CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD
General Certificate of Education Examination

0755 GEOLOGY 1

JUNE 2019 **ADVANCED LEVEL**

Centre Number	
Centre Name	
Candidate Identification No.	
Candidate Name	

Mobile phones are NOT allowed in the examination room.

MULTIPLE CHOICE QUESTION PAPER

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 "**0755 GEOLOGY 1- ADVANCED LEVEL**"
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 Name, Exam Session, Subject Code and Candidate Identification Number.** 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 which answer is appropriate. 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 the blank spaces.
12. **At the end of the examination, the invigilator shall collect the answer sheet first and then the question booklet. DO NOT ATTEMPT TO LEAVE THE EXAMIANTION HALL WITH IT.**

Turn Over

1. Which of these two gases are the most dominant in space?
   A Oxygen and Carbon dioxide
   B Hydrogen and Oxygen
   C Helium and Hydrogen
   D Oxygen and Helium

2. Why does planet Mars lack Plate Tectonic activities?
   A It has no recycling system
   B It has no mantle
   C It has no internal heat
   D It has no lithosphere

3. The geologic process that actually explains the splitting of landmasses is:
   A Continental drift
   B Plate Tectonics
   C Seafloor spreading
   D Rifting

4. A record of earthquake waves at a seismic station is called:
   A Seismogram
   B Seismograph
   C Seismometer
   D Seismology

5. What is the name given to the layer of the Earth at depth of between 100km and 350km where P and S wave velocities suddenly drop?
   A Lithosphere
   B Asthenosphere
   C Outer core
   D Mantle

6. Which property of a rock controls the velocity of P waves?
   A Composition
   B Texture
   C Density
   D competence

7. Why are there more frequent earthquakes in Japan than in Cameroon?
   A Japan is an Island Arc
   B Cameroon is not situated at a plate boundary
   C Japan is located in the Pacific ocean
   D Cameroon lacks fault zones

8. What is the composition of the upper mantle?
   A Granite
   B Dolerite
   C Peridotite
   D Basalt

Use the diagram below (figure 1) to answer questions 9 and10.

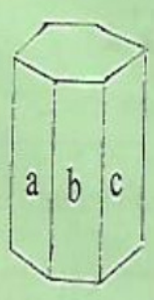

Figure 1

9. How many crystallographic axes does this model have?
   A Three
   B Four
   C Five
   D Seven

10. Name a mineral that crystallizes in this habit.
   A Beryl
   B Zircon
   C Idocrase
   D Staurolite

11. What is the most common form exhibited by the micas?
   A Fibrous
   B Tabular
   C Foliated
   D Accicular

12. Which of the minerals below is a common polymorph of TiO_2?
   A Tridymite
   B Rutile
   C Kyanite
   D Andalusite

Study the table below (Table 1) and answer questions 13 and 14.

Specimen	Description
W	Hardness 7, Fracture conchoidal,
X	Hardness 6, 2 cleavage planes
Y	Basal cleavage, black colour
Z	SG 3.3, lustre glassy, colour green

Table 1

13 Specimens W and Y which are both present in granite, can be identified respectivelyas:
   A Quartz and Orthoclase
   B Quartz and biotite
   C Orthoclase and Muscovite
   D Quartz and micas

14. Specimen X is a feldspar formed at high temperature, present in basalt. What is X?
A Labradorite
B Sodic plagioclase
C Bytowrite
D Anorthite

Study the following minerals:
Calcite,olivine,sillimanite, orthoclase, quartz and labradorite. Use the above information to answer questions 15 and 16.

15. Which of these minerals occur in both sedimentary and metamorphic rocks?
A Olivine, calcite and quartz
B Calcite, orthoclase and labradorite
C Calcite, orthoclase and quartz
D Sillimanite, orthoclase and quartz

16. Which of these minerals occur only in metamorphic rocks?
A Labradorite
B Olivine
C Orthoclase
D Sillimanite

Two igneous rocks E and F were collected during field work. The minerals of E could be identified with the naked eye and the rock was light in colour. The minerals of F could not be identified with the naked eye and were dark in colour.Use these statements to answer questions 17, 18 and 19

17. What is the environment of formation of F?
A Volcanic
B Hyporbyssal
C Plutonic
D Hotspots

18. What was the condition that led to the formation of E?
A Slow cooling
B Rapid cooling
C Slow cooling of acid lavas.
D Rapid cooling of acid lavas

19. The textures of the two rocks are respectively:
A Coarse grained and fine grained
B Fine grained and medium grained
C Coarse grained and medium grained
D Fine grained and coarse grained

20. What is the factor that controls the stability of minerals in a rock during weathering?
A Pressure
B Rock composition
C Pore fluids
D Temperature of formation

21. Why will shale be more susceptible to contact metamorphism than sandstone?
A Due to its grain size
B Due to its structures
C Due to its composition
D Due to its colour

The description of two metamorphic rocks G and H is as follows:
G is coarse grained and contains quartz and micas while; H is medium grained and contains chlorite and micas. Use this statement to answer questions 22 and 23.

22. G and H are respectively:
A Schist and phyllite
B Phyllite and slate
C Gneiss and schist
D Slate and schist

23. State the type of metamorphism that produced both rocks.
A Contact
B Dynamic
C Regional
D Dynamo thermal

Study the diagram below (figure2) and answer questions 24 and 25.

Figure 2

24. What type of bed is labelled X?
A Incompetent
B Limestones
C Sandstones
D Competent

25. A rock type that may represent rock Y is:
A Hornfels
B Mudstone
C Quartzite
D Granite

Study the diagram below (figure 3) and answer questions 26 and 27.

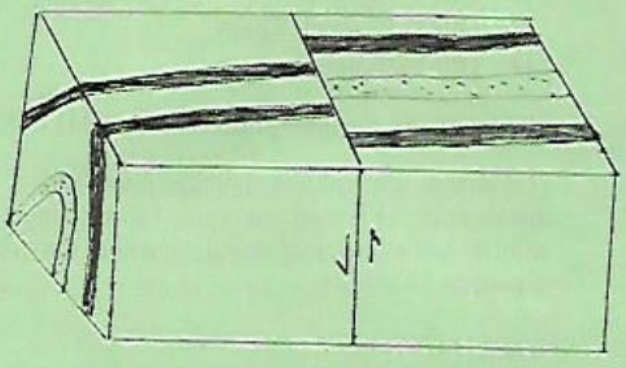

Figure 3

26. The anticline shown has been affected by:
   A Normal fault
   B Reverse fault
   C Thrust fault
   D Tear fault

27. The type of forces that have acted on the block are:
   A Tensional
   B Compressional
   C Distortional
   D Gravitational

28. The chemical reaction process that involves the addition of water into the composition of minerals is referred to as:
   A Hydrolysis
   B Solution
   C Hydration
   D Hydrothermal reaction

29. What causes the brown coloration in basalts?
   A Presence of ferromagnesian minerals
   B Oxidation of ferromagnesian minerals
   C Weathering of minerals
   D Chemical weathering of feldspars

30. The solvent and chemical action of water on rocks is called?
   A Saltation
   B Hydration
   C hydrolysis
   D Corrosion

31. A steep-sided tunnel on the roof of a cliff formed by marine erosion is:
   A A stack
   B An arch
   C A cave
   D A blow hole

Chemical analysis was done on two samples of sandstone J and K and the following results were obtained:
J=30% quartz, 45% rock fragment, 25% feldspar
K=30% quartz, 15% rock fragment, 55% feldspar
Use this information to answer questions 32 and 33.

32. Identify specimen K.
   A Lithic sandstone
   B Orthoquartzite
   C Arkose
   D Greywackes

33. Name the environment of formation of J.
   A Arid
   B Geosyncline
   C Shallow marine
   D Deep marine

34. Name the type of sedimentary rock commonly formed around reefs.
   A Limestone
   B Shale
   C Mudstone
   D Sandstone

35. Name an argillaceous rock which is composed of silts and is fissile.
   A Mudstone
   B Siltstone
   C Clay stone
   D Shale

36. State the environment where conglomerate will not likely be formed.
   A Fluvial
   B Littoral
   C Shallow marine
   D Desert

Study the diagram below (figure 4) and answer questions 37, 38 and 39.

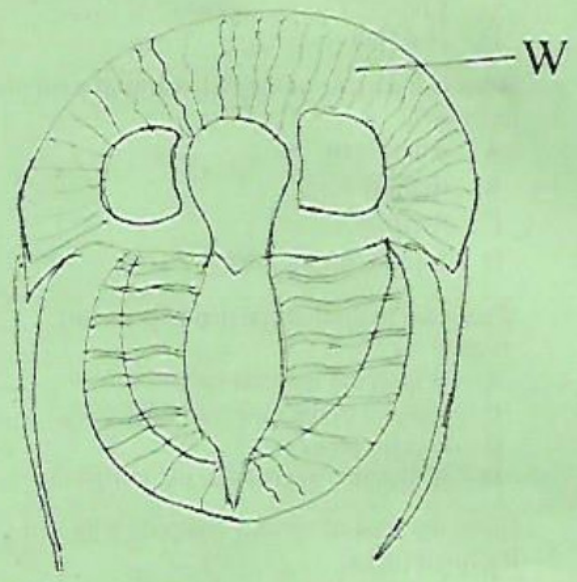

Figure 4

37. Identify the trilobite.
   A Trinucleus
   B Paradoxide
   C Illaneus
   D Dalmanites

38. Name the part labeled W.
   A Fringe
   B Fixed cheek
   C Head
   D Cephalic margin

39. State the mode of life of this trilobite.
   A Floater
   B Crawler
   C Burrower
   D Swimmer.

40. A dendroid coral having massive corallites is:
   A Phaceloid
   B Ceroid
   C Astracoid
   D Isastrea

41. How can you differentiate between a planospirally coiled gastropod shell and an ammonoid shell?
   A Gastropod shell has chambers, ammonoid shell does not.
   B Ammonoid shell lacks septa, gastropod shell has septa.
   C Gastropod shell does not have siphuncle and lacks septa, ammonoid shell hassiphuncle and is divided into chambers and has septa.
   D Ammonoid shell is not divided into chambers and lacks septa, gastropod shell is divided into chambers and has septa.

Study the rock sequence below (figure 5) and answer questions 42 and 43.

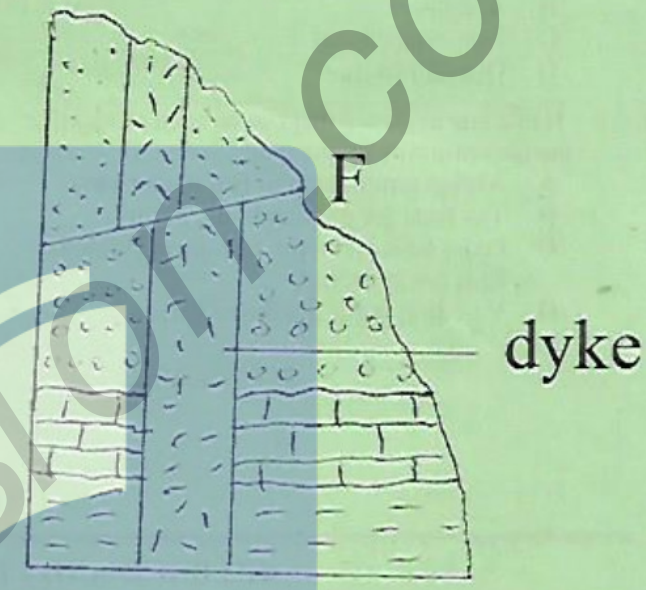

Figure 5

42. Which stratigraphic principle represents the relationship between the dyke and the surrounding rocks?
   A Superposition
   B Cross cutting
   C Original horizontality
   D Uniformitarianism

43. Name the type of fault shown.
   A Reverse
   B Thrust
   C Tear
   D Normal

44 Which event leads to the deposition of rocks with a fining upwards sequence?
   A Cyclic Sedimentation
   B Rhythmic Sedimentation
   C Transgression
   D Regression

Study the sketch map (figure 6) and answer questions 45 and 46.

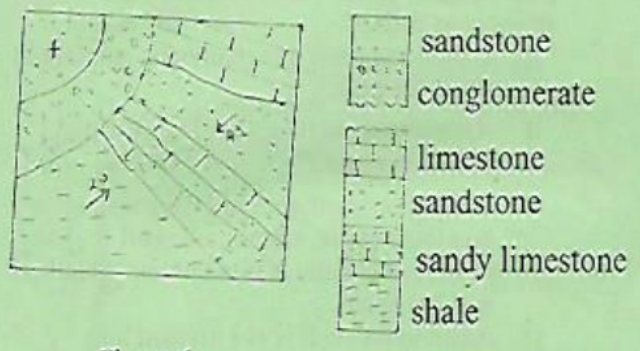

Figure 6

45. The type of unconformity shown is:
   A Parallel
   B Angular
   C Non depositional
   D Disconformity

46. Name one evidence that can be used to identify the unconformity on the map.
   A Abrupt termination of bed boundaries
   B The beds are dipping to the north
   C Older beds are at the bottom and younger beds are at the top.
   D Variation in the dip arrow values

47. An area in the crust where hot mantle plumes rise is called:
   A Volcanoes
   B Rift valley
   C Epicenter
   D Hot spot

48. What is the name of the failed arm of a tripple junction?
   A Aulacogen
   B Benioff zone
   C A stripe
   D A transcurrent fault

49. Where are hydrothermal deposits usually found?
   A Within the igneous rock
   B Nearest to the igneous body
   C Inside cracks
   D A distance away from the intrusion

50. Name the type of springs common with fractured rocks?
   A Joint springs
   B Dyke springs
   C Contact springs
   D Hot springs

STOP

GO BACK AND CHECK YOUR WORK