



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF ARCHITECTURE & BUILT ENVIRONMENT
UNIVERSITY EXAMINATION FOR:
BACHELOR OF ARCHITECTURE
EAR 4204: CONSTRUCTION MATERIALS 11
END OF SEMESTER EXAMINATION
YEAR TWO SEMESTER ONE
SERIES: DECEMBER 2024
TIME: 2 HOURS
DATE: ~~Pick Date~~ DECEMBER 2024

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) Describe the following metal terminologies. (10 marks)
 - i. Ferrous metals (2 marks)
 - ii. Non ferrous metals (2 marks)
 - iii. Alloys (2 marks)
 - iv. Aluminium (4 marks)
- b) Mr. Ali a local entrepreneur is in the process of starting a timber mill and is conflicted on whether to apply air seasoning or kiln seasoning. Explain FIVE differences between the two methods of seasoning. (10 marks)

- c) Clay is one of the oldest construction materials and with improvement of technology has gained numerous uses in construction. Explain FIVE uses of clay products in construction. (10 marks)

QUESTION TWO (20 MARKS)

- a) Asphalt, bitumen and tar are referred to as bituminous materials, which are essentially hydrocarbon materials. Explain the differences between these bituminous materials (10 marks)
- b) Bituminous products are commonly used in the construction industry for specific purposes. Explain FIVE uses of bituminous products in construction. (10 marks)

QUESTION THREE (20 MARKS)

- a) Describe the following plastic terminologies. (4 marks)
- i. Thermosetting (2 marks)
 - ii. Thermoplastics (2 marks)
- b) Describe the classification of plastic on THREE key aspects. (6 marks)
- c) Due to rapid technological developments, the use of plastic in the construction industry has increased. Explain FIVE key applications of plastic in construction. (10 marks)

QUESTION FOUR (20 MARKS)

One of the key ingredients of any material specification is knowledge of the different types of a specific material and their properties. Explain the different types of glass common in the construction industry.

QUESTION FIVE (20 MARKS)

- a) Describe the following types of steel. (12 marks)
- i. Mild Steel (3 marks)
 - ii. High Carbon Steel (3 marks)
 - iii. High Tensile Steel (3 marks)
 - iv. Rolled Steel Sections (3 marks)
- b) Steel is one of the most used construction materials in Kenya and great care should be taken in its selection as a construction material. Explain FOUR characteristics of good steel. (8 marks)