



FACULTY OF ENGINEERING

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

HOD'S SIGNATURE

Instructions:

- 1) ATTEMPT FOUR QUESTIONS
- 2) **Time Allowed:** 3 HOURS
- 3) **SEVERE PENALTIES APPLY FOR MISCONDUCT, CHEATING, POSSESSION OF UNAUTHORIZED MATERIALS DURING EXAMINATION**

Course Title: CIVIL ENGINEERING MATERIALS

Course Code: CVE 307



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

COURSE CODE: CVE 307 **SESSION/SEMESTER:** First Semester
COURSE TITLE: Civil Engineering Materials **LEVEL:** 300L
TIME ALLOWED: 3 HOURS **Units:** 3

ATTEMPT FOUR QUESTIONS

Question 1 (15 marks)

- a) List 10 types of cement and explain any two in details. (5 marks).
- b) Explain the following terms as related to Steel Technology:
 - i. Structural Steel
 - ii. Welding
 - iii. Corrosion
 - iv. Steel Galvanizing
 - v. Painting (8 marks)
- c) List four uses of timer products in civil engineering works. (2 marks)

Question 2 (15 marks)

- a) What is an aggregate and define it based on size, source/method of manufacture and density. (5 marks).
- b) Explain the flash point test on asphalt. (5 marks)
- c) List and explain any five preservatives used in the preservation and protection of Timber (5 marks).

Question 3 (15 marks)

- a) Explain in details the effect of water on concrete properties and list 5 water impurities. (5 marks).
- b) What are asbestos as a civil engineering material and list 4 uses of asbestos in civil engineering. (4 marks)
- c) With the aid of a diagram, explain the Slump test on concrete and differentiate between the four types of slump. (6 marks)

Question 4 (15 marks)

- a) Explain in details any 5 of the stages of concrete production (5 Marks).

- b) Explain the following materials:
- i. Asphalt Cement
 - ii. Cutback Asphalt
 - iii. Emulsified Asphalt (6 marks)
- c) List 3 properties of Glass that makes it suitable as a civil engineering material. (4 marks)

Question 5 (15 marks)

- a) With the aid of a table, list 4 differences between Bitumen, Asphalt and Tar. (4 marks)
- b) Explain in detailed the following:
- i. Kiln seasoning
 - ii. Boiling
 - iii. Chemical seasoning
 - iv. Electrical seasoning (8 marks)
- c) Explain the following terms:
- i. Standard Mixes
 - ii. Designed Mixes (3 Marks)

Question 6 (15 marks)

- a) Explain the following terms as related to Concrete:
- i. Setting Time
 - ii. Soundness
 - iii. Segregation
 - iv. Bleeding
 - v. Compaction (10 marks)
- b) Write extensively on the following defects of timber and how they can be prevented:
- i. Knot
 - ii. Shakes