



TECHNICAL UNIVERSITY OF MOMBASA
**Faculty of Engineering &
Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

DIPLOMA IN ARCHITECTURE

ECV 2101: MATERIAL SCIENCE I

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2014

TIME ALLOWED: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions. Answer any **THREE** questions of the **FIVE** questions

All questions carry equal marks

Maximum marks for each part of a question are as shown

Use neat, large and well labeled diagrams where required.
This paper consists of **TWO** printed pages

Question One

- a) Describe the principle classification of building stones. **(6 marks)**
- b) Describe the formation of the above classification of stones. **(9 marks)**
- c) State the properties of stones for construction purposes. **(5 marks)**

Question Two

- a) Describe the main classification of timber. **(6 marks)**
- b) With the aid of a sketch, describe the growth features of a tree. **(9 marks)**
- c) State common types of timber defects **(5 marks)**

Question Three

- a) Describe the manufacture process of ordinary clay bricks. **(9 marks)**
- b) State the common tests carried out on clay bricks. **(5 marks)**
- c) Describe the following classification of bricks. **(6 marks)**
 - (i) Common bricks
 - (ii) Facing bricks
 - (iii) Engineering bricks

Question Four

- a) Describe the main types of metals used for structural works in construction processes. **(8 marks)**
- b) Describe the properties of metals suitable for construction purposes. **(4 marks)**
- c) Explain the various types of treatment to steel for different structural and non-structural requirement. **(8 marks)**

Question Five

- a) Describe the FIVE main components of a paint formulation. **(10 marks)**
- b) Describe the painting scheme. **(6 marks)**
- c) State the characteristics of a good paint formulation. **(4 mark)**