THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)
Faculty of Engineering and Technology

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

HIGHER DIPLOMA IN BUILDING & CIVIL ENGINEERING

EBC 3234: CONSTRUCTION TECHNOLOGY & SERVICES IV

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2011

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer booklet*
- *Calculator*
- *Drawing instruments*

This paper consists of **FIVE** questions in two sections **A** & **B**
Answer question **ONE (COMPULSORY)** and any other **TWO** questions.
Maximum marks for each part of a question are clearly shown

This paper consists of **FOUR** printed pages

SECTION A (COMPULSORY)

Question 1

a) Define any **FOUR** of the following terminology:
   (i) Fire load
   (ii) Fire precaution
   (iii) Fire protection
   (iv) Combustible materials
   (v) Fire stop (8 marks)

b) Name and briefly explain any **THREE** types of maintenance (9 marks)

c) With the aid of sketches, describe the following types of roads:
   (i) Flexible
   (ii) Semi-rigid
   (iii) Rigid (9 marks)

d) Briefly explain the connection of water supply from a local authority mains to a building (4 marks)

SECTION B (Answer any TWO questions from this section)

Question 2

With the aid of sketches differentiate between the direct system of hot water supply and the indirect system of hot water system (20 marks)

Question3

With the aid of sketches, differentiate between the combined drainage system and the separate drainage system. (20 marks)

Question 4

a) Drains must be tested before and after backfilling trenches: name and briefly describe the **THREE** commonly used methods for testing drains against leakages (12 marks)

b) With the aid of sketches, describe the drainage of a reinforced concrete flat roof (8 marks)

Question 5

a) (i) State **THREE** factors that may necessitate subsoil drainage in a building site.
   (ii) Name and describe **THREE** typical drainage system patterns (12 marks)

b) With the aid of a sketch, describe an outfall discharging into a water course (4 marks)

c) A cold water storage cistern is positioned in the roof space of a bungalow such that the height between the water surface in the cistern and the draw off point is 3.0m, and the total length of

pipe is equal to 20m. assuming the discharge of litre/second, and using Thomas Box Formula determine the bore diameter of the pipe (4 marks)