

GENERAL CERTIFICATE OF EDUCATION (GCE) BOARD
General Certificate of Education Examination

0755 GEOLOGY 1

JUNE 2021

ADVANCED LEVEL

Centre No. & Name	11477 G.B.H.S. BAHAM
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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 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.**

1. Which of the following planets is the largest in the Solar System in terms of mass and radius?
- A Saturn
B Jupiter
C Earth
D Mars

2. Which reason below explains why Venus has a higher surface temperature than Mercury?
- A Mercury is smaller than Venus so its surface cools quickly.
 - B Venus lies closer to the Sun than Mercury.
 - C Mercury's atmosphere is thin so retains little heat.
 - D Venus has a higher level of greenhouse gases than Mercury.

Study the diagram below (Figure 1) which shows the upper 600km of the Earth and answer questions 3 and 4.

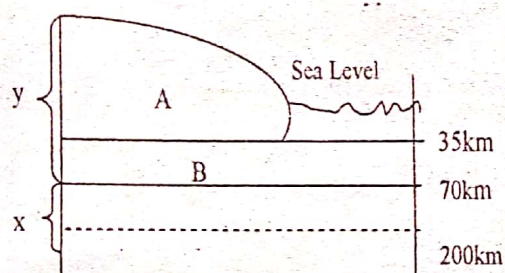


Figure 1

3. The layer labelled X is called?
- A Crust
 - B Mantle
 - C Asthenosphere
 - D Lithosphere

4. The discontinuity that exists at a depth of 35km is:
- A) Conrad
B) Moho
C) Lehman
D) Gutenberg

The diagram below (Figure 2) shows paths of earthquake waves through the Earth. Use the diagram to answer questions 5 and 6.

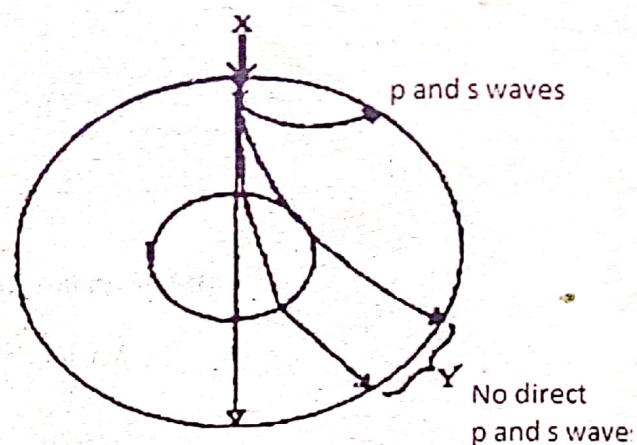


Figure 2

5. What does the letter X represent?
- A Epicentre
 - B Focus
 - C Isoseismic point
 - D Hypocentre
-
6. Why are P and S waves not received by seismographic stations located around Y?
- A P and S waves are refracted deeper into the Earth's interior.
 - B P and S waves are reflected back to the surface.
 - C The P waves are refracted while the S waves are not transmitted.
 - D P and S waves encounter a liquid medium.

Study the crystal model below (Figure 3) and answer questions 7, 8 and 9.

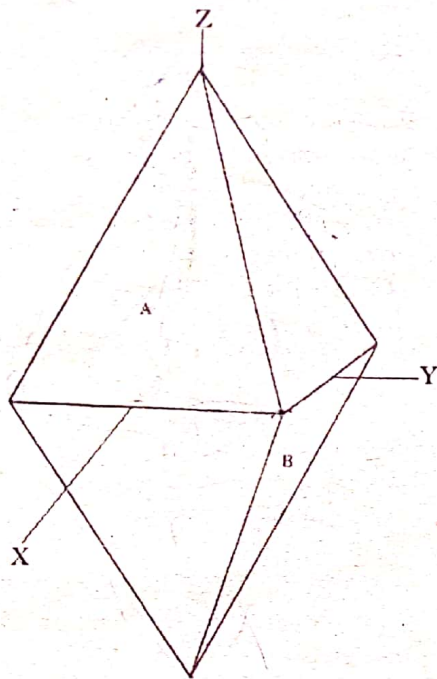


Figure 3

7. The symmetry elements of the crystal model above are:

A 9 planes, 13 axes, a centre
 B 5 planes, 5 axes, a centre
 C 6 planes, 6 axes, a centre
 D 3 planes, 4 axes, a centre

8. What are the Miller indices of face A?

A 101
 B $1\bar{1}1$
 C 111
 D 011

9. The letters X, Y and Z represent

A Axes of symmetry
 B Rotational axes
 C Crystallographic axes
 D Inversion axes

10. Give two diagnostic properties of quartz

A Vitreous lustre, one directional cleavage
 B Hardness 8, vitreous lustre
 C Conchoidal fracture, hardness 6
 D Hardness 7, vitreous lustre

11. Olivine is a nesosilicate mineral with two end members. Name and give their formulae:

A Forsterite (Mg_2SiO_4) and fayalite (Fe_2SiO_4)
 B Fayalite (Fe_2SiO_4) and Enstatite (MgSiO_3)
 C Hornblende ($\text{Mg}_7\text{Si}_8\text{O}_{22}$) and Enstatite and (MgSiO_3)
 D Enstatite (MgSiO_3) and Forsterite (Mg_2SiO_4)

12. Which of the following mineral is an aluminosilicate?

A Tourmaline
 B Andalusite
 C Olivine
 D Garnet

13. Very light vesicular volcanic rocks formed from acid magma are known as:

A Pumice
 B Scoria
 C Bombs
 D Tuffs

The diagram below (Figure 4) illustrates an explosive volcanic eruption. Samples of pyroclastic debris collected at point A measure more than 64mm and those at point B measure less than 64mm in diameter. Use it to answer questions 14 and 15.

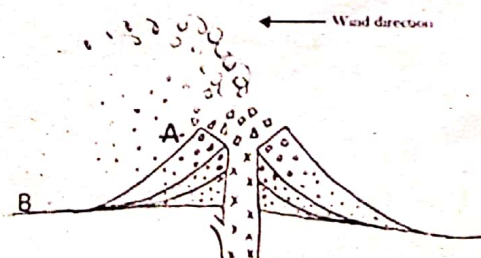


Figure 4

14. What collective term is given to the pyroclastic debris collected at points A and B?

A Ash and cinder
 B Tephra
 C Volcanic fragments
 D Nuee ardente

Turn Over

15. Debris at locality B are found to have been welded by the residual heat of the eruption. Identify the rock most likely to have been formed:
- Volcanic breccia
 - Agglomerate
 - Ignimbrite
 - Basalt

The following drawings (Figure 5) show details of two igneous rocks. Study the diagram and answer questions 16 and 17.

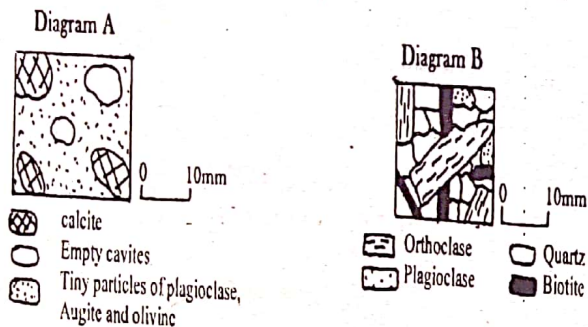


Figure 5

16. The textures shown by diagrams A and B respectively are:
- Porphyritic and graphic
 - Amygdaloidal and porphyritic
 - Vesicular and pegmatitic
 - Spherulitic and ophitic
17. What is the name given to the large orthoclase crystals in rock B?
- Phenoclasts
 - Phenocrysts
 - Porphyroblasts
 - Porphyrites
18. An igneous rock X was analyzed as having the following chemical composition:
 $\text{SiO}_2 = 53\%$; $\text{Al}_2\text{O}_3 = 17.5\%$; $\text{Na}_2\text{O} = 0.60\%$;
 $\text{K}_2\text{O} = 05.3\%$; others = 23.6%.
 If this rock has a fine grained texture, it is most likely:
- Rhyolite
 - Basalt
 - Andesite
 - Dolerite

19. Which of the following features indicates subsidence of the sea floor?
- Sea arches
 - Coastal waterfalls
 - Raised beaches
 - Wave cut platforms
20. Pebbles faceted by the abrasive effects of wind-blown sand are called:
- Millet seed grains
 - Desert pavements
 - Ventifacts
 - Rock pedestals
21. Streams consisting of interwoven channels are called:
- Graded streams
 - Braided streams
 - Consequent streams
 - Subsequent streams
22. Which of the following sedimentary rock types is formed by rapid deposition in a deep marine environment?
- Black shale
 - Greywackes
 - Arkoses
 - Lithic sandstone

Study the information given below and answer questions 23 and 24.

Sediments were collected from an environment. After sieving, it was discovered that the sediments were of markedly different grain sizes.

23. Which of the following conclusions can be drawn from the sediments? The sediments are:
- Far away from their source
 - Poorly sorted
 - Graded bedded
 - Moderately sorted
24. The possible environment where the sediments might have been collected is:
- Desert environment
 - Shallow shelf seas
 - Glacial environment
 - Beach environment
25. Which textural term is applied to metamorphic rocks consisting of equidimensional mineral grains?
- Idioblastic texture
 - Granoblastic texture
 - Hornfelsic texture
 - Decussate texture

26. Which of the following is a low grade metamorphic rock?
 A Green schist
 B Amphibolite schist
 C Blue schist
 D Garnet mica schist
27. What is the temperature and pressure condition under which sanidinite facies are formed?
 A High temperature , high pressure
 B Low temperature , high pressure
 C Moderate temperature , moderate pressure
 D High temperature , low pressure
28. Which of the following features is produced as a result of the collision between an Oceanic Plate and a Continental Plate?
 A The Andes
 B The Himalayas
 C The Mid Atlantic ridge
 D The Alps
29. Which of the following rock types is most likely to be found along a transform plate boundary?
 A Rhyolite
 B Andesite
 C Mylonite
 D Dacite
30. A transform fault is an example of a/an:
 A Strike-slip fault
 B Dip-slip fault
 C Oblique-slip fault
 D Normal fault

Study the diagram below (Figure 6) which shows folded beds, and answer questions 31 and 32.

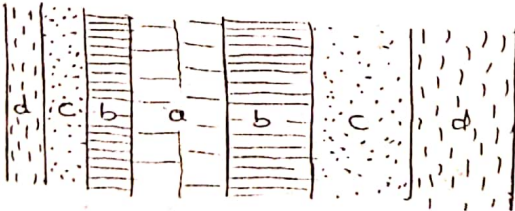


Figure 6

31. If the fold is an anticline, what is the order of deposition of the beds?
 A a,b,c,d
 B d,c,b,a
 C b,a,c,d
 D d.c.a.b.c.d
32. The fold shown by the diagram is a/an :
 A asymmetrical syncline
 B symmetrical anticline
 C asymmetrical anticline

D symmetrical syncline

33. Which of the following groups of organisms shows a planktonic mode of life?
 A Ammonoids
 B Brachiopods
 C Graptoloids
 D Nautiloids

Study the fossil diagram (Figure 7) which shows the internal morphology of a valve and answer questions 34 and 35.

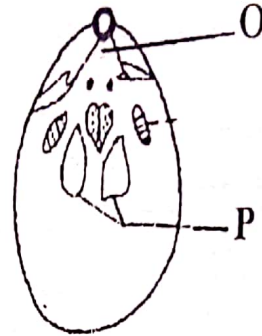


Figure 7

34. Identify the structures labelled O and P respectively:
 A Brachidium and adductor muscle scars
 B Delthyrium and diductor muscle scars
 C Dental plate and teeth
 D Sockets and adductor muscle scars
35. The valve shown in the diagram above is the:
 A Brachial valve
 B Right valve
 C Pedicle valve
 D Left valve
36. Which of the following is a period of the Lower Paleozoic?
 A Permian
 B Triassic
 C Devonian
 D Carboniferous
37. Which of the following time divisions covers almost three quarters of all geologic time?
 A Phanerozoic
 B Proterozoic
 C Precambrian
 D Cambrian
38. « In an undisturbed series of sedimentary rocks the oldest rocks are at the bottom and progressively younger rocks are found towards the top ». This is the Principle of :
 A Uniformitarianism
 B Faunal succession

Turn Over

- C Cross-cutting relationship
D Superposition
39. Two examples of humic coal include:
A Peat and boghead
B Lignite and bituminous
C Lignite and boghead
D Bituminous and cannel
40. Silver and gold mineralization have been found in veins around a granitic intrusion. Which of the following is most likely responsible for this?
A Magmatic segregation
B Hydrothermal activity
C Pneumatolysis
D Supergene enrichment
41. A major iron ore deposit in Cameroon is located at:
A Ngaoundal
B Minim Martap
C Betare Oya
D Mballam
42. Slate is a material often used for roofing because it:
A Has high strength due to interlocking minerals.
B Is impermeable and impervious.
C Is fine-grained and bedded.
D Is easily cleavable into very thin sheets
43. A formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs is called an:
A Aquitard
B Aquiclude
C Aquifer
D Aquifuge
44. Which of the following is a secondary volcanic hazard?
A Lahars
B Soil liquefaction
C Volcanic ash
D Nuee ardentes
45. Which of the following is most likely to cause flooding?
A Deforestation
B Thunder and tropical storms
C Building around stream banks
D Building construction

46. Which of the following rocks is the oldest in Cameroon?
A Porphyritic basalts at Bakingili.
B Pyritised shales at Ediki.
C Gneiss at Maham III.
D Sandstones at Bekoko

47. Which of the following is a coastal basin in Cameroon?
A Mamfe Basin
B Yola-Garoua Basin
C Djerem-Mbere Basin
D Rio del Rey Basin

48. What distance on the land is represented by a length of 5cm on a map of scale 1/50000?
A 25000m
B 250m
C 2500m
D 5000m

Study the diagram below (Figure 8) and answer questions 49 and 50.

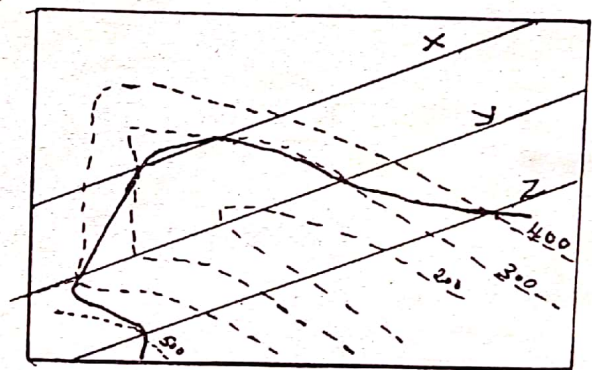


Figure 8

49. The lines labelled X, Y and Z are called:
A Stratum contours
B Contour numbers
C Bedding planes
D Bed boundaries
50. Lines X, Y and Z represent equal heights above sea level. Which height is represented by line Y?
A 500 m
B 400 m
C 200 m
D 300 m

PLEASE GO BACK AND CHECK YOUR WORK