

A LEVEL GEOLOGY PAPER 2 2013 MEETLEARN.COM

*Advanced Level
Geology Paper 2*

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INSTRUCTIONS: answer four questions, one from each section. All question carries 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 answer.

SECTION A

1. (a) Distinguish between the following

- **Evolute and umbilicus (4 marks)**
- **Aperture and umbilicus; (4 marks)**
- **Aristotle's Lantern and Fascicle; (4 marks)**

(b) Draw and label the following morphological variations found in Rugose corals and give an example of each

(i) Dendroid Corallum;

(ii) Phaceloid Corallum (6 marks)

(c) Draw and label the internal features of the pedicle valve of a Brachiopod. Describe the functions of TWO of the internal features you have labelled (7 marks)

(Total = 25 marks)

2. (a) Describe the variations in the following features of Trilobites:

- **Facial suture;**
- **Pygidium;**
- **Genal angle (12 marks)**

(b) Draw and label a named blind trilobite and state with reasons the mode of life (6 marks)

(c) Outline the geological history of Trilobites (7 marks)

(Total = 25 marks)

3. *Explain how you would determine the way-up of a rock sequence and describe the origin of the features use. (Total = 25 marks)*

SECTION B

4. (a)

- *What is an index mineral? (3 marks)*
- *Explain the significance of the following mineral; chlorite, garnet, kyanite sillimanite as index mineral. (8 marks)*

(b) *Distinguish between schistosity, foliation and banding. (6 marks)*

(c) *Describe the mineralogical and texture changes which occur when an igneous intrusion intrudes into shale (8 marks)*

(Total = 25 marks)

5. *With reference to sedimentary, igneous and metamorphic rocks, discuss the features that can help in the interpretation of their environment of formation (25 marks)*

6. (a)

- *What do you understand by the viscosity of a magma? (3 marks)*
- *Outline the factors which influence the viscosity of magma. (4 marks)*

(b) *Describe FOUR volcanic landforms and their mode of formation (12 marks)*

(c) *On the outline World map (on separate insert), insert and label the present-day volcanoes (6 marks)*

(Total = 25 marks)

SECTION C

7. (a) *Distinguish between the following terms as used in geology*

- *Capacity and competence of a river; (5 marks)*
- *Corrosion and attrition (5 marks)*

- *A braided and a meandering stream (5 marks)*

(b) Outline the chemical weathering process which may most likely affect the following rock types

(i) Basalts; (3 marks)

(ii) Granites; (3 marks)

(iii) Limestones. (4 marks)

(Total = 25 marks) MeetLearn.com

8. (a) Describe the geological factors which may influence

- *The position of spring; (11 marks)*
- *The sitting of a borehole for water (9 marks)*

(b) Outline FIVE ways in which groundwater may be contaminated (5 marks)

(Total = 25 marks)

9. (a) Attempt a classification of folds. (19 marks)

(b) State three ways by which folds can be recognized a geological map (6 marks)

(Total = 25 marks)

SECTION D

10. (a) What do you understand by a source rock? (4 marks)

(b) Describe with illustration, the different types of oil traps (15 marks)

(c) List four techniques used in oil exploration (6 marks)

(Total = 25 marks)

11. Describe and explain the characteristic feature of a;

- *Constructive plate margins (9 marks)*
- *Destructive plate margins; (9 marks)*
- *Triple junction (7 marks)*

Illustrate your answers with labelled diagram

(Total = 25 marks)

12. (a) what do you understand by the following physical properties of minerals?

- *Color;*
- *Hardness*
- *Specific gravity*
- *(12 arks)*

(b) Discuss the factors which control each of the above physical properties

(13 marks) (Total = 25 marks)

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