



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

DEPARTMENT OF BUILDING & CIVIL ENGINEERING
CONSTRUCTION TECHNICIAN II (CT II 12M)

EBC 1304: CONSTRUCTION MATERIALS III

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) State **EIGHT** general properties of concrete as a construction material. **(8 marks)**
- b) State **SIX**:
- (i) Advantages
 - (ii) Disadvantages of concrete as a construction material **(12 marks)**

Question Two

- a) Explain the following as used in aggregates:
- (i) Grading
 - (ii) Bulking of sand **(8 marks)**
- b) Briefly describe the laboratory determination of crushing value. **(8 marks)**
- c) Explain the qualities of good sand. **(4 marks)**

Question Three

- a) With the aid of a flow chart describe wet process of manufacturing cement. **(8 marks)**
- b) Briefly describe the properties of the four compounds of ordinary Portland cement. **(12 marks)**

Question Four

- a) Briefly describe the following types of cement:
- (i) High alumina cement
 - (ii) Super-sulphated cement **(10 marks)**
- b) Explain the effect of the following to concrete properties:
- (i) Water/cement ratio
 - (ii) Aggregate/cement ratio **(10 marks)**

Question Five

- a) With the aid of sketches, describe the slump test. **(8 marks)**
- b) State the advantages of batching from bulk cement in silos. **(5 marks)**
- c) State the reasons for regular attention when using cement weighing machines. **(7 marks)**