



TECHNICAL UNIVERSITY OF MOMBASA  
**Faculty of Engineering &  
Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING  
**DIPLOMA IN BUILDING & CIVIL ENGINEERING (DBCE 11)**  
**DIPLOMA IN CIVIL ENGINEERING (DCE 11)**

ECV 2303: CIVIL ENGINEERING CONSTRUCTION II

**END OF SEMESTER EXAMINATION**

**SERIES: APRIL 2013**

**TIME ALLOWED: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions.

Answer any **THREE** questions

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

### **Question One**

- a) With the aid of a sketch, outline the classification of Roman Road Construction. **(8 marks)**
- b) State the **FOUR** situations that necessitate the application of sub-base in road structures. **(4 marks)**
- c) Outline **FOUR** precautions which should be considered while laying sub grade in roads. **(8 marks)**

### **Question Two**

- a) With the aid of a sketch, describe Vertical Lift Bridge. **(9 marks)**
- b) State the **FOUR** functions of River Training Works. **(6 marks)**
- c) State **FIVE** performance requirements of bridges. **(5 marks)**

### **Question Three**

- a) State **SIX** requirements of an ideal sleeper. **(6 marks)**
- b) Sketch and label a section through a cast iron pot sleeper. **(6 marks)**
- c) Explain **FOUR** functions of ballast in Railways. **(8 marks)**

### **Question Four**

- a) Name and explain the **FOUR** dredging processes. **(8 marks)**
- b) Sketch and label a bucket chain lower end. **(6 marks)**
- c) State the **FOUR** factors considered in assessing suitability of soil for reclamation. **(6 marks)**

### **Question Five**

- a) (i) Sketch a typical form of sea wall
- (ii) State the **THREE** factors considered in selecting type of sea wall to be built. **(6 marks)**
- b) With the aid of a sketch, outline the construction of tunnels using Full Face Method. **(9 marks)**
- c) (i) Distinguish between Alignment and Grade as applied in tunneling.
- (ii) Name the **THREE** factors considered in selecting Alignment and Grade. **(5 marks)**