



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

DEPARTMENT OF BUILDING & CIVIL ENGINEERING
**DIPLOMA IN BUILDING & CIVIL ENGINEERING (DBC 12J)
DIPLOMA IN ARCHITECTURE (DA 12J)**

EBC 2203: CIVIL ENGINEERING MATERIALS II

**SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: FEBRUARY 2013
TIME: 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 **THREE** printed pages

Question One

- a) Outline the significance of water/cement ratio as it affects the properties of concrete. **(8 marks)**
- b) Outline the process of carrying out the following tests on cements:
(i) Initial setting time
(ii) Final setting time **(8 marks)**
- c) State the importance of testing the setting times of cements **(4 marks)**

Question Two

- a) Describe the following as applied to properties of fresh concrete:
(i) Workability
(ii) Compactability
(iii) Mobility
(iv) Consistency **(10 marks)**
- b) Outline the process of carrying out the following tests:
(i) Slump test
(ii) Compaction factor test **(10 marks)**

Question Three

- a) Describe the following modes of transporting concrete stating their limitations:
(i) Wheelbarrows
(ii) Dumpers
(iii) Skips and buckets
(iv) Ready-mix concrete trucks **(12 marks)**
- b) Describe the procedure of under-water concreting. **(8 marks)**

Question Four

- a) Describe the modes of operation of the following types of mixers:
(i) Tilting drum
(ii) Non-tilting drum
(iii) Reversing drum
(iv) Pan **(15 marks)**
- b) Outline the process of hand mixing **(5 marks)**

Question Five

- a) Outline the functional requirement of a good formwork **(10 marks)**
- b) Outline surface treatment of formwork. **(5 marks)**
- c) Outline required periods of striking parts of formwork. **(5 marks)**

