



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

DEPARTMENT OF BUILDING & CIVIL ENGINEERING  
**DIPLOMA IN BUILDING & CIVIL ENGINEERING (CBCE 11)  
DIPLOMA IN CIVIL ENGINEERING (DC 11)**

ECV 2307: CIVIL ENGINEERING CONSTRUCTION III

**END OF SEMESTER EXAMINATION**

**SERIES: AUGUST 2013**

**TIME ALLOWED: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer Booklet*
- *Scientific Calculator*

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, explain the clari-flocculation process. **(10 marks)**
- b) Sketch and label the parts of a comminutor. **(4 marks)**
- c) State **SIX** advantages of dams. **(6 marks)**

### **Question Two**

- a) With the aid of sketches, explain the activated sludge process. **(8 marks)**
- b) State **FOUR** factors to consider when choosing a site for a dam. **(4 marks)**
- c) With the aid of sketches, outline the operation of a dam. **(6 marks)**

### **Question Three**

- a) State **SIX** factors to consider when designing a sewer to convey domestic sewage. **(6 marks)**
- b) Sketch and label the parts of a river intake. **(8 marks)**
- c) Outline the process of treating water for drinking from river water. **(6 marks)**

### **Question Four**

- a) Define the following:
  - (i) Flocculation
  - (ii) Spillway
  - (iii) Dead storage
  - (iv) Spillway crest
  - (v) Surcharge storage**(10 marks)**
- b) Explain **FOUR** causes of failure of a dam. **(10 marks)**

### **Question Five**

- a) With the aid of sketches, explain **FOUR** methods of controlling seepage in a dam. **(8 marks)**
- b) State **FOUR** advantages of activated sludge process over biological filter. **(4 marks)**
- c) With the aid of a line diagram, explain the sewage treatment process. **(8 marks)**