



## TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

**UNIVERSITY EXAMINATION FOR:**

CERTIFICATE BUILDING AND CIVIL ENGINEERING

ECV1101 : CIVIL ENGINEERING MATERIALS I

END OF SEMESTER EXAMINATION

**SERIES:**AUGUST<sub>2019</sub>

**TIME:**2 HOURS

**DATE:**2019

### **Instructions to Candidates**

You should have the following for this examination

*Answer Booklet, examination pass and student ID*

This paper consists of five questions.

Attempt any THREE questions

**Do not write on the question paper.**

### QUESTION ONE.

- a) State **FOUR** different types of construction materials (4 marks)
- b) List **SIX** characteristics of materials that determine their suitability in construction works (6 marks)
- c) State **FIVE** factors that cause deterioration of construction materials. (5marks)
- d) Briefly explain the following terms as applied in Civil Engineering materials
  - Functionality
  - Aesthetic value (5 marks)

### QUESTION TWO

- a) State the **THREE** geological classifications of rocks (6 marks)
- b) List **SEVEN** characteristics of a good building stones (7 marks)
- c) State **SEVEN** common uses of building stones (7 marks)

### QUESTION THREE

- a) State any **FIVE** structural clay products (5 marks)
- b) List **FIVE** characteristic properties of good bricks (10marks)
- c) State **FIVE** uses of bricks in construction works (5 marks)

### QUESTION FOUR

- a) Briefly explain the following terms as applied in timber technology
  - Timber seasoning
  - Conversion (6 marks)
- b) Briefly contrast the **TWO** general classifications of timber (10 marks)
- c) In a neat sketch, draw the cellular structure of a tree (4 marks)

### QUESTION FIVE

- a) State **THREE** types of ferrous metals (6 marks)
- b) Define the term alloy (4 marks)
- c) Define the following terms as applied in metal technology
  - Hardening
  - Tempering
  - Annealing
  - Normalizing
  - Case hardening (10 marks)