



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF ARCHITECTURE & BUILT ENVIRONMENT

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN ARCHITECTURE

DIPLOMA IN QUANTITY SURVEY

EAR 2108: CONSTRUCTION MATERIALS I

END OF SEMESTER EXAMINATION

YEAR ONE SEMESTER II

SERIES: MAY 2025

TIME: 2 HOURS

DATE: May 2025

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 question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

QUESTION ONE (30 MARKS)-COMPULSORY

- a) Differentiate between Endogenous and Exogenous trees highlighting their functionality in construction. Give ONE example each. (6 marks)
- b) State FIVE ways you can use metals in construction projects. (5 marks)
- c) Explain FOUR advantages of building with clay products. (4 marks)
- c) Timber conversion is the process of cutting and shaping logs into sizes suitable for various applications in construction. List 5 reasons for conversion of timber. (5 marks)
- d) Using sketches where necessary, describe the following methods of seasoning timber.
 - i) Water seasoning (5 marks)
 - ii) Kiln Seasoning (5 marks)

QUESTION TWO (15 MARKS)

- a) Mombasa County is planning to construct a recreational facility at Pirates Beach. List 5 ways stone products can be used in this project. (5 marks)
- b) Aluminum Composite Panels are a relatively new building material in the market. Describe FIVE main reasons why you would consider ACP in construction projects. (10 marks)

QUESTION THREE (15 MARKS)

- a) Your client would like to purchase timber for his project and has requested that you aid in the selection. Describe FIVE signs you would look for to identify deteriorated timber planks. (10 marks)
- b) Your client in Nyanza region would like to construct a 3-bedroom bungalow for his aging parents who want a rammed earth building. List FIVE advantages of using rammed earth for this project. (5 marks)

QUESTION FOUR (15 MARKS)

- a) Explain FOUR techniques of protecting metals against corrosion. (12 marks)
- b) Define “metal alloy” and list TWO examples used in construction. (3 marks)

QUESTION FIVE (15 MARKS)

You have been commissioned to design a sea front villa in Watamu Kenya, illustrate (with sketches) how you can use light-emitting concrete in your design proposal to enhance safety, aesthetics and sustainability.