



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

DEPARTMENT OF BUILDING & CIVIL ENGINEERING
DIPLOMA IN BUILDING & CIVIL ENGINEERING (DBCE 13J)

ECV 2102: CIVIL ENGINEERING MATERIALS II

SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: OCTOBER/NOVEMBER 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) Describe the following types of mixing plants:
- (i) Non tilting drum mixers
 - (ii) Tilting drum mixers
- (12 marks)**
- b) State **EIGHT** principles on how to use concrete mixers **(8 marks)**

Question Two

- a) State the precaution taken when placing concrete **(6 marks)**
- b) Explain the special attention taken when placing and working concrete **(8 marks)**
- c) State **THREE** limitations to large parks **(6 marks)**

Question Three

- a) Briefly explain the formation of the following concrete finishes:
- (i) Board mark finishers
 - (ii) Scrubbed and exposed aggregate finishes
 - (iii) Aggregate transfer
- (12 marks)**
- b) Briefly explain the preparation and placing of concrete at the construction joint **(8 marks)**

Question Four

- a) Explain the properties of fresh concrete and the factors that influence them **(10 marks)**
- b) With the aid of a sketch, briefly describe slump test **(10 marks)**

Question Five

- a) Briefly describe the properties of **FOUR** compounds of ordinary Portland cement **(10 marks)**
- b) With the aid of sketches, describe the following terms as used in absorption and surface moisture of aggregates:
- (i) oven dry
 - (ii) air dry
 - (iii) saturated and surface dry
 - (iv) wet
- (10 marks)**

