



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN CIVIL ENGINEERING

DCE 2102: CONSTRUCTION MATERIALS I

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: MARCH 2025

TIME: 2 HOURS

DATE: 2025

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, and student ID

This paper consists of five questions.

Attempt any THREE questions.

Do not write on the question paper.

QUESTION ONE

- i) Briefly describe the geological classification of stones
- ii) Give **TWO** examples of stones in each class

(10marks)

Define the following terms as applied in building stones production:

1. Dressing
2. Quarrying

(4marks)

Explain **SIX** uses of stones as a construction material

(6marks)

QUESTION TWO

- a) State **THREE** differences between softwoods and hardwoods (6marks)
- b) State **FOUR** objectives of seasoning timber (4marks)
- c) With the aid of a sketch, briefly describe the natural seasoning (air seasoning) of timber

(6marks)

- d) Outline any **TWO** methods of applying preservatives to timber (4marks)

QUESTION THREE

- a) Briefly describe the operations in the manufacture of clay bricks (8marks)
- b) State **TWO** reasons for drying bricks before burning (2marks)
- c) Differentiate between ferrous and non-ferrous metals (2marks)

- d) Give **TWO** examples of each type in c) I (2marks)

- e) Outline the following metal forming processes

- Rolling
- Drawing
- Extruding

(6marks)

QUESTION FOUR

- a) State **FOUR** examples of alloying elements (4marks)

- b) State **FOUR** examples of Ferrous metals (4marks)

- c) List up **FOUR** constructional advantages of ferrous metals (8marks)

- d) State the metals that constitute the following

- Bronze
- Brass

(4marks)

QUESTION FIVE

- a) Briefly explain the classification of materials based on sustainability (6marks)

- b) Explain any **FOUR** characteristic properties of construction materials (8marks)

- c) Explain the following and give examples

1. Organic materials
2. Inorganic materials

(6marks)

