



**ELIZADE UNIVERSITY**  
*Pragmatic Innovation for Development*

FACULTY: ENGINEERING  
DEPARTMENT: CIVIL ENGINEERING  
FIRST SEMESTER EXAMINATION (MARCH 2017)  
2016/2017 ACADEMIC SESSION

Course Title: Civil Engineering Materials

Course Code: CVE 307

HOD'S SIGNATURE

**Instructions:**

- 1) Attempt any four Questions
- 2) Time Allowed: 3 hours
- 3) SEVERE PENALTIES APPLY FOR MISCONDUCT, CHEATING, POSSESSION OF UNAUTHORIZED MATERIALS DURING EXAM



# ELIZADE UNIVERSITY

*Pragmatic Innovation for Development*

ELIZADE UNIVERSITY, ILARA – MOKIN  
FACULTY OF ENGINEERING  
DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

Session: 2016/17

Semester: First

Course: Civil Engineering Materials

Course Code: CVE307

Units: 3

Instruction: Attempt Four Questions.

Time Allowed: 3 hrs

### Question 1

- a. Define the following terms:
- i. Concrete 1.5 Marks
  - ii. Aggregate 1.5 Marks
- b. Mention four mineral components in Portland cement. 4 Marks
- c. Briefly explain four types of cement. 8Marks

### Question 2

- a. A good quality Concrete is essentially a homogeneous mixture of cement, coarse and fine aggregates and water. Briefly explain the stages of Concrete production. 7 Marks
- b. Define the following:
- i. Workability 1 Mark
  - ii. Segregation: 1 Mark
  - iii. Bleeding 1 Mark
- c. State five factors that can affect workability of a Concrete. 5Marks

### Question 3

- a. What do you understand by the term structural steel? 3 Marks
- b. Mention the designated shapes of the structural steel and their uses. 8 Marks
- c. Welding is perhaps the most important process used in the fabrication and erection of structural steelwork. Discuss 4 Marks

### Question 4

- a. Define the following:
- i. Standing Timber 2 Marks

- ii. Rough Timber 2 Marks
- iii. Converted Timber 2 Marks
- b. Enumerate varying bases that are considered for the classification of timbers. 5 Marks
- c. State four uses of Timber products as applicable in Civil Engineering works. 4 Marks

### Question 5

- a. Define the term Bitumen. 2 Marks
- b. Briefly explain the following bituminous materials that are used in pavement construction.
  - i. Asphalt cement 3 Marks
  - ii. Cutback asphalt 3 Marks
  - iii. Emulsified asphalt 3 Marks
- c. Mention four tests that can performed on bitumen. 4 Marks