



# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

*Faculty of Engineering and Technology*

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

**DIPLOMA IN CIVIL ENGINEERING WITH COMPUTER AIDED DESIGN  
(DCC 09)**

**DIPLOMA IN BUILDING & CIVIL ENGINEERING (DBC 09)**

EB 2309: CIVIL ENGINEERING CONSTRUCTION II

**END OF SEMESTER EXAMINATION**

SERIES: AUGUST/SEPTEMBER 2011

**TIME: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer booklet*
- *Scientific Calculator*

This paper consists of **FIVE** questions

Answer question **ONE (COMPULSORY)** and any other **TWO** questions

Maximum marks for each part of a question is as shown

This paper consists of **THREE** printed pages

## SECTION A (COMPULSORY)

### Question 1

- a) With the aid of a sketch, explain the working of a biological filter. Trickling filter) (10 marks)
- b) State **FIVE** factors to consider when locating a site for a dam (5 marks)
- c) Sketch and label the parts of Pot Sleeper (6 marks)
- d) State **SIX** precautions to be observed while constructing subgrade in roads (6 marks)
- e) Sketch a bridge culvert of multiple span (3 marks)

## SECTION B (Answer any TWO questions)

### Question 2

- a) With the aid of a sketch, explain the working of a septic tank (10 marks)
- b) Define the following:
  - (i) Breakpoint
  - (ii) Pre-chlorination
  - (iii) Sedimentation
  - (iv) River intake
  - (v) Seeding(10 marks)

### Question 3

- a) With the aid of a sketch, explain the direct rotary drilling method (10 marks)
- b) Explain the process of activated sludge (10 marks)

### Question 4

- a) Define the following: (6 marks)
  - (i) Berth
  - (ii) Quay
  - (iii) Wharf
- b) Sketch the **THREE** main types of breakwaters (11 marks)
- c) State the **THREE** factors upon which selection of sea wall to be built is considered (3 marks)

### Question 5

- a) Outline **FOUR** factors governing design of rigid pavements (8 marks)
- b) (i) State **FOUR** requirements of joints in concrete roads

- (ii) Sketch and label an expansion joints (10 marks)
- c) State **TWO** advantages of tunneling (2 marks)