



# MACHAKOS UNIVERSITY COLLEGE

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

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

FIRST SEMESTER EXAMINATION FOR DIPOLMA IN CIVIL ENGINEERING

2707/303: BULDING CONSTRUCTION III AND TRANSPORT ENGINEERING II

DATE: 18/3/2015

TIME: 2:00 – 4:00 PM

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## *Instructions*

- *Answer two questions from Section A, two from section B and any One question from any of the two sections*

## SECTION A: BULDING CONSTRUCTION III

1. (a) State and explain Four requirements of a good stair. (8 marks)
  - (b) Briefly explain the following terms pertaining to stairs
    - (i) Flight
    - (ii) Landings
    - (iii) Rise
    - (iv) Thread
    - (v) Nosing
    - (vi) Newel post
    - (vii) Baluster (8 marks)
  - (c) Name and sketch Two high yield reinforcements bars. (4 marks)
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2. (a) Make neat sketched (sectional) of the following types of stairs

- (i) Quarter turn stair
  - (ii) Half tune stair
  - (iii) Bifur cated stair
  - (iv) Wider turn stair (8 marks)
- (b) Explain three methods of pint removal from surfaces. (6 marks)
- (c) With aid of neat sketched differentiate between each of the following fixings.
- (i) Parliament hinge and rising butt hinge
  - (ii) Count sunk screws and coach bolt screw. (6 marks)
3. (a) Make a labeled isometric sketch of beam and slab formwork. (5 marks)
- (b) Differentiate between a door frame and a door lining. (5 marks)
- (c) Sketch and label a section through a louver timber casement window with a middle rail. (10 marks)
4. (a) List any Four functions of Internal plaster. (4 marks)
- (b) Explain the term “fire load” (4 marks)
- (c) With aid of a sketch describe a paneled door. (6 marks)
- (d) List any four door furniture required for timber doors. (4 marks)

## **SECTOPM B: TRANSPORT ENGINEERING II**

5. (a) Stabilization is one of the activities to be considered in road construction. Outline five reasons of carrying out stabilization before commencing the project. (8 marks)
- (b) Describe the following methods of stabilization
- (i) Lime cement soil stabilization
  - (ii) Lime pozzalana stabilization
  - (iii) Soil cement stabilization
  - (iv) Soil bitumen stabilization. (8 marks)
- (c) Briefly outline the procedure of constructing an earth road. (4 marks)

6. Asphat, Tar and Bitumen are the most common materials in road construction
- (a) Briefly describe the properties of each. (12 marks)
- (b) What are the economic importance of
- (i) Asphat (4 marks)
- (ii) Bitumen (4 marks)
7. (a) Define the term “dredging” (2 marks)
- (b) Outline five reasons of carrying out dredging activity at a given place. (4 marks)
- (c) Define the term reclamation. (2 marks)
- (d) Describe four factors to be considered before carrying out dredging at any site. (8 marks)
- (e) Describe the following terms as applies to dredging
- (i) Core
- (ii) Amouring
- (iii) Sand
- (iv) Filters (4 marks)