THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

Faculty of Engineering and Technology

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

HIGHER DIPLOMA IN BUIDLING & 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)