



TECHNICAL UNIVERSITY OF MOMBASA
**Faculty of Engineering &
Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING
HIGHER DIPLOMA IN BUILDING & CIVIL ENGINEERING (HDBC 12J)

EBC 3205: CONSTRUCTION TECHNOLOGY & SERVICES III

END OF SEMESTER EXAMINATION

SERIES: APRIL 2013

TIME ALLOWED: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*
- *Scientific 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

- a) (i) Explain the **THREE** main functional requirements for stairs in a building. **(6 marks)**
- (ii) With the aid of a sketch, illustrate the construction of an in-situ reinforced concrete stair. **(6 marks)**
- b) (i) Differentiate between plastering and rendering
- (ii) Explain the following painting techniques:
- Priming
 - Undercoating
 - Finishing coat
 - Knotting
- (8 marks)**

Question Two

- a) (i) State the **THREE** methods of classifying doors.
- (ii) State any **THREE** reasons for incorporating a slidding/folding door in a building design. **(6 marks)**
- b) With the aid of sketches, describe the following:
- (i) A double leaf straight sliding door
- (ii) End folding-sliding doors **(8 marks)**
- c) With the aid of sketches, illustrate the construction of a timber vertically sliding sash window with a solid frame. **(6 marks)**

Question Three

- a) (i) State **TWO** functions of a fire door.
- (ii) Differentiate between fire check and smoke-stop doors. **(6 marks)**
- b) Briefly explain the advantages of sliding windows over casement windows. **(6 marks)**
- c) The following information relates to a proposed straight flight stair to connect the ground floor to the first floor of a building with a total rise of 2.7m. using a recommended maximum risers of 190mm and tread of 225mm and the relationship that the sum of twice the riser plus the going shall be not less than 550mm, and not more than 700mm, determine the total going of the flight. **(8 marks)**

Question Four

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

Question Five

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