

GENERAL CERTIFICATE OF EDUCATION BOARD

General Certificate of Education Examination

Geology 2
0755

JUNE 2023

ADVANCED LEVEL

Subject Title	Geology
Paper No.	Paper 2
Subject Code No.	0755

THREE HOURS

Answer FOUR questions.
ALL QUESTIONS CARRY EQUAL MARKS.

You are reminded of the value of clear sketches, even when not specifically demanded by the wording of the question, and of the necessity for good English and orderly presentation in your answers.

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1. (a) What major differences exist between a lava flow and a sill? (6 marks)
 (b) With the aid of a diagram describe the Bowen's Reaction Series. (10 marks)
 (c) Describe and account for the formation of any THREE major structures associated with folds. (9 marks)
 (Total = 25 marks)

2. (a) Define the following terms as used in Astrogeology:
 (i) Planet; (2 marks)
 (ii) Asteroids; (2 marks)
 (iii) Solar system. (2 marks)
 (b) Outline five differences between the Oceanic and the Continental lithospheres. (5 marks)
 (c) (i) State the possible causes of earthquakes. (4 marks)
 (ii) Give the properties of transverse waves. (10 marks)
 (Total = 25 marks)

3. (a) Explain the processes by which River Mungo in Cameroon erodes and transports its load. (10 marks)
 (b) Describe the composition, texture and structure of sedimentary rocks formed in the following environments:
 (i) Piedmont environment; (5 marks)
 (ii) Deep marine environment, (5 marks)
 (iii) Transgressive shorelines. (5 marks)
 (Total = 25 marks)

4. (a) (i) Name and explain the processes that are associated with contact metamorphism. (6 marks)
 (ii) Discuss the mineral composition, texture and mode of formation of TWO foliated metamorphic rocks. (6 marks)
 (b) Briefly explain the following evidences in support of sea-floor spreading:
 (i) Sea-floor topography; (4 marks)
 (ii) Palaeomagnetic stripes. (4 marks)
 (c) State the factors that influence the location of a quarry site for construction materials. (5 marks)
 (Total = 25 marks)

5. (a) Show how the following have been used to group crystals into different systems:
 (i) Crystallographic axes and axial angles;
 (ii) Diagnostic symmetry elements. (14 marks)
 (b) Discuss the pyroxene group of minerals based on:
 (i) Structure;
 (ii) Crystallography;
 (iii) Diagnostic physical properties. (11 marks)
 (Total = 25 marks)

6. (a) Discuss the preservation potential of the following:
 (i) Cardium; (3 marks)
 (ii) Paradoxides; (3 marks)
 (iii) Spirifer. (3 marks)
 (b) Show how fossils are valuable in the reconstruction of the conditions and palae-environments under which sedimentary rocks containing them were formed. (6 marks)
 (c) (i) Define radiometric dating. (2 marks)
 (ii) State and describe TWO radiometric methods that can be used to date granites found in Cameroon. (8 marks)
 (Total = 25 marks)

GO BACK AND CHECK YOUR WORK

