

OXFORD CAMBRIDGE AND RSA EXAMINATIONS

Advanced Subsidiary GCE

GEOLOGY

2832

The Rock Cycle – Processes and Products

Monday

17 JANUARY 2005

Morning

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

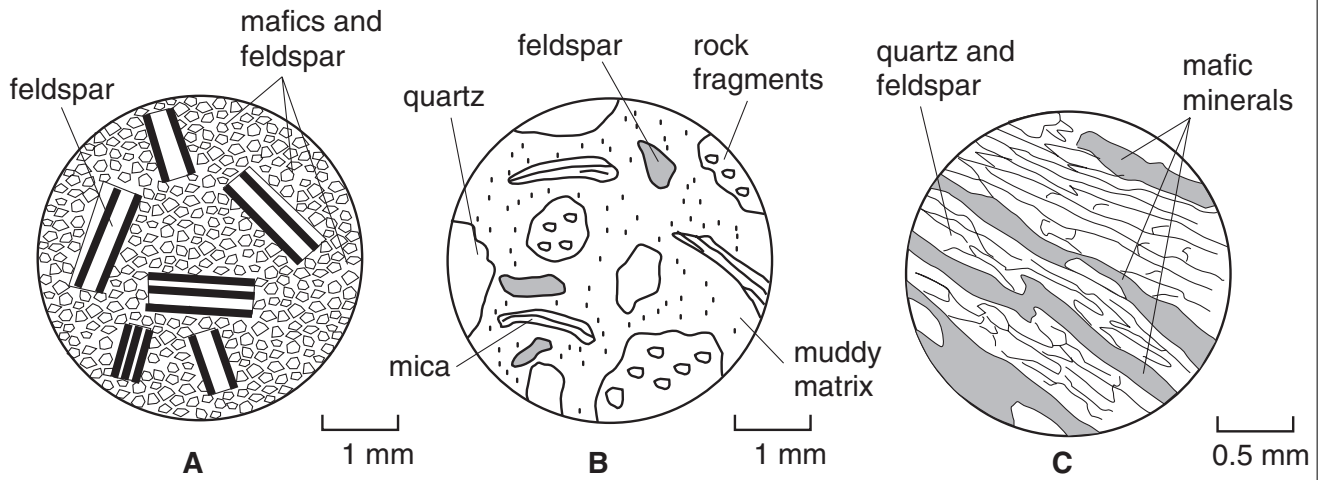
- The number of marks is given in brackets [] at the end of each question or part question.
- You will be awarded marks for the quality of written communication where this is indicated in the question.

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

This question paper consists of 11 printed pages and 1 blank page.

Answer **all** the questions.

1 The thin section drawings below show examples of the three main classes of rocks.



(a) (i) Identify the rock class for each thin section drawing.

Thin section **A**

Thin section **B**

Thin section **C**[3]

(ii) Describe the texture of thin section **A** and explain how it formed.

.....

[2]

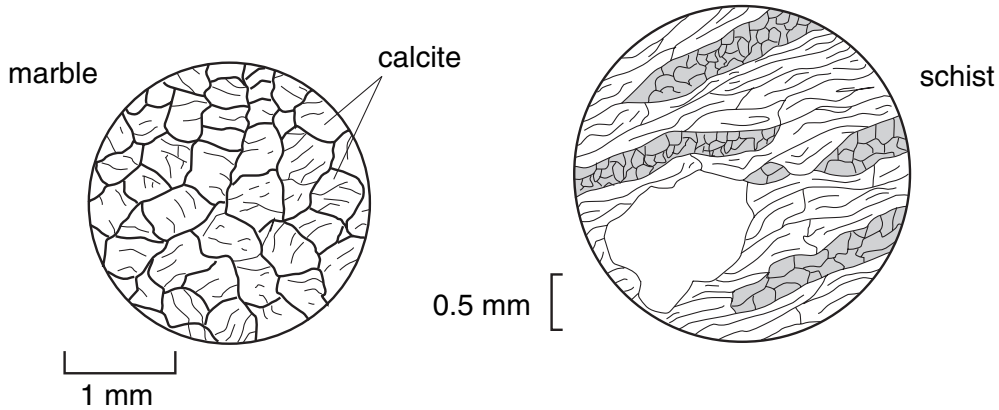
(iii) Describe the texture of thin section **B** with reference to grain shape and sorting.

.....

[2]

(b) Metamorphic rocks form as a result of changes due to heat and/or pressure.

Study the thin section drawings below.



(i) Complete the table below.

thin section	type of metamorphism	temperature (high or low)	pressure (high or low)
marble			low
schist		high	

[2]

(ii) What is the parent rock of marble?

.....[1]

(iii) What is the parent rock of schist?

.....[1]

(iv) What is the mineral composition of schist?

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

(c) What would happen to the size of the crystals in a rock during increasing metamorphism?

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

(d) Define the terms *era*, *system* and *geological column*.

era

.....

system

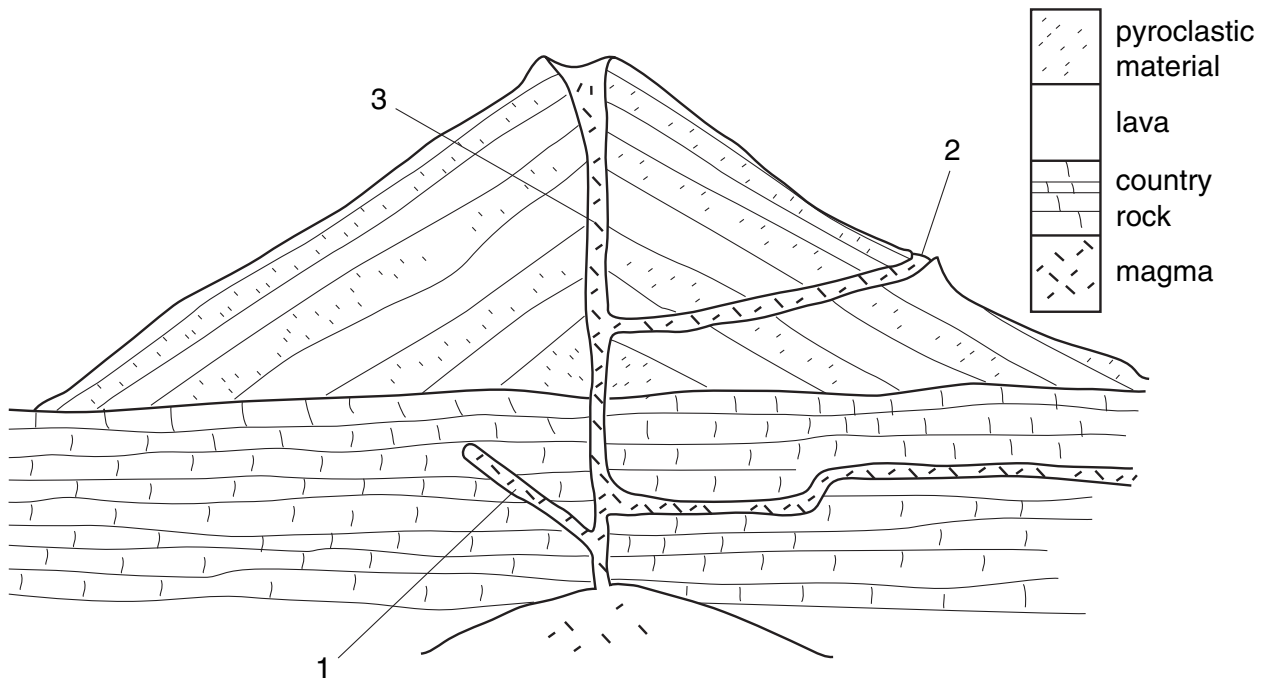
.....

geological column

.....[3]

[Total: 17]

2 The cross sectional diagram below shows the relationship between several igneous features and the surrounding country rocks.



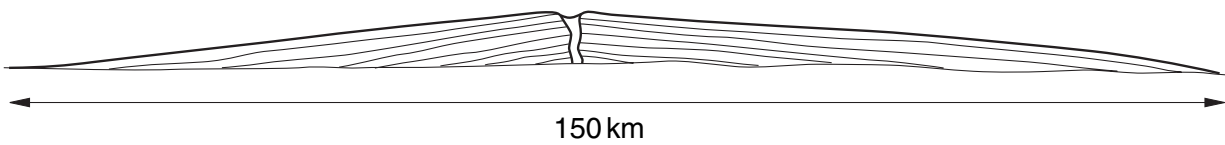
(a) (i) Name the igneous features shown.

1 2
3 [3]

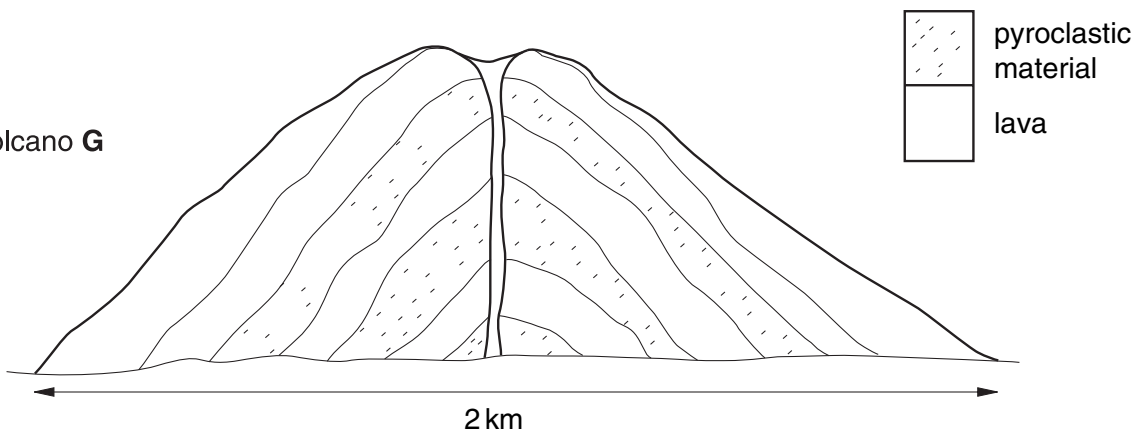
(ii) Label on the diagram a transgressive sill. [1]

(b) The diagram below shows the forms taken by two volcanoes.

volcano F



volcano G



(i) Name the type of volcano shown in the diagrams above.

volcano **F**

volcano **G**[2]

(ii) In which plate tectonic settings would you expect to find volcanoes **F** and **G**?

F

G[2]

(iii) Explain why volcanoes occur at destructive plate margins.

.....

.....

.....

.....[2]

(c) Name and describe **two** methods of risk analysis a geologist could carry out in areas of possible volcanic activity.

method

description

.....

method

description

.....[4]

(d) Define the term *geyser*.

.....

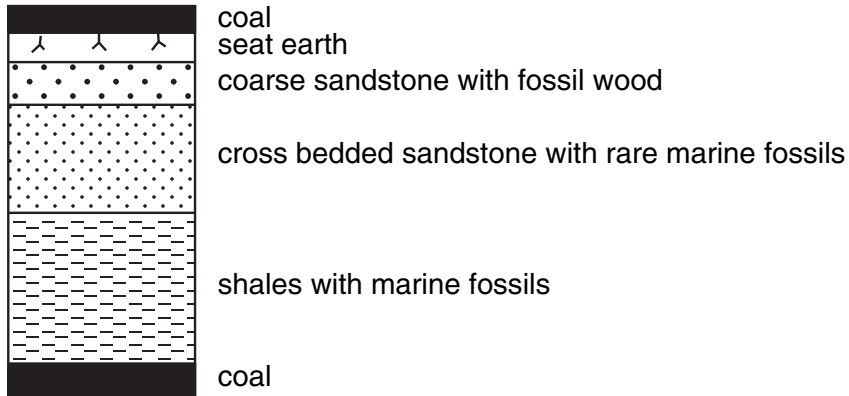
.....

.....

.....[2]

[Total: 16]

3 The vertical sequence below shows rocks deposited in a delta.



(a) (i) Define the term *delta*.

.....

[2]

(ii) Draw a cross section through a delta to show the areas where topset, bottomset and foreset beds are deposited.

[3]

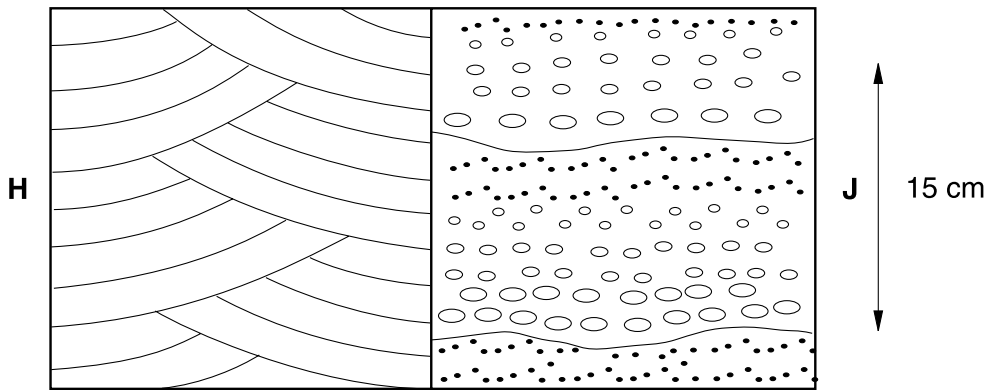
(iii) Name a rock from the vertical sequence that could be formed in

topset beds

bottomset beds

foreset beds[3]

(b) Two sedimentary structures were found in the sandstones.



(i) Name the sedimentary structures shown above.

H J [2]

(ii) Describe how structure J formed.

.....

.....

.....

..... [2]

(iii) How is structure J used to determine the way up of a bed?

.....

.....

.....

..... [2]

(c) (i) What name is given to the repeated sequence shown by deltaic deposition?

..... [1]

(ii) Explain how this repeated sequence forms.

.....

.....

.....

..... [2]

[Total: 17]

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