



# MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)  
University Examinations for 2014/2015

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST SEMESTER EXAMINATION FOR DIPOLMA IN BUILDING CONSTRUCTION  
TECHNOLOGY

**2705/303: BUILDING CONSTRUCTION III, DRAWING III AND SERVICES**

**DATE:**

**TIME: 3 HRS**

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***Instructions***

- This paper consists of Eight questions in Three sections A,B AND C
- Answer Five questions choosing two questions from section A, Two questions from Section B and One question from Section C
- Maximum marks for each part of a question are as shown

**SECTION A: BUILDING CONSTRUCTION III**

1. (a) State and explain Four requirements of a good stair. (12 marks)
- (b) Briefly explain the following terms pertaining to stairs
- (i) Flight
  - (ii) Landing
  - (iii) Rise
  - (iv) Tread
  - (v) Nosing
  - (vi) Newel Post
  - (vii) Baluster (8 marks)
- (c) Name and sketch Two high yield reinforcement bars. (5 marks)

2. (a) Make neat sketches (sectional) of the following types of stairs:-
- (i) Quarter turn stair
  - (ii) Half turn stair
  - (iii) Bifurcated stair
  - (iv) Winder turn stair. (12 marks)
- (b) Explain Three methods of Point removal from surfaces. (6 marks)
- (c) With aid of neat sketched differentiate between each of the following fixings.
- (i) Parliament hinge and missing butt hinge
  - (ii) Countersunk screws and coach bolt screw. (7 marks)
3. (a) Make a labeled isometric sketch of a beam and slab formwork. (10 marks)
- (b) Differentiate between a door frame and a door lining. (5 marks)
- (c) Sketch and label a section through a louvre timber casement window with a middle rail. (10 marks)

### **SECTION C: BUILDING SERVICES: ATTEMPT ONE QUESTION**

7. (a) List ten general workshop rules and regulations in the workshop. (10 marks)
- (b) Accidents are very common in most workshops. Outline any five causes of accidents in a workshop. (5 marks)
- (c) What are the steps to be taken in case of an accident on the construction site. (5 marks)
8. (a) Define the following terms in relation to ventilations
- (i) Habitable room
  - (ii) Bathroom
  - (iii) Sanitary accommodation
  - (iv) Ventilation opening
  - (v) Whole building ventilation
  - (vi) Background ventilation
  - (vii) Rapid or purge ventilation. (7 marks)
- (b) (i) Name any four tools that can be used while installing any wiring in the building. (4 marks)
- (ii) List down 6 aiming accessories that may be required before the wiring installation process is completed. (6 marks)
- (iii) State two ways of overload protection to the appliances. (3 marks)