



*(University of Choice)*

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

**MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS  
2019/2020 ACADEMIC YEAR**

**SECOND YEAR SECOND SEMESTER EXAMINATIONS**

**FOR THE DEGREE  
OF  
BACHELOR OF TECHNOLOGY EDUCATION  
IN  
BUILDING AND CIVIL ENGINEERING**

**COURSE CODE: TEB 224**

**COURSE TITLE: CONSTRUCTION MATERIALS AND  
EQUIPMENT**

**DATE: THURSDAY 5<sup>TH</sup> NOVEMBER 2020 TIME: 9.00 – 11.0 AM**

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**INSTRUCTIONS:**

1. Answer Question ONE and any other THREE Questions
2. Marks for each question are indicated in the parenthesis.
3. It is in the best interest of the student to write legibly
4. Examination duration is **2 Hours**

MMUST observes ZERO tolerance to examination cheating

*This Paper Consists of 2 Printed Pages. Please Turn Over.*

**Question I (25 marks)**

- (a) Discuss the THREE classes of rocks that make building stones. (6 marks)
- (b) Why is curing required in concrete? Explain FIVE methods commonly applied for curing concrete. (7 marks)
- (c) Differentiate between hardwoods and soft woods. What are the factors considered in the selection of structural timber? (10 marks)
- (d) List FOUR types of glass available in the market. (2 marks)

**Question 2 (15 marks)**

- (a) Explain the difference between thermoplastics and thermosetting polymers. (4 marks)
- (b) What is an alloy? Give examples of FOUR types of alloys commonly used in the construction industry. (7marks)
- (c) State FOUR functions of paints in the construction industry. (4 marks)

**Question 3 (15 marks)**

- (a) Explain the term “seasoning of timber”. State FOUR methods of seasoning timber. (10 marks)
- (b) With the aid of neat illustrations describe briefly the common defects occurring in timber. (5 marks)

**Question4 (15 marks)**

- (a) Explain the influence of the following factors on the strength of concrete:-
- (i) Water/cement ratio
  - (ii) Aggregate/cement ratio
  - (iii) Aggregate size
  - (iv) Fineness of aggregates
  - (v) Permeability of the concrete (10 marks)
- (b) Outline the use of admixtures in concrete. Give some examples of admixtures. (5 marks)

**Question5 (15 marks)**

- (a) The construction of civil engineering projects involves the use of heavy machines and plants. With the aid of neat sketches outline any FIVE of these machines citing their application. (10 marks)
- (b) State the safety precautions to be taken by workers on site in order to remain safe. (5 marks)