

GENERAL CERTIFICATE OF EDUCATION BOARD

General Certificate of Education Examination

0755 GEOLOGY 1

JUNE 2023

ADVANCED LEVEL

Centre No.	
Centre Name	
Candidate Identification No	
Candidate Name	

Mobile phones are NOT allowed in the examination room.

MULTIPLE CHOICE QUESTION PAPER

1 HOUR 30 MINUTES.

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. Make sure you have a soft HB pencil and an eraser for this examination.

1. USE A SOFT HB PENCIL THROUGHOUT THE EXAMINATION:
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the examination begins:

3. Check that this question booklet is headed "Advanced Level - 0755 GEOLOGY 1"
4. Fill in the information required in the spaces above.
5. Fill in the information required in the spaces provided on the answer sheet using your HB pencil:
Candidate Number and Name, Centre Number and Name.
Take care that you do not crease or fold the answer sheet or make any marks on it other than those asked for in these instructions.

How to answer the questions in this examination

6. Answer ALL the 50 questions. All questions carry equal marks.
7. Non-programmable calculators are allowed.
8. Each question has FOUR suggested answers: A, B, C and D. Decide on which answer is correct. Find the number of the question on the Answer Sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen.

For example, if C is your correct answer, mark C as shown below:

[A] [B] [C] [D]

9. Mark only one answer for each question. If you mark more than one answer, you will score a zero for that question. If you change your mind about an answer, erase the first mark carefully, then mark your new answer.
10. Avoid spending too much time on any one question. If you find a question difficult, move on to the next question. You can come back to this question later.
11. Do all rough work in this booklet, using, where necessary, the blank spaces.
12. **At the end of the examination, the invigilator shall collect the answer sheet first and then the question booklet after. DO NOT ATTEMPT TO LEAVE THE EXAMINATION HALL WITH IT.**

Turn Over

1. The earth's galaxy is called ?
 A Nebular
 B Constellation
 C Milky Way
 D Supernova
2. Meteorites composed entirely of silica are called:
 A Siderolites
 B Aerolites
 C Siderites
 D Tektites
3. The layer of the earth with thickness of 35km is known as :
 A Lithosphere
 B Core
 C Crust
 D Mantle

Use the diagram below (figure 1) to answer questions 4 and 5.

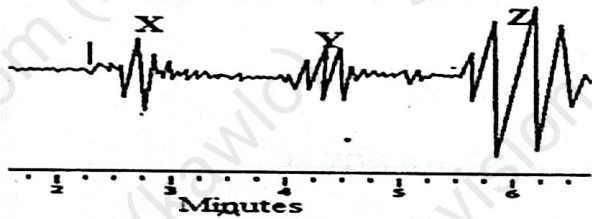


Figure 1

4. Which type of seismic wave is represented at point Y ?
 A Primary waves.
 B Rayleigh Surface waves.
 C Secondary waves.
 D Love waves.
5. What is the time of arrival of seismic wave type X ?
 A 2 minutes.
 B 2.5 minutes.
 C 3 minutes.
 D 3.5 minutes.

2

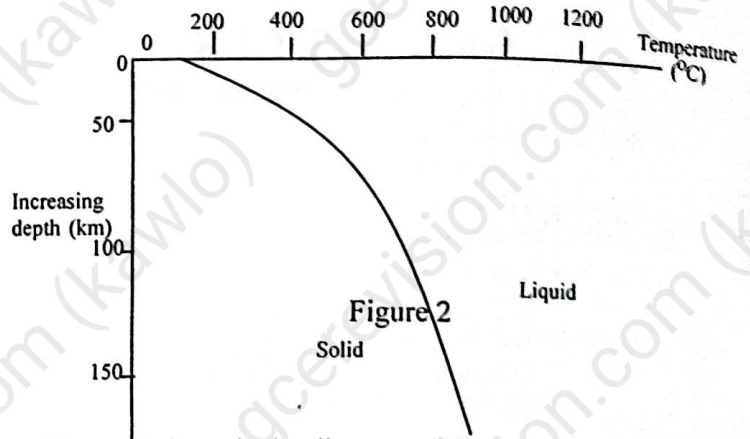


Figure 2 above is the diagram of the geothermal gradient. Study this graph and answer question 6.

6. At what depth can molten rock be obtained ?
 A 35km
 B 85km
 C 19km
 D 5km

Study the drawing of the crystal model and use it for questions 7, 8 and 9.

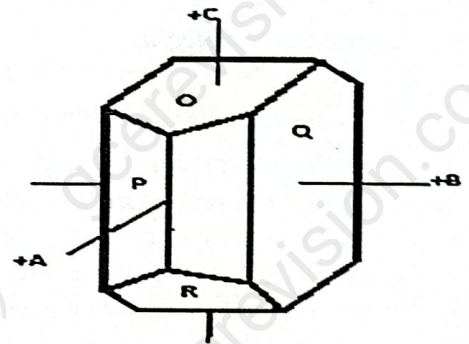


Figure 3

7. Which of the axial angles below describes the crystallographic axes of the model above ?
 A $\alpha = \beta = \delta = 90^\circ$
 B $\alpha = \delta = 90^\circ \beta \neq 90^\circ$
 C $\alpha \neq \beta \neq \delta \neq 90^\circ$
 D $\alpha = \beta = 90^\circ \delta = 120^\circ$
8. Identify the form labeled R.
 A Prism
 B Hemi-orthodome
 C Basal pinacoid
 D Side pinacoid
9. Suggest the Miller Index of face P.
 A $(1\bar{1}0)$
 B (110)
 C $(10\bar{1})$
 D (010)

10. The minerals quartz, tridymite and cristobalite are :
- A Pseudomorphs of SiO₂
 - B Polymorphs of SiO₄
 - C Polymorphs of SiO₂
 - D Pseudomorphs of SiO₄

11. The diagram below (figure 4) represents a simple silicate structure. What is the Silicon: Oxygen ratio represented by the structure?



Figure 4

- A 2:7
- B 1:3
- C 1:2
- D 2:8

The characteristics of some specimens are presented below to help you answer question 12.

Specimen M has a hardness of 6.0 – 6.5, cleaves in two directions at right angles and can be white in colour.

Specimen N is transparent, flaky, with a hardness of 2 -3 and cleaves in one direction.

12. Specimens M and N respectively are:
- A Quartz and Olivine
 - B Orthoclase and Muscovite
 - C Quartz and Biotite
 - D Plagioclase and Muscovite

13. Study the cliff section (figure 5) below.

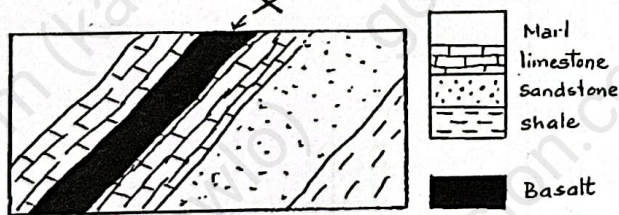
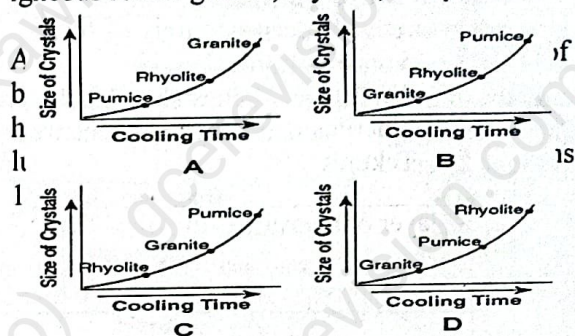


Figure 5

What is the structure labeled X ?

- A Phaccolith
- B Lopolith
- C Dyke
- D Sill

14. Using the cooling time of magma and the size of crystals produced, identify the graph which correctly shows the relative positions of the igneous rocks: granite, rhyolite, and pumice ?



15. What is the name of the rock?
- A Granodiorite
 - B Granite
 - C Gabbro
 - D Rhyolite

16. In which environment was the rock formed ?
- A Hypabyssal environment
 - B Plutonic environment
 - C Volcanic environment
 - D Hypabyssal and Plutonic environment

Figure 6 below refers to two typical volcanic structures characterised by steep and gentle slopes. Use it to answer questions 17 and 18.

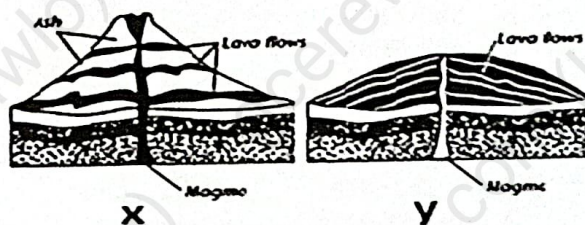


Figure 6

17. X and Y are respectively referred to as:
- A Shield volcano and composite volcano
 - B Composite volcano and cinder cone volcano
 - C Shield volcano and dome volcano
 - D Cinder cone volcano and shield volcano
18. The composition of the materials that built up the type of structure in Y is :
- A Basaltic
 - B Doleritic
 - C Andesitic
 - D Rhyolitic

19. Mount Cameroon shows the same kind of activity in recent years and erupted not long ago. In terms of activity it is described as a(n):
- A Dormant Volcano
 - B Inactive Volcano
 - C Active Volcano
 - D Extinct Volcano

Study the graph in Figure 7 below showing the pressure-temperature range of metamorphism and answer questions 20 and 21.

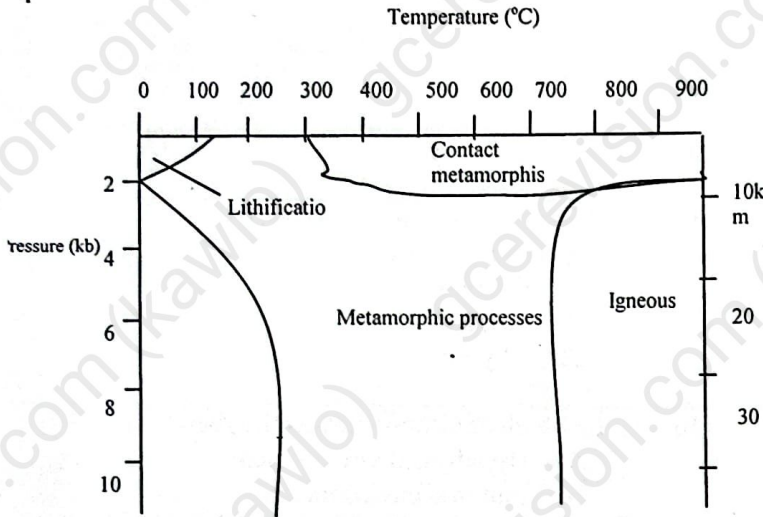


Figure 7

20. At what minimum temperature range would a liquid phase appear during the metamorphic process affecting a terrain of shale sediments.
- A 0-200°C
 - B 300- 500°C
 - C 600- 700°C
 - D > 900°C
-
21. Contact metamorphic rocks are derived at depths of:
- A 0 – 5 km
 - B 0 – 20 km
 - C 0 – 30km
 - D 0 – 40km
-
22. Which of the following textures is formed when dynamic metamorphism acts on granites ?
- A Cataclastic texture
 - B Mylonitic texture
 - C Gneissose texture
 - D Augen texture

Study the diagram of folded beds below and answer questions 23 and 24.

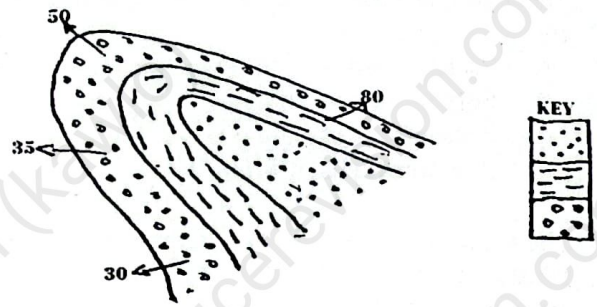


Figure 8

23. The fold shown above can be best described as :
- A Synclinal anticline
 - B Antiformal syncline
 - C Overturned antiform
 - D Inclined anticline
-
24. Based on the degree of tightness, the above fold can be classified as :
- A Tight fold
 - B Gentle fold
 - C Closed fold
 - D Open fold
-
25. A folded sandstone bed dips at 54° and 41° on opposite limbs. What is the tightness of the folded sandstone ?
- A Gentle
 - B Open
 - C Close
 - D Tight

Study the histogram below (figure 9) and answer questions 26 and 27.

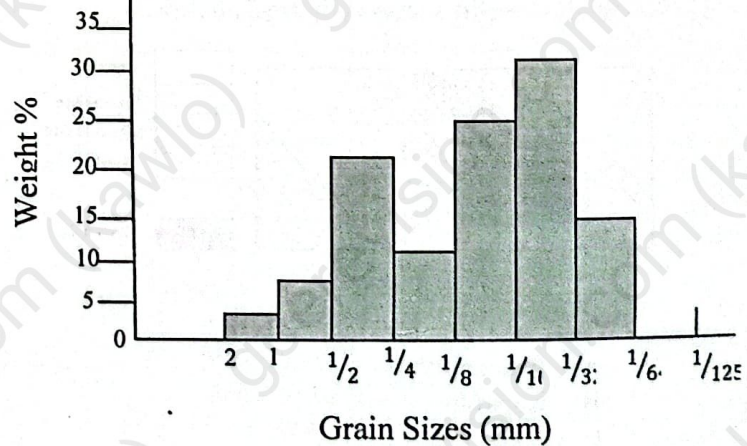


Figure 9

26. Which of the following conclusions can be drawn from the histogram?
- The sediment is well sorted
 - The sediment is poorly sorted
 - The sediment is far away from its source
 - The sediment has a high porosity and permeability

27. Where is the most probable environment from where this sediment was collected?
- Beach
 - Dune
 - Alluvial fan
 - River channel

28. A bioclastic limestone composed of cemented coarse shell debris is called :
- Shelly limestone
 - Foraminiferal limestone
 - Biostromal limestone
 - Coquina

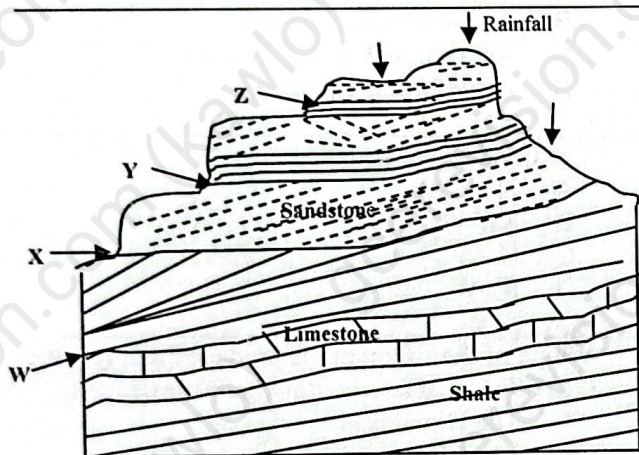


Figure 10

29. From Figure 10, which of the following points constitutes springs ?
- W and X
 - X and Z
 - Y and Z
 - Y and W
30. The chemical weathering process which converts anhydrite into gypsum is called ?
- Hydrolysis
 - Reduction
 - Hydration
 - Oxidation

Study the schematic section (figure 11) showing the main zones of marine sedimentation and answer questions 31 and 32.

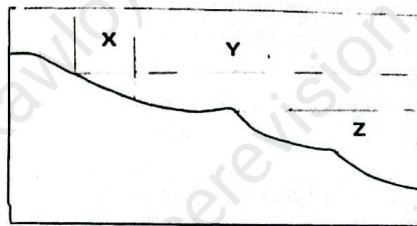


Figure 11

31. Identify zone Z.
- Pelagic zone
 - Abyssal zone
 - Bathyal zone
 - Neritic zone
32. A typical feature found in Y is a :
- Bar
 - Spit
 - Tombolo
 - Coral reef

The diagrams below (figure 12) show sutures displayed by cephalopods. Study and answer questions 33 and 34.

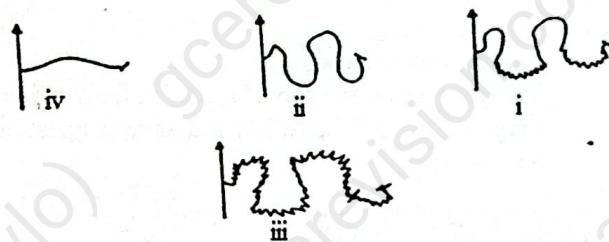


Figure 12

33. In which of these species of organisms can sutures (i) and (iv) be found ?
- Ammonite and Nautilus
 - Ceratite and Goniatite
 - Goniatite and Ammonite
 - Ceratite and Nautilus
34. The possible mode of life of organisms with the above sutures is :
- Nektonic
 - Planktonic
 - Vagrant
 - Attached

The diagram below (figure 13) shows a fossil observed by a student in the field.

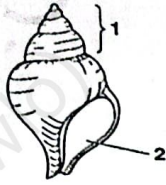


Figure 13

5. What term is used to describe the section of the fossil labeled 1 ?
- Spire
 - Columella
 - Aperture
 - Apex
-
5. Which of the following best describes Trilobites?
- Has an axial and two lateral regions
 - They live in deeper waters
 - Has a dorsal exoskeleton
 - Consist of grooves and furrows
-
7. Which of the following periods occurred within the Mesozoic era ?
- Permian
 - Devonian
 - Triassic
 - Carboniferous

Study the cross section of a cliff indicated on the diagram below (figure 14) and answer questions 38 and 39.

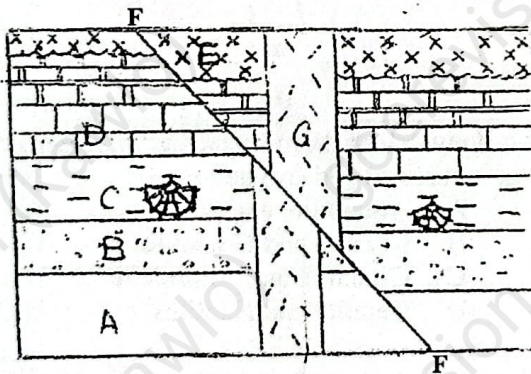


Figure 14

8. The youngest event on the diagram above is :
- Deposition of bed E
 - Intrusion of dyke G
 - Uplift and erosion
 - Faulting

39. Which stratigraphic principle represents the relationship between the intrusion and the country rocks ?
- Superposition
 - Cross cutting Relationship
 - Included fragments
 - Original horizontality

Study the sketch map below (15) and answer the questions 40 and 41.

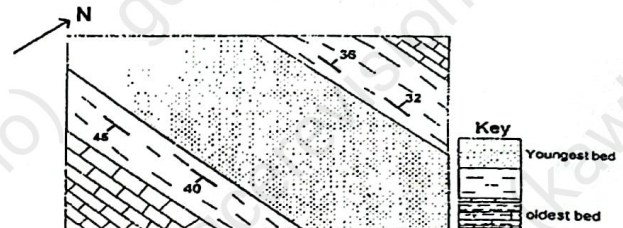


Figure 15

40. The fold shown on the map can be best described as :
- An asymmetrical syncline
 - An antiformal syncline
 - An asymmetrical anticline
 - A synformal anticline
-
41. The trend of the core bed is :
- NW - SE
 - SW - NE
 - N - S
 - E - W

42. Which of the following is produced as a result of the collision of two continental plates ?
- The Himalayas
 - The Alps
 - The Andes
 - East African Rift Valley

43. What is the geologic significance of polar wandering curves ?
- To indicate that lithospheric plates are in motion
 - To indicate that the sea floor is spreading
 - To indicate that continents have changed positions
 - To indicate the presence of polar organisms in India

44. Suggest a mountain that can originate from oceanic hot spots.
- The Himalayas mountain
 - The Andes mountain
 - Hawaiian mountain
 - Japanese volcanic islands

45. The down slope movement of rock and soil under the direct influence of gravity refers to ?
- A Mass wasting.
 - B Rock slumping.
 - C Rock sliding.
 - D Rock creeping.
-
46. An environmental problem created by the burning of fossil fuel is :
- A Atmospheric pollution
 - B Desertification
 - C Global warming
 - D Decrease in carbondioxide content
-
47. A condition that best describes an impermeable roofing material is :
- A Load bearing
 - B Easily shaped
 - C Resistance to weathering
 - D Beautiful colour
-
48. Which of the following hypothermal ores are precipitated nearest to the igneous intrusion ?
- A Cassiterite
 - B Galena
 - C Sphalerite
 - D Pyrite
-
49. A subsurface water zone in which the pores are partially filled with water and air bubbles is called ?
- A Water table zone
 - B Phreatic zone
 - C Vadose water zone
 - D Zone of saturation
-
50. The main oil producing basin in Cameroon is
- A Douala-Kribi Campo basin
 - B Garoua basin
 - C Rio-del -Rey basin
 - D Benue basin.
-

STOP
GO BACK AND CHECK YOUR WORK
