



# MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)  
University Examinations for 2013/2014

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

**Examination for certificate .....**

**General Building Construction III & Transport Engineering II**

**Date:**

**Time:**

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*Instructions*

*Answer any THREE questions from section A, one question from section B and one section C*

*All questions carry equal marks.*

1. a) Define cladding. (2 marks)  
b) State and explain advantages of cladding over traditional (10 marks)  
c) Explain functional requirements of cladding. (8 marks)
2. a) List the requirements of cladding joints. (6 marks)  
b) Make a neat sketch of timber cladding. (8 marks)  
c) Explain cladding to framed structures of concrete cladding. (4 marks)
3. a) Highlight on how infill panel works. (6 marks)  
b) Make a neat sketch of movement joints and horizontal joints. (8 marks)  
c) Differentiate between vertical joints and horizontal joints. (6 marks)
4. a) Explain how moisture can be excluded from a building. (6 marks)  
b) Describe how A.P.C works and materials used (4 marks)  
c) Explain the work of sealant. (6 marks)  
d) Make a neat sketch of curtain walking infill panel details. (10 marks)

**SECTION B**

5. a) State six items that should be found on the title and information panel of a drawing. (10 marks)

b) i) With the aid of a sketch show the position of the following reference

B25

2A2

Ba2:52

A14

(4 marks)

ii) To a scale of 1:20, Detail the following elements

6. a) Fig 1 shows the plan of a suspended joned concrete slab

To a scale of 1:100 draw the plan including

Grid reference

Beam and beam notation

Slab and slab notation

(10 marks)

Retain the following

.....large hates in a slab

..... Group of hates ..... a boundary of a form or less.

(10 marks)

**SECTION C**

7. a) State the purpose of an air filter. (4 marks)

b) Describe the main types of filters. (6 marks)

8. a) Make a neat sketch of vee type. (10 marks)

b) State the principles of ventilation. (2 marks)

9. a) Explain the systems of ventilation. (10 marks)

b) Describe mechanical ventilation. (8 marks)



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*Instructions*

*This paper consists of 8 questions. Attempt at least 3 questions from section A and Two question in section B.*

*All questions carry equal marks.*

5. a) Explain the meaning of street furniture. (2 marks)
- b) Describe the following terms as applies to traffic signals
- i. Regulatory signals
  - ii. Warning signs
  - iii. Informatory or guide signs (6 marks)
- c) Outline three factors that determine the installation of traffic signals. (4 marks)
- d) Describe the operating principle of the following signal systems as it is applied to traffic signs.
- i. Simultaneous systems
  - ii. Alternative systems
  - iii. Simple progressive system
  - iv. Flexible progressive system (8 marks)
6. a) Explain the meaning of the following terms as applies to railway transport
- i. Broad gauge

- ii. Ruter gauge
  - iii. Narrow gauge
  - iv. Loading gauge (4 marks)
- b) With the aid of sketches, describe the following types of rail section
- i. Double headed rail
  - ii. Bull headed rail
  - iii. Flat footed rail (6 marks)
- c) i) Define the term " sleeper" (2 marks)
- ii) List four functions of sleepers (2 marks)
  - iii) What are the functional requirements of a good sleeper (4 marks)
  - iv) State four functions of bacast as a component of a railway line (2 marks)
7. a) Define the following terms
- i. Dredging
  - ii. Reclamation (4 marks)
- b) Outline four reasons for carrying out dredging in a particular area. (4 marks)
- c) Briefly describe two types of equipments used in dredging (8 marks)
- d) With the aid of the diagram explain the following tems as applies to sea wall
- i. Toe
  - ii. Core
  - iii. Armouring
  - iv. Filters. (4 marks)