



**TECHNICAL UNIVERSITY OF MOMBASA**

FACULTY OF ENGINEERING AND TECHNOLOGY  
DEPARTMENT OF BUILDING & CIVIL ENGINEERING

**UNIVERSITY EXAMINATION FOR:**

**BACHELOR OF SCIENCE IN ENVIRONMENTAL HEALTH SCIENCE (PUBLIC HEALTH)  
EBC 4350 : BUILDING AND CONSTRUCTION TECHNOLOGY  
SPECIAL SUPPLEMENTARY EXAMINATION**

**SERIES: SEP. 2017**

**TIME: 2 HOURS**

**Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of five questions.

Attempt question ONE (Compulsory) and any other TWO questions.

**Do not write on the question paper.**

**QUESTION ONE (COMPULSORY)**

- a) List down five environmental considerations that you would consider before constructing a building. (5 Marks)
- b) List and define any three construction documents required when preparing for construction works. (6 Marks)
- c) List down three activities involved in clearing a site. (3 Marks)
- d) Briefly describe the 3-4-5 method of setting out. (4 Marks)
- e) State how the following materials should be stored on site: (4 Marks)
  - i. Cement
  - ii. Timber
  - iii. Bricks
  - iv. Paint
- f) Differentiate between uniform and differential settlement. (2 Marks)
- g) With the aid of sketches, differentiate between a beam and slab raft foundation and cellular raft foundation. (6 Marks)

**ATTEMPT ANY TWO QUESTIONS**

**QUESTION TWO**

- a) Define the term caisson as used in building and construction. (2 Marks)
- b) Differentiate between the following types of caissons: (8 Marks)
  - i. Box caissons
  - ii. Open caissons
  - iii. Monolithic caissons
  - iv. Pneumatic or compressed air caissons
- c) With the aid of sketches, differentiate between the following types of strip foundations: (10 Marks)
  - i. Strip foundation



- ii. Stepped strip foundation
- iii. Deep strip foundation

### QUESTION THREE

- a) With the aid of sketches, differentiate between coursed random rubble and coursed square rubble. (4 Marks)
- b) With the aid of sketches, differentiate between the following jointing and pointing designs: (10 Marks)
  - i. Concave
  - ii. Vee
  - iii. Flush
  - iv. Extruded
  - v. Weathered
- c) Sketch the following types of brick patterns: (6 Marks)
  - i. Herringbone
  - ii. Diagonal
  - iii. Basket weave

### QUESTION FOUR

- a) Discuss the stiff mud process of manufacture of bricks. (4 Marks)
- b) Sketch the following brick shapes: (6 Marks)
  - i. Queen closure
  - ii. King closure
  - iii. Three-quarter bat
- c) Discuss FIVE functional requirements of floors. (10 Marks)

### QUESTION FOUR

- a) With the aid of well labeled sketches, differentiate between a single roof and a double roof. (4 marks)
- b) With the aid of sketches, differentiate between the following eave treatment: (6 Marks)
  - i. Flush eave
  - ii. Open eave
  - iii. Closed eave
- c) Discuss the manufacture of clay blocks. (4 Marks)
- d) Draw a well labeled diagram of a concrete ground floor. (6 Marks)