



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

DEPARTMENT OF BUILDING & CIVIL ENGINEERING  
**HIGHER DIPLOMA IN BUILDING & CIVIL ENGINEERING (HDBC)**

EBC 3110: CONSTRUCTION TECHNOLOGY & SERVICES 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*
- *Drawing Instruments*
- *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 **THREE** printed pages

### Question One

- a) (i) Define the term timbering as applied in civil engineering construction.  
(ii) State the **THREE** main reasons for timbering.  
(iii) With the aid of a sketch, illustrate timbering to a typical deep trench. **(10 marks)**
- b) Briefly explain the following concepts of construction stating the suitability of each.  
(i) Framed construction  
(ii) Load bearing wall construction **(6 marks)**
- c) Briefly outline any **TWO** functional requirements of curtain walls. **(4 marks)**

### Question Two

- a) Briefly describe any **THREE** types of upper floor construction. **(6 marks)**
- b) Describe **TWO** types of light-weight roof covering for large span industrial buildings. **(6 marks)**
- c) With the aid of a sketch, illustrate a formwork construction to a cast-in-situ reinforced concrete. **(8 marks)**

### Question Three

- a) With the aid of a sketch, describe the construction of raking shores. **(6 marks)**
- b) Describe any **TWO** materials suitable for construction of shores. **(6 marks)**
- c) State any **FOUR** safety precautions to be observed in the construction of shores. **(8 marks)**

### Question Four

- a) With the aid of a sketch:  
(i) Differentiate between “facings” and “claddings”  
(ii) Illustrate the construction of a curtain wall to a multi-storey reinforced concrete framed structure. **(11 marks)**
- b) With the aid of single-line diagrams, illustrate the following types of lattice truss roof construction:  
(i) Symmetrical pitch lattice truss roof  
(ii) Asymmetrical pitch-north light lattice truss roof  
(iii) Lattice steel girder flat roof. **(9 marks)**

### Question Five

- a) With the aid of sketches, illustrate the construction of the following types of roof-lights:  
(i) Sky light  
(ii) Monitor roof **(8 marks)**
- b) Describe the following types of floor finishes:  
(i) Granolithic

**(ii)** Terrazzo

**(6 marks)**

**c)** Describe the following types of walling materials:

**(i)** Concrete

**(ii)** Timber

**(iii)** Bricks

**(6 marks)**