



*(University of Choice)*

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

**MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS  
2014/2015 ACADEMIC YEAR**

**FIRST YEAR SECOND SEMESTER EXAMINATIONS**

**FOR THE DIPLOMA  
IN  
CIVIL AND STRUCTURAL ENGINEERING**

**COURSE CODE: DCE 064**

**COURSE TITLE: ENGINEERING MATERIALS**

**DATE: FRIDAY 11<sup>TH</sup> DECEMBER 2015 TIME: 9.00 – 11.00 AM**

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**INSTRUCTIONS:**

1. Answer Question ONE and any other THREE Questions
2. Examination duration is **3 Hours**

MMUST observes ZERO tolerance to examination cheating

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

**Question One (25 marks)**

a) Briefly describe

- Stone dressing
- Quarrying
- Seasoning of stone
- Preservation of stone (8 marks)

b) Describe various agencies which bring about the deterioration of stones (5 marks)

c) Building stones have been widely used in our day to day activities, illustrate its important uses in civil engineering works (5 marks)

d) Outline the requirements of a good quarry site (5 marks)

e) Name at least tests that are performed to determine the suitability of stone for its use in engineering works (2 marks)

**Question Two (15 marks)**

Define the following terms

- a) Stress
- b) Strain
- c) Ductility
- d) Brittle (4 marks)

With the aid of a diagram, explain the stress strain diagram (3 marks)

Engineering materials are selected depending on their intended purpose, describe physical and mechanical properties of engineering materials which make them distinct (8 marks)

**Question Three (15 marks)**

a) Outline the similarities between Asphalt and Tar (5 marks)

b) State the properties and uses of Glass (3 marks)

Discuss the main components of oil paints and their respective functions. (7 Marks)

**Question Four (15 marks)**

a) Outline any FIVE defects of bricks (5 Marks)

b) State four qualities of a good roofing tile (4 marks)

C) Describe diseases of timber and its prevention methods (6 marks)

**Question Five(15 marks)**

a) Describe Asbestos as an engineering material stating its properties and uses (8 marks)

b) State properties and uses of Aluminium (3 marks)

c) Why would one select wood over other engineering materials? (4 Marks)