



# Machakos University College

(A Constituent College of Kenyatta University)

University Examinations 2013/2014

SCHOOL OF ENGINEERING

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

**Diploma in Civil Engineering**  
**Year 3**

General Building Construction III

Transport Engineering II

Date:

Time:

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## *Instructions to Candidates*

Attempt at least 3 questions from this Section A and Two Question in Section B

### **SECTION A: BUILDING TECHNOLOGY**

1. (a) Define a stair and give its functions. (4 marks)
- (b) Explain the following terms used in a stair
  - (i) Stair case
  - (ii) Rise
  - (iii) Riser
  - (iv) Tread/going (8 marks)
- (c) In a building used for domestic purpose the floor height is 2000mm. The rise is 180mm, and horizontal is 1700 mm. Design for a maximum number of treads risers and the size of riser and trades (8 marks)
2. (a) Define shoring (3 marks)
- (b) Explain 3 methods of shoring. (9 marks)
- (c) Dead shore does which role in building. (8 marks)
3. (a) Explain why demolition are done . (8 marks)
- (b) Describe four methods of demolition. (12 marks)

4. (a) Define formwork (4 marks)
- (b) Make a neat sketch for beam and slab formwork. (16 marks)

**SECTION B: TRANSPORT ENGINEERING II**

5. (a) Outline 8 reasons of soil stabilization in road construction. (8 marks)
- (b) Name five types of stabilization techniques as is applied in road. (5 marks)
- (c) Outline seven factors that determine the selection of a base and surface course in pavement Construction. (7 marks)
6. (a) Outline the procedure of construction of a pavement of earth roads. (8 marks)
- (b) Name four types of macadam roads. (4 marks)
- (c) Sketch and level a cross – section of trench type macadam road. (8 marks)
7. (a) Asphalt, bitumen and tar are the major materials in highway construction . Briefly explain any four properties of each.
- (i) Asphalt (4 marks)
- (ii) Bitumen (4 marks)
- (iii) Tar (4 marks)
- (b) Outline the uses of
- (i) Asphalt (4 marks)
- (ii) Bitumen (4 marks)