



GCE A level

1215/01

GEOLOGY – GL5

Thematic Unit 1

Quaternary Geology

A.M. TUESDAY, 16 June 2015

ONE of TWO units to be completed in 2 hours plus your additional time allowance

Surname _____

Other Names _____

Centre Number _____

Candidate Number 2 _____

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

ADDITIONAL MATERIALS

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

INSTRUCTIONS TO CANDIDATES

Use black ink, black ball-point pen or your usual method.

Write your name, centre number and candidate number in the spaces on the front cover.

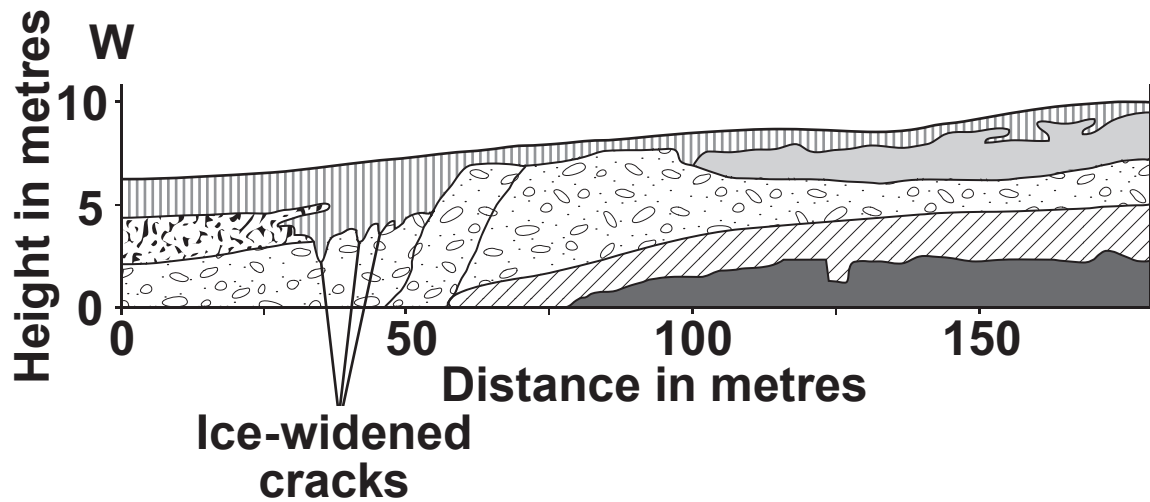
Answer QUESTION 1 in Section A (15 marks) and ONE question from Section B (25 marks).

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.

FIGURE 1a



Key
(in stratigraphic order):



FIGURE 1b

Criccieth Till



FIGURE 1c

fluvioglacial deposit



The pen used as a scale is 12 cm long.

SECTION A

1. FIGURE 1a opposite is a sketch of a cliff section of unconsolidated Quaternary sediments at Glanllynau, North Wales. FIGURE 1b opposite is a photograph of the Criccieth Till. FIGURE 1c opposite is a photograph of the fluvio-glacial deposit.

(a) Refer to FIGURES 1a and 1b.

(i) Describe the texture of the Criccieth Till deposit. [2]

1(a) (ii) The Criccieth and Llanystumdwy Tills have been interpreted as being of glacial origin. Explain how the texture of the Criccieth Till supports this glacial origin. [2]

(iii) Explain the evidence for a break in sedimentation between the Criccieth Till and the fluvio-glacial deposit. [2]

1(b) Refer to FIGURES 1a, 1b and 1c.

- (i) Explain how the texture of the fluvio-glacial deposit in FIGURE 1c supports the interpretation of it being formed by fluvio-glacial processes. [2]**

- (ii) Suggest how changing climatic conditions may have led to the deposition of the fluvio-glacial deposit on top of the Criccieth Till. [3]**

SECTION B

Answer ONE question only.

Write your answer in the remaining pages of this booklet.

2(a) Explain the links between the continental ice sheets and sea level.

(b) Evaluate how the geological evidence for sea level change can be used in the interpretation of Quaternary glacial and interglacial stages in Britain. [25]

3(a) Explain how sediments typical of turbidite environments are the result of the physical processes in a turbidity flow.

(b) Evaluate the use of sedimentary structures in the interpretation of turbidite environments. [25]

4. “Geological structures and bodies result in a variety of relief forms.”

Evaluate this statement with reference to the relationship between geology and topography.

[25]

Lined paper template with horizontal ruling lines.

ACKNOWLEDGEMENTS

**Adapted from: Geological Conservation
Review; Quaternary of Wales Nature
Conservancy Council**