



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

Faculty of Engineering & Technology

DEPARTMENT OF CIVIL AND BUILDING ENGINEERING

DIPLOMA IN BUILDING & CIVIL ENGINEERING
DIPLOMA IN CIVIL CONSTRUCTION
CERTIFICATE IN ARCHITECTURE
(DBC, DCC, CA 09A)

CIVIL ENGINEERING MATERIALS I

END OF SEMESTER EXAMINATIONS

APRIL/MAY 2010 SERIES

TIME: 2 HOURS

Instructions to Candidates

You should have the following for the examinations:

Answer Booklet

This paper consists of **FIVE** Questions.

Question **ONE** is **COMPULSORY**.

Answer **ANY** other **TWO** Questions.

Maximum marks for each part of a question are as shown.

Question ONE

- (a). Briefly describe the following methods of timber conversion.
- (i). Tangential sourcing **(2 Marks)**
 - (ii). Rift sawing **(2 Marks)**
- (b). Describe “Artificial Seasoning” and give **THREE** advantages of using this method **(6 Marks)**
- (c). With the aid of a sketch, describe the permeability test in stones. **(20 Marks)**

Question TWO

- (a). Briefly describe **THREE** methods of protecting steel from elements of weather. **(6 Marks)**
- (b). Describe the manufacture of TWO glazed wall tiles from clay. **(14 marks)**
- (c). Briefly describe the following methods of forming metals:
- (i). Extrusion
 - (ii). Hot rolling
 - (iii). Centrifugal casting. **(6 marks)**
- (d). With the aid of sketches describe **THREE** uses of steel in building. **(6 marks)**

Question FOUR

- (a). Briefly describe the manufacture of plywood. **(6 marks)**
- (b). Outline **FIVE** properties of wrought iron. **(5 marks)**
- (c). Briefly explain the following heat treatment processes in metals:
- (i). Annealing
 - (ii). Normalizing
 - (iii). Tempering
 - (iv). Hardening **(9 marks)**

Question FIVE

- (a). With the aid of a sketch, describe the procedure of testing the drying shrinkage in bricks.
- (b). Outline **TEN** properties of Cast Iron. **(10 marks)**