GEOLOGY 1
0755

GENERAL CERTIFICATE OF EDUCATION BOARD

General Certificate of Education Examination

JUNE 2025 **ADVANCED LEVEL**

Centre Number	
Centre Name	
Candidate Identification Number	
Candidate Name	

Mobile phones are NOT allowed in the examination room.

MULTIPLE CHOICE QUESTION PAPER

Duration: One and a Half Hours.

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. An interstellar cloud of dust, hydrogen, helium and other ionized gases is called:
   A Comet
   B Galaxy
   C Nebula
   D Meteor

2. The closest galaxy to the planet Earth is:
   A Milky Way galaxy
   B Andromeda galaxy
   C Elliptical galaxy
   D Irregular galaxy

3. What name is given to the layer of the Earth between 35km and 2900km?
   A Mantle
   B Lower mantle
   C Upper Mantle
   D Outer core

Figure 1 below is the graph showing the velocity-depth curves of earthquake waves X and Y. Study the graph and answer questions 4 and 5.

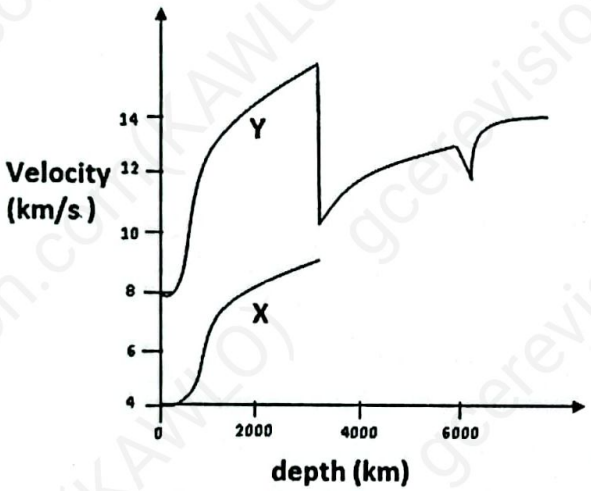

Figure 1

4. Determine the average velocity of wave Y at the surface of the Earth:
   A 0km/s
   B 8km/s
   C 12km/s
   D 14km/s

5. The deepest depth attained by wave X is approximately:
   A 1900km
   B 2900 km
   C 4900 km
   D 3900 km

6. Seismic waves that cause the components of a rock to vibrate perpendicularly to the direction of wave propagation are called:
   A Shear waves
   B Compressional waves
   C Love waves
   D Rayleigh waves

Study the crystal drawing below (Figure 2) and answer questions 7 and 8.

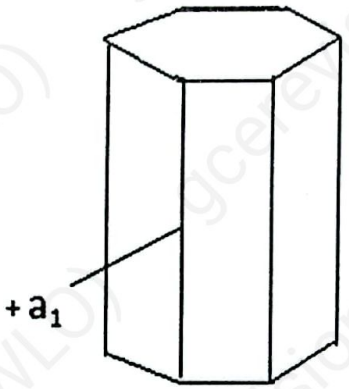

Figure 2

7. How many diagonal planes of symmetry does this crystal have?
   A 3 planes
   B 7 planes
   C 5 planes
   D 4 planes

8. An example of a mineral with such a habit is:
   A Rutile
   B Idocrase
   C Apatite
   D Zircon

9. A crystal face has as parameters 2a, b, 1c. What is the Miller Index of this face?
   A 201
   B 402
   C 102
   D 202

10. Which physical property of a given mineral displays the greatest variation?
    A Colour
    B Hardness
    C Lustre
    D Streak

Study (Figure 3) below which shows a section of a silicate mineral showing cleavage planes and use it to answer questions 11 and 12.

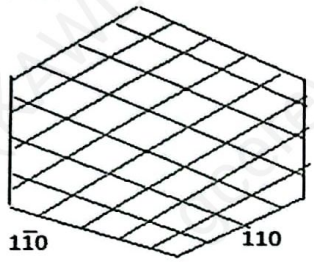

Figure 3

11. Identify the silicate mineral:
    - A Biotite
    - B Olivine
    - C Hornblende
    - D Pyroxene

12. The silicate mineral in question 11 above has a:
    - A Sheet structure
    - B Single chain structure
    - C Isolated structure
    - D Double chain structure

Below is an incomplete presentation of the Bowen's Reaction Series (Figure 4). Use it to answer questions 13 and 14.

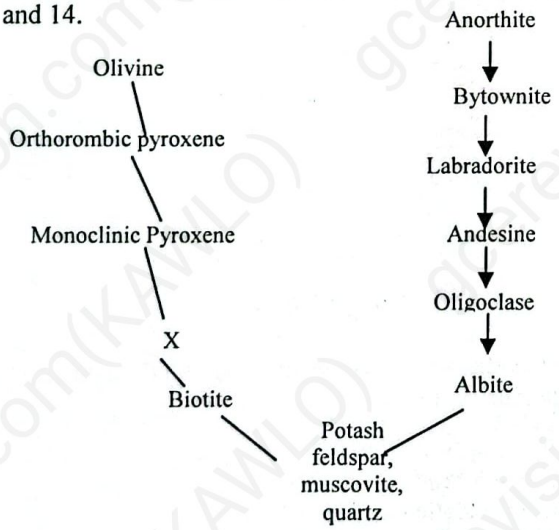

Figure 4

13. Identify the mineral represented by the letter X.
    - A Triclinic pyroxene
    - B Hypersthene
    - C Hornblende
    - D Augite

14. An example of a mineral in the continuous series which is an essential mineral in gabbro is:
    - A Labradorite
    - B Oligoclase
    - C Andesine
    - D Anorthite

15. In which of the following layers is basaltic magma most likely to originate?
    - A Lower crust
    - B Upper mantle
    - C Upper crust
    - D Lower mantle

An igneous rock X was analysed as having the following composition SiO_2=48.5%, Fe_2O_3=3.2%, CaO=11.7%, FeO=8.5%, Others=28.1%. Use this information to answer questions 16 and 17.

16. If this rock is phaneritic, it is most likely to be:
    - A Diorite
    - B Gabbro
    - C Granite
    - D Peridotite

17. The essential minerals of the rock mentioned in 16 above will be:
    - A Quartz, micas, plagioclase
    - B Andesine and hornblende
    - C Augite and labradorite
    - D Quartz, micas, feldspars and amphiboles

Figure 5 below shows the texture of an igneous rock. Study it and answer questions 18 and 19.

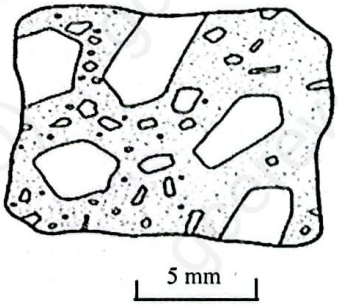

Figure 5

18. Identify the texture shown on the diagram above:
    - A Graphic
    - B Ophitic
    - C Porphyritic
    - D Poikilitic

19. The texture mentioned in question 18 was most likely formed as a result of:
    - A Simultaneous crystallisation of minerals
    - B Crystallisation in the plutonic and volcanic environments
    - C Very slow crystallisation of magma
    - D Crystallization in an environment where crystals grow at different rates

20. Identify the marble produced from the recrystallization reaction below:
$2\ CaCO_3.Mg\ Co_3 + SiO_2 \longrightarrow 2CaCO_3 + Mg_2SiO_4 + 2CO_2$
A Forsterite marble
B Diopside marble
C Wollastonite marble
D Tremolite marble

21. Which of the following metarmorphic facies is in order from the lowest to the highest grade.
A Zeolite, blue schist, green schist, amphibolite;
B Blue schist, zeolite, green schist, amphibolite;
C Zeolite, green schist, blue schist, amphibolite;
D Green schist, amphibolite, blue schist, zeolite.

22. The occurrence of porphyroblasts in a metamorphic rock indicates:
A Preferred orientation of minerals due to stress
B Formation in two different environments
C Coarse grains surrounded by finer grains
D Ability of minerals to move within metamorphic environment

The diagram below (Figure 6) shows a folded strata affected by a fault. Study and answer questions 23, 24 and 25.

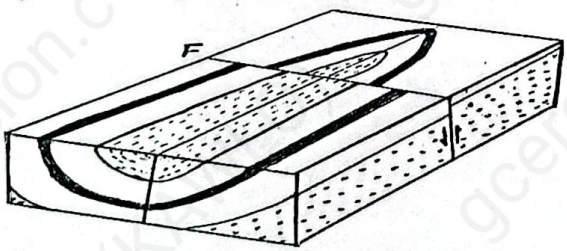

Figure 6

23. Identify the type of fold shown on the diagram:
A Synform
B Syncline
C Antiform
D Anticline

24. If the top of the page is considered the North, determine the plunge direction of the fold.
A North East
B East
C South
D South West

25. The width of the downthrown side of the fold is:
A Greater on the downthrown side
B Smaller on the downthrown side
C Same on the downthrown side
D Reduces toward the downthrown side

Use the information below to answer questions 26 and 27.
A sediment sample from a certain basin was analysed and found to have quartz, feldspar, biotite and muscovite in various proportions.

26. If this sediment sample is described as sub-mature, it is due to the relative abundance of:
A Quartz
B Feldspar
C Biotite
D Muscovite

27. The shape of most of the quartz grains in the sample can be described as:
A Euhedral
B Sub rounded
C Sub-angular
D Rounded

28. The sand commonly used in the building industry in Cameroon today is obtained from:
A Coastal areas
B Beach deposits
C Stream channels
D littoral beaches

Figure 7 below is a profile commonly attained by many streams. Use it to answer questions 29 and 30.

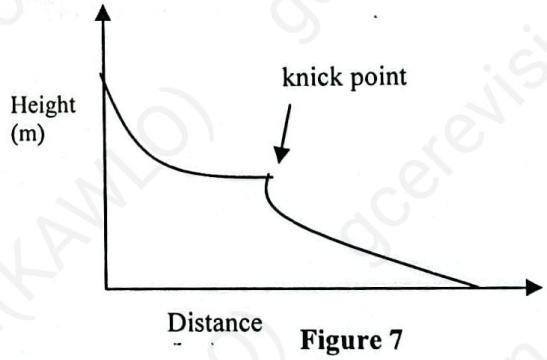

Figure 7

29. What phenomenon does the knick point in the diagram represent?
A Rejuvenation
B Isostatic adjustment
C Isostatic balance
D Backward erosion.

30. How many baselines can be seen on this profile?
A 1
B 2
C 3
D 4

Figure 8 below shows a type of structure. Study it and answer questions 31 and 32.

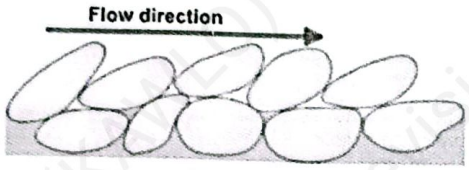

Figure 8

31. Identify the structure illustrated above:
    A Flow structure
    B Imbricate structure
    C Pillow and ball structures
    D Current structure

32. How was the structure in question 31 formed?
    A By sand moving with current flow in one direction
    B By pebbles moving when current flows in one direction
    C By the cooling of magma under water
    D By the pebbles moving when current flows in two directions.

Study the diagram below (Figure 9) showing the shell of a fossil and use it to answer questions 33 and 34.

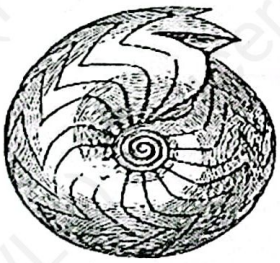

Figure 9

33. Describe the shell of the fossil above:
    A Involute, wide umbilicus, goniatitic sutures
    B Evolute, wide umbilicus, ammonitic sutures
    C Involute, tight umbilicus, goniatitic sutures
    D Evolute, tight umbilicus, ammonitic sutures

34. Give the age of a rock that contains the fossil in Figure 9:
    A Permo -Trias
    B Silurian
    C Permian
    D Carboniferous

35. A shale containing the fossils Trilobite and Graptolite was probably deposited in one of the environments below:
    A Shallow marine environment
    B Warm shallow marine environment
    C Deep marine environment
    D Aerobic environment

36. Under which fossil group does the fossil Trinucleus belong?
    A Trilobita
    B Trilobite
    C Cephalopoda
    D Arthropoda

Use the diagram below (Figure 10) which shows the relative ages of rock layers and answer questions 37 and 38.

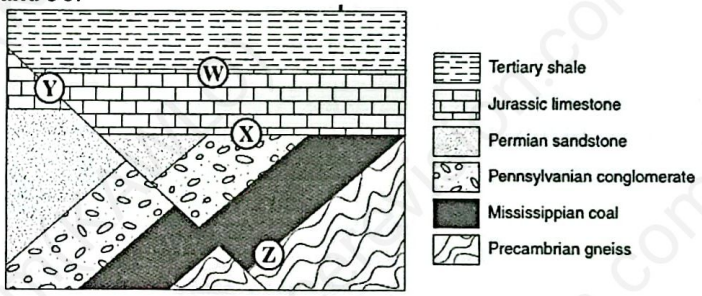

Figure 10

37. Which relative dating method can be used to date the events on the diagram?
    A Cross-cutting relationship
    B Superposition and way-up
    C Included fragments
    D Original horizontality

38. What is the relationship between the horizontal and the inclined beds?
    A Folding
    B Faulting
    C Erosion
    D Unconformity

39. Rocks in Cameroon show different ages. Which of the following rocks are highly deformed?
    A Granite, sandstone and basalt
    B Basalt and granite
    C Schist and granite
    D Gneiss, trachyte and schist

Study the map below (figure 11) and answer questions 40 and 41.

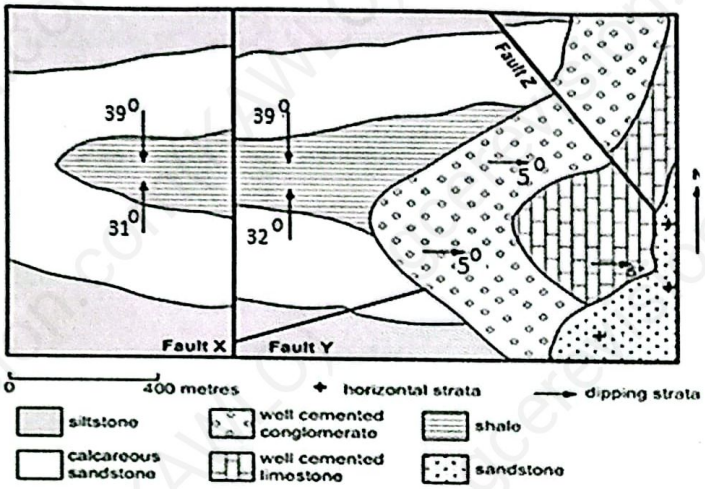

Figure 11

40. Identify the type of unconformity on the map:
   - A Angular unconformity
   - B Parallel unconformity
   - C Heterolithic unconformity
   - D Non-depositional unconformity

41. The oldest rock on the map is:
   - A Shale
   - B Sandstone
   - C Siltstone
   - D Limestone

The diagram below (Figure 12) shows a type of plate boundary. Study and answer questions 42, 43 and 44.

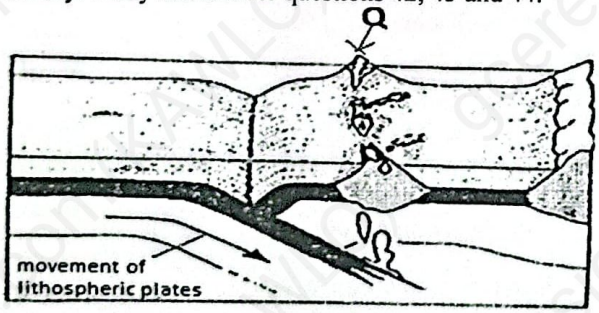

Figure 12

42. Name the type of plate boundary represented above:
   - A Neutral boundary
   - B Destructive boundary
   - C Conservative boundary
   - D Constructive boundary

43. The composition of the feature labelled Q is:
   - A Andesitic in composition
   - B Granitic in composition
   - C Basaltic in composition
   - D Rhyolitic in composition

44. Which of the following is a characteristic of the plate boundary above?
   - A High heat flow and hydrothermal metarmorphism
   - B Shallow, intermediate and deep focus earthquakes
   - C Faulting and symmetrical magnetic strips
   - D Formation of new crust and trenches

45. Two examples of ore minerals are:
   - A Fluorite and sphalerite
   - B Galena and chalcopyrite
   - C Iron pyrite and barytes
   - D Cassiterite and corundum

46. Why is gneiss commonly used as a road metal?
   - A It is impermeable and impervious
   - B It is easily quarried
   - C It is coarse grained and binds easily with tar
   - D It has a high compressive strength

The diagram (Figure 13) below represents the movement of underground water as shown in boreholes A, B and C. Use it to answer questions 47 and 48.

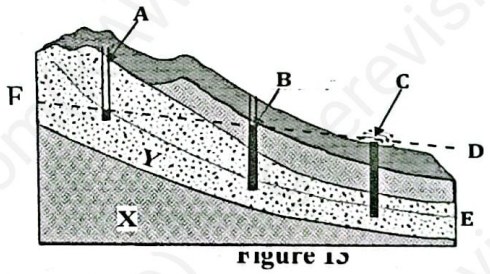

Figure 13

47. Identify C on the diagram above:
   - A Contact spring
   - B Flowing artesian Well
   - C Water table well
   - D Flowing deep well

48. What feature is represented by F – D on the diagram?
   - A Zone of saturation
   - B Zone of aeration
   - C Piezometric surface
   - D Water table

49. Basalts and granites usually have cracks in them as they cool. What types of springs are common in such rocks?
   - A Hot springs
   - B Fracture springs
   - C Contact springs
   - D Joint springs

50. Which of the following is a rock-breaking operation commonly used in quarries in Cameroon?
   - A Slumping
   - B Scraping
   - C Blasting
   - D Stripping

STOP

GO BACK AND CHECK YOUR WORK