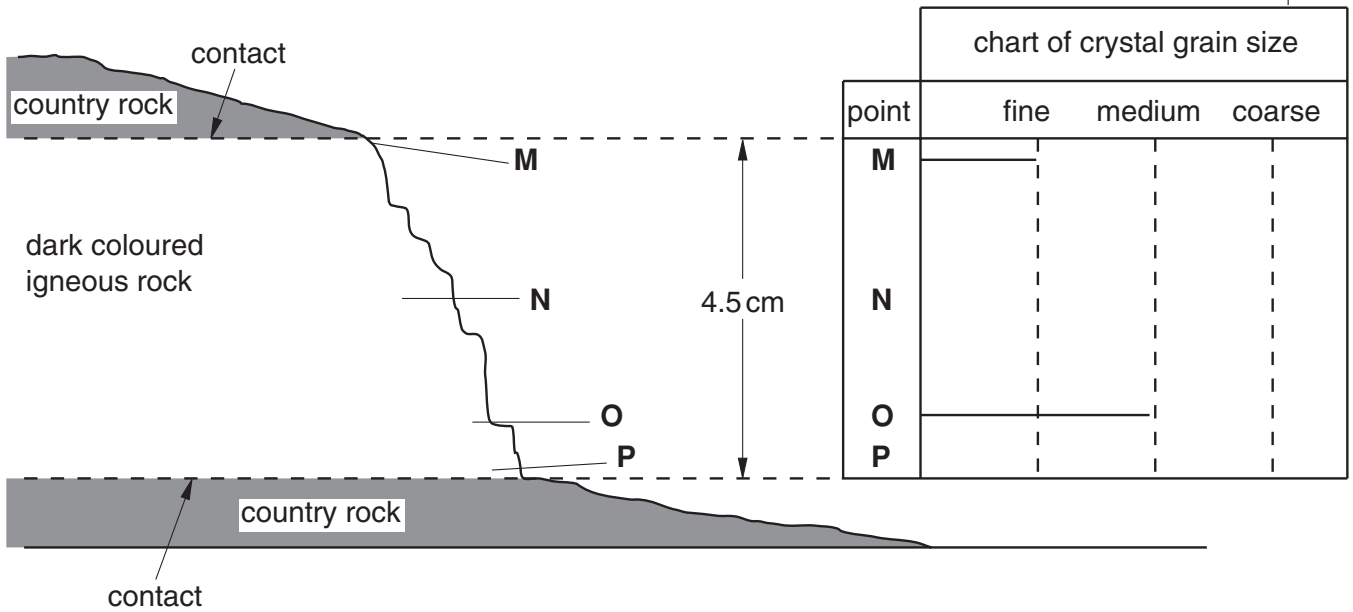
danger 1 .....

.....

danger 2 .....

..... [2]

(c) The diagram below shows some features of rocks exposed in a cliff section and a chart of crystal grain size.



┌──┐ 50m vertical and horizontal scale

(i) Measure the thickness of the igneous rock.

..... [1]

(ii) Complete the chart by drawing lines to show the crystal grain size at points **N** and **P**. [2]

(iii) Explain why the crystal grain size varies in the igneous rock.

.....

.....

.....

.....

.....

.....

..... [3]

(iv) Clearly label the following on the diagram

- the chilled margins
- the baked margins.

[2]

(v) Using information from the diagram and the chart, explain why the igneous rock may be described as intrusive.

.....

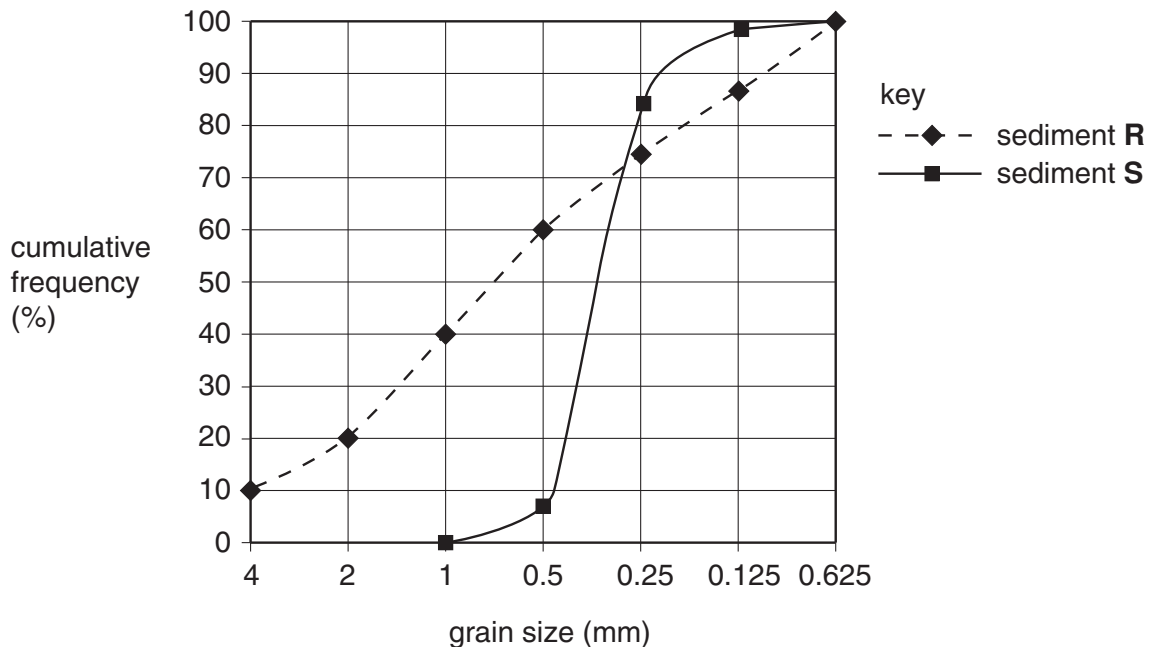
.....

.....

..... [2]

[Total: 17]

3 The graph below shows cumulative frequency curves for two sediments, **R** and **S**.



(a) (i) Use the data for sediment **T** below to plot a cumulative frequency curve on the graph.

cumulative frequency distribution for sediment <b>T</b>	
grain size (mm)	frequency %
2	0
1	6
0.5	22
0.25	75
0.125	96
0.0625	100

[3]

(ii) Complete the table below by entering the sediment **R**, **S** or **T** that best fits the description of sorting.

sorting	sediment
well sorted	
moderately sorted	
poorly sorted	

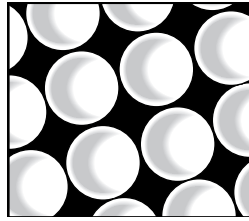
[2]

(iii) What percentage of sediment **R** is coarser than sand?

..... [1]



(b) Below is a drawing of grains in sediment S.



\_\_\_\_\_ 0.125mm

(i) Describe the roundness and sphericity of the grains.

roundness ..... sphericity ..... [2]

(ii) Explain how the roundness of the grains is related to the length of time they were transported.

.....  
.....  
..... [2]

(iii) Describe how sediments are transported by wind and by water.

.....  
.....  
.....  
.....  
..... [3]

(iv) Which of the sediments, R, S or T, is likely to have been transported by wind?

..... [1]

(c) Define the term lithification.

.....  
.....  
..... [2]

[Total: 16]

4 In this question, two marks are available for the quality of written communication.

Using diagrams, describe the characteristic features of **three** of these sedimentary structures:

- cross bedding
- desiccation cracks
- graded bedding
- ripple marks.

Dotted lines for student response.

..... [8]

Quality of Written Communication [2]

[Total: 10]

**END OF QUESTION PAPER**

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