



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations 2015/2016

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST SEMESTER EXAMINATION FOR DIPLOMA IN BUILDING TECHNOLOGY

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

Date: 8/4/2016

Time: 8:30 – 11:30 PM

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

Answer **Two** questions from this section

SECTION A

Answer any four questions from this section

1. a) Define the term stair (2 marks)
- b) Briefly explain the following terms as applied in stairs, (9 marks)
 - i. Flight
 - ii. Hand-rail
 - iii. Balusters
 - iv. Riser
 - v. Tread
 - vi. Nosing
- c) State two functions of a stair (4 marks)

2. a) with aid neat sketches show two methods of fixing a baluster on the step (8 marks)
- b) Make neat sketches to show any two typical sections of hand rails (7marks)
3. a) Outline three objectives fire registration (6 marks)
- b) Briefly the following terms as related to fire
- i. Fire prevention
 - ii. Fire protection
 - iii. Fire load
 - iv. Fire intensity (8 marks)
- c) Define the term balustrade (1 mark)

SECTION B: DRAWING III: ANSWER TWO QUESTIONS FROM THIS SECTION

A proposed bungalow is to be constructed on a site and laid out as shown in drawing No. 01

The specifications for the bungalow are as follows:

Foundation: R.C strip footing 600mm wide X 200mm deep

300mm thick hardcore layer

150mm thick solid concrete ground floor

200mm thick walls

150mm thick reinforced concrete slab

Howe timber trusses

Galvanized corrugated iron sheets(GCI) roof covering

Steel framed casement windows

Internal doors: Solid timber panel doors with fanlight

External doors: Steel doors with fanlight

4. To a scale of 1:100 draw
- a) Elevation 01
 - b) Elevation 02 (15 marks)
5. To a scale of 1:100 draw section X-X to show all details from the foundation to roof

- (15 marks)
6. To a scale of 1:50 draw a structural drawing showing the plan of reinforcement arrangement in the suspended slab (15 marks)

SECTION C: ANSWER ONE QUESTION

7. a) Explain FIVE drain testing methods. (5 marks)
- b) State the TWO basic classifications of sanitary appliances. (5 marks)
- c) Explain THREE causes of unsealing of traps in sanitary appliances. (6 marks)
- d) Sketch a section through a high level W.C. suite showing the main installation dimensions. (7 marks)
8. a) Sketch the following layouts of subsoil drainage systems:
i) Herring-bone
ii) Fan
iii) Moat (9 marks)
- b) With the aid of sketches explain the following types of ventilation:
i) Natural ventilation
ii) Mechanical ventilation (6 marks)
- c) Define the following terms:
i) Ventilation
ii) Air-conditioning