



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

Faculty of Engineering and Technology

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

HIGHER DIPLOMA IN BUILDING & CIVIL ENGINEERING

EBC 3133: CONSTRUCTION TECHNOLOGY & SERVICES III

END OF SEMESTER EXAMINATION

SERIES: AUGUST/SEPTEMBER 2011

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 in **TWO** sections **A & B**

Answer question **ONE (COMPULSORY)** and any other **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

SECTION A (COMPULSORY)

Question 1

a) Define the following terms:

- (i) Door
 - (ii) Doorway
 - (iii) Doorframe
 - (iv) Door furniture
- (6 marks)

b) (i) State the **THREE** different methods of classifying doors

(ii) State any **THREE** reasons for incorporating a sliding/folding door in a building design
(6 marks)

c) With the aid sketches describe the following:

- (i) A double leaf straight sliding door
 - (ii) An end folding sliding door with four leaves
- (6 marks)

d) State any **SIX** factors to be considered when choosing floor finishes
(6 marks)

e) Briefly describe the application of the following types of finishes:

- (i) Plastering
 - (ii) Terrazzo
- (6 marks)

SECTION B (Answer any TWO questions from this section)

Question 2

a) (i) State any **FOUR** building code requirements for stairs

(ii) A straight flight stair connects the ground floor to the first floor of a building with a total rise of 2.698m. Using a recommended tread of 225mm and the relationship **2Riser + Tread = 605**, determine:

- The size of the riser
 - The number of the treads
- (6 marks)

b) (i) Define the following terms as applied to painting

- Priming paints
- Undercoating paints
- Finishing paints

(ii) Briefly explain the advantages of sliding windows over casement windows
(6 marks)

- c) With the aid of sketches, describe the construction of a Vertically Sliding Sash Window with a Solid Frame. (8 marks)

Question 3

- a) (i) Briefly define the following terms:

- Fire door
- Smoke control door
- Fire check door
- Fire resisting door

- (ii) Explain the functions of fire resisting doors. (9 marks)

- b) (i) Describe the **THREE** criteria of failure used in the performance tests of fire resisting door Sets

- (ii) State the following fire resistance; **FR 30/20**

- (iii) Explain the function of intumescent strips in fire resisting doors (11marks)

Question 4

- a) (i) Define the term stair

- (ii) State the **TWO** main functions of stairs

- (iii) Explain the **THREE** functional requirements of stairs (9 marks)

- b) With the aid of sketches illustrate the methods of supporting the following types of precast concrete stairs at floor/landing level

- (i) Precast concrete straight flight stairs

- (ii) Precise concrete cranked slab stairs (8 marks)

- c) State any **THREE** advantages of precast concrete stairs over insitu concrete stairs (3 marks)

Question 5

- a) (i) Briefly describe the sizing and gradients of vehicle ramps

- (ii) Briefly describe the dry lining technique of finishing walls

- (iii) State the **THREE** main advantages of employing dry lining techniques to wall finishing (9 marks)

- b) (i) Describe any **TWO** types of boards suitable for dry lining of walls

- (ii) Briefly describe the fixing technique of dry linings (11 marks)