

Surname	Centre Number	Candidate Number
Other Names		2



GCE A level

1215/03

GEOLOGY – GL5

Thematic Unit 3

Geological Evolution of Britain

P.M. TUESDAY, 10 June 2014

ONE of TWO units to be completed in 2 hours

For Examiner's use only			
	Question	Maximum Mark	Mark Awarded
Section A	1.	15	
Section B	2.	25	
	3.		
	4.		
	Total	40	

1215
03/0001

ADDITIONAL MATERIALS

In addition to this and one other examination paper, you will need a calculator.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **question 1** in Section A (15 marks) and **one** question from Section B (25 marks).

INFORMATION FOR CANDIDATES

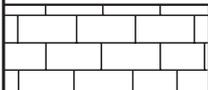
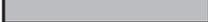
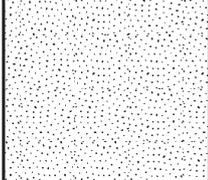
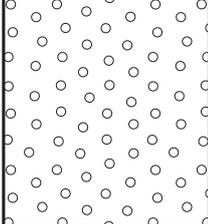
The number of marks is given in brackets at the end of each question or part-question.

You are reminded of the necessity for good English and orderly presentation in your answers.

SECTION A

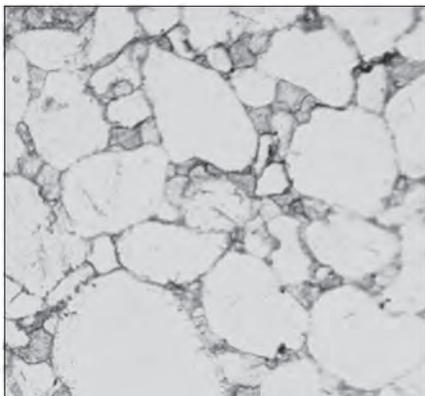
1. **Figure 1a** shows a stratigraphical section made by a student studying rocks in NW Scotland. The sequence dips to the east at angles of less than 30° .

Figures 1b and **1c** are photographs showing features of the quartz sandstone **X**.

Rocks	Rock names or descriptions
	foliated rock with quartz and mica
Boundary	
	limestone
	gritstone
	calcareous siltstone
	quartz sandstone Y
	quartz sandstone X

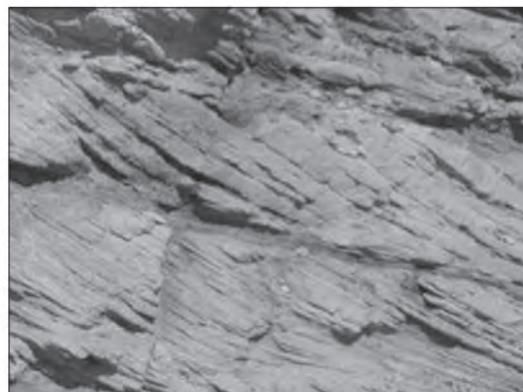
(not to scale)

Figure 1a



0 2
mm

Figure 1b



0 0.5
m

Figure 1c

- (a) (i) Using **Figure 1b** describe the texture of quartz sandstone **X**. [3]

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- (ii) Using **Figures 1a, 1b** and **1c** suggest, with reasons, the environment of deposition of the sediment which formed quartz sandstone **X**. [3]

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- (b) **Figures 1d** and **1e** show features identified as trace fossils found in quartz sandstone **Y**. **Figure 1d** is a vertical section while **Figure 1e** shows the upper bedding surface.



Figure 1d

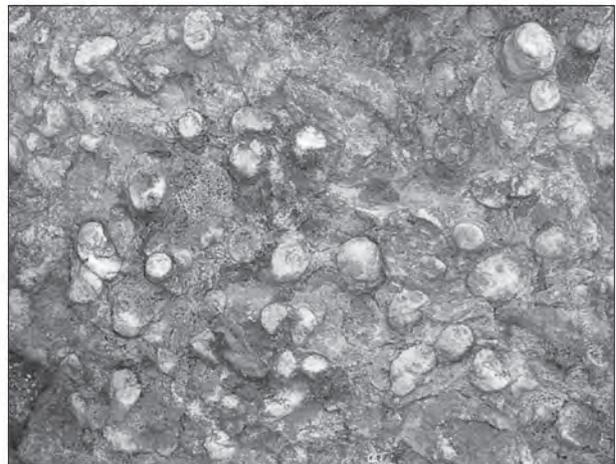


Figure 1e

- (i) Name the trace fossils shown in **Figure 1d** and **Figure 1e**. [1]

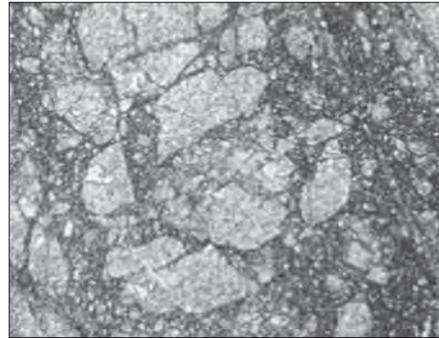
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- (ii) Describe the features shown in **Figure 1d** and **Figure 1e**. [2]

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(c) **Figure 1f** is a photograph of the top of the limestone just beneath the boundary.



0 5
mm

Figure 1f

Refer to **Figure 1a** and **Figure 1f**.

- (i) Describe and explain the evidence that suggests that the boundary between the quartz mica rock and the limestone is a thrust fault. [3]

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- (ii) The student suggested that the thrust fault formed during the Alpine Orogeny. Evaluate this statement. [3]

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15

SECTION B

Answer one question only.

Write your answer in the remaining pages of this booklet.

2. (a) With reference to examples from the British stratigraphical column, explain how sedimentary rocks and their contained fossils may be used to interpret fluvial and deltaic environments of deposition.
- (b) Evaluate the reliability of the evidence. [25]
3. (a) Describe the rocks and fossils of the Carboniferous which suggest that they were formed in
- tropical,
 - shallow marine and
 - terrestrial environments.
- (b) Evaluate whether changes in climate through time are an accurate reflection of changes in latitude. [25]
4. Describe and evaluate the evidence from a named orogenic belt that may be used to reconstruct the plate tectonic regime in which it developed. [25]

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