



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

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

EBC 2210: BUILDING TECHNOLOGY III

END OF SEMESTER EXAMINATION

SERIES: APRIL 2014

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 of the **FIVE** questions

All questions carry equal marks

Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

Question One

a) With the aid of a sketch, design a timber stair with the following particular:

- (i) Horizontal distance = 2.9m
- (ii) Vertical height = 2.7m

Assume any other relevant information (10 marks)

b) State FOUR requirement of a good stair. (4 marks)

c) Differentiate the following:

- (i) Nosing from flight
- (ii) Timbering from shoring
- (iii) Septic tank for soakaway (6 marks)

Question Two

a) With the aid of sketches, describe the following:

- (i) Raft foundation
- (ii) Wide strip foundation
- (iii) Deep strip foundation (12 marks)

b) Define the following:

- (i) Separate drainage system
- (ii) Combined drainage system
- (iii) Dead shore
- (iv) Under pinning (4 marks)

c) Outline the importance of soil investigation before designing a foundation for a building. (4 marks)

Question Three

a) Explain the following methods of testing drainage systems:

- (i) Water test
- (ii) Mirror test
- (iii) Ball test (12 marks)

b) Outline the procedure of constructing a drainage system from MH "A" to MH, "B" (8 marks)

Question Four

a) Explain the procedure of setting out formwork for a reinforced concrete stair. (8 marks)

b) With the aid of sketches, outline the uses of piles in deep foundation conditions. (6 marks)

c) Sketch and label the parts of a precast concrete stair. (6 marks)

Question Five

- a) Differentiate the following:
- (i) Ramp from stair
 - (ii) Winders from spine wall
 - (iii) Cesspool from soak pit
- (6 marks)**
- b) With the aid of sketches describe the two dewatering methods. **(6 marks)**
- c) With the aid of sketches, describe the process of preparing reinforcement for a pad foundation. **(6 marks)**
- d) List the constituents of reinforced concrete. **(2 marks)**