



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)
Faculty of Engineering and Technology

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING
CERTIFICATE IN CONSTRUCTION TECHNICIAN PART I

EBC 1112: CONSTRUCTION MATERIALS II

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2011

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions

Answer question **ONE (COMPULSORY)** from **SECTION A** and any other **TWO** questions from **SECTION B**

Maximum marks for each part of a question are clearly shown

This paper consists of **THREE** printed pages

SECTION A (COMPULSORY)

Question 1(30 marks)

- a) Define the following terms of adhesive.
- (i) Shelf life
 - (ii) Pot life
 - (iii) Closed assembly time
- (6 marks)
- b) Describe the following types of paints.
- (i) Oil paints
 - (ii) Emulsion paints
 - (iii) Water paints
- (9 marks)
- c) Describe the following properties of glass.
- (i) Thermal movement
 - (ii) Strength
- (4 marks)
- d) Briefly describe gypsum plaster
- (6 marks)
- e) Describe vulcanization process of manufacturing rubber
- (5 marks)

SECTION B (Answer any TWO questions from this section)

Question 2 (20 marks)

- a) Explain the following manufacturing process of glass.
- (i) Annealing
 - (ii) Rolling
 - (iii) Blowing
 - (iv) Pressing
- (6 marks)
- b) Describe the following types of glasses:
- (i) Wired glass
 - (ii) Foamed glass
 - (iii) Rough cast glass
- (9 marks)
- c) Explain the process involved in repainting woodwork
- (5 marks)

Question 3 (20 marks)

- a) Describe the major constituents of paints
- (13 marks)
- b) State **FOUR** functions of paint
- (2 marks)
- c) (i) List the main ingredients used in the manufacture of glass
(ii) State **FOUR** major uses of glass in construction industry
- (5 marks)

Question 4 (20 marks)

- a) Explain **THREE** major uses of plastics in construction industry (9 marks)
- b) Explain the following ingredients which are added to plastics
- (i) Solvents
 - (ii) Plasticizers
 - (iii) Fillers
 - (iv) Hardeners
- (8 marks)
- c) List **SIX** defects of paints (3 marks)

Question 5 (20 marks)

- a) Describe the following types of lime
- (i) Fat lime
 - (ii) Quick lime
 - (iii) Hydraulic lime
- (9 marks)
- b) Outline the following types of bituminous materials
- (i) Coal tar
 - (ii) Pitch
- (2 marks)
- c) Describe **FOUR** properties of bituminous materials (6 marks)
- d) Explain **THREE** setting ways of adhesives (3 marks)