



FACULTY OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING
FIRST SEMESTER EXAMINATION (MARCH 2018)
2017/2018 ACADEMIC SESSION

HOD'S SIGNATURE

Instructions:

- 1) Answer FIVE Questions
- 2) Time Allowed: 3Hrs
- 3) **SEVERE PENALTIES APPLY FOR MISCONDUCT, CHEATING, POSSESSION OF UNAUTHORIZED MATERIALS DURING EXAMINATION**

Course Title: Engineering Geology I

Course Code: CVE 303



ELIZADE UNIVERSITY

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

B.Eng (Civil and Environmental Engrg.) Degree 1st Semester Examination 2017/2018 Session

CVE 303: Engineering Geology I

Units: 3

Time Allowed: 3Hrs

INSTRUCTION: Answer FIVE Questions

Question 1 (20 marks)

- a. During the field trip to Igbeti situated in Oyo State, a student picked three pieces of rock and presented them at a class lecture. Kindly furnish Clara with necessary information needed to identify the three pieces of rock. (10 marks)
- b. It is generally believed that metamorphic rock originated from igneous rock. If you are in support of this axiom, present the processes involved in the conversion of igneous rock to metamorphic rock. (6 marks)
- c. Describe the concept of stratigraphy associated with all sedimentary rock. (4 marks)

Question 2 (20 marks)

- a. Explain the formation of fold and fault in the field. (9 marks)
- b. Folds are associated with dip and strike. Differentiate between the dip and strike using diagrams where appropriate. (6 marks)
- c. Why is fault in rock strata or formation very vital to Civil Engineer? (5 marks)

Question 3 (20 marks)

- a. In brief, comment on the effect of weathering on rocks. Also, mention few primary agents of weathering. (8 marks)
- b. Enumerate factors affecting the rate of weathering of rocks. (6 marks)
- c. Explain the word glaciation and comment on the three groups of glaciers. (6 marks)

Question 4 (20 marks)

- a. Describe occurrence of groundwater with respect to water cycle concept. (9 marks)
- b. Compare and contrast the three geological units – aquifer, aquiclude and aquitard. (6 marks)
- c. List factors affecting porosity nature of soil found in the Elizade University. (5 marks)

Question 5 (20 marks)

- a. Why is stone favoured as good and sound construction material in your locality? (4 marks)
- b. Write short note on the following construction materials:
 - i. Road aggregate

- ii. Crushed stone or rock
- iii. Gravel
- iv. Armourstone (16 marks)

Question 6 (20 marks)

- a. Write short note on site investigation objective and its concept. (9 marks)
- b. What are the criteria used to determine or measure the extent of site investigation? (5 marks)
- c. Itemize tools needed in carrying out effective desk study aspect of site investigation. (6 marks)

Question 7 (20 marks)

- a. What is a map? (5 marks)
- b. State the purposes of engineering geomorphological map. (5 marks)
- c. Briefly outline important features of geology of Nigeria. (10 marks)