



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

HIGHER DIPLOMA IN CONSTRUCTION

EBC 3222: CONSTRUCTION TECHNOLOGY & SERVICES III

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*
- *Calculator*

- *Drawing Instruments*

This paper consists of **FIVE** questions. Answer any **THREE** questions
Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

Question One (20 Marks)

- a) Describe the following types of doors
- i) External doors
 - ii) Internal doors
 - iii) Purpose made doors
- (6 marks)**
- b) With the aid of a sketch describe “double glazing”
- (6 marks)**
- c) With the aid of sketches, describe the following:
- i) A double leaf straight sliding door
 - ii) An end-folding sliding door with four leaves.
- (8 marks)**

Question Two (20 marks)

- a) The following information relates to a proposed straight flight stair to connect the ground floor to the first floor of a building:-
- Finished floor level to finished floor level height = 2.7m
 - Recommended maximum size of riser = 190mm
 - Recommended size of tread = 225mm
 - The sum of twice the riser plus the tread shall be not less than 550mm and not more than 700mm
- Determine the total going of flight of stairs.
- (8 marks)**
- b) Define the following terms as applied to painting.
- i) Priming paints
 - ii) Undercoating paint
 - iii) Finishing paint
- (6 marks)**
- c) Briefly explain the advantages of sliding windows over casement windows.
- (6 marks)**

Question Three (20 marks)

- a) (i) Explain any **TWO** methods of upgrading an existing ordinary door to a fire check door.
(ii) Briefly explain the maintenance of fire resisting doors.
- (10 marks)**
- b) (i) Explain the **THREE** criteria of failure used in the performance tests of fire resisting door sets.
(ii) Explain the function of intumescent strips in fire resisting doors.
- (10 marks)**

Question Four (20 marks)

- a) Define the following terms as applied to stairs:
- i) Newel
 - ii) Waist
 - iii) Step

- iv) Stair-well
- v) Nosing
- vi) Pitch line

(6 marks)

- b) With the aid of sketches, illustrate formwork construction to a reinforced concrete in-situ stair.
(6 marks)
- c) With the aid of sketches, illustrate a method of supporting 'precast concrete cranked slab stair' at floor and landing levels.
(8 marks)

Question Five (20 marks)

- a) (i) State any **FOUR** reasons for laying a screed to a concrete base.
(ii) Explain the **THREE** main advantages of employing dry lining techniques to wall finishing.
(10 marks)
- b) (i) Briefly explain any **THREE** reasons for the increasing use of suspended ceilings in most commercial buildings.
(ii) With the aid of a sketch, illustrate the construction of a jointed suspended ceiling.
(10 marks)