



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

**UNIVERSITY EXAMINATION FOR:**

DIPLOMA IN BUILDING AND CIVIL ENGINEERING

EBC 2210: BUILDING TECHNOLOGY 1II

END OF SEMESTER EXAMINATION

**SERIES:** AUGUST 2019

**TIME:** 2 HOURS

**DATE:** Pick Date August 2019

## 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 any **THREE** questions.

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

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## Question One

- 1 (a) Briefly explain the term framed building as used in construction **(2 marks)**
- (b) With aid of sketches describe the following types of foundations
- i. Pad foundation
  - ii. Steel grillage foundation
  - iii. Balanced base foundation **(12 marks)**
- (c). Briefly explain **THREE** factors affecting the choice of a foundation **(6 marks)**

## Question Two

- 2 (a). Explain the following terms as used in stairs
- i. Stairwell
  - ii. Headroom
  - iii. Flight

- iv. Tread
  - v. Going
  - vi. nosing
- (6 marks)**

(b). Outline SIX advantages of a precast concrete stairs **(6 marks)**

(c). Sketch a typical section of a precast cranked slab stairs **(8 marks)**

### **Question Three**

3(a). With aid of sketches explain any TWO types of drainage systems **(8 marks)**

(b). A sewer line 60m long is to be laid at a fall of 1:100 from MH -1 to MH -2. The reduced level (R.L) of the ground peg at 1 is 115.210 m. The reduced level (R.L) of ground peg at 2 is 115.350 m. A 3m boning rod is available. Calculate the height above each ground peg at which sight rails are to be fixed and the invert level (I.L) of MH-2. Given I.L of MH -1 = 113.360 m **(6 marks)**

(c). Briefly explain with aid of a sketch the principle of setting out of a trench for laying a sewer line. **(6 marks)**

### **Question Four**

4 (a). Briefly explain the reasons for undertaking site dewatering in a site **(6 marks)**

(b). Explain the following methods of site dewatering

- i. Electro osmosis
  - ii. Sump pumping
- (6 marks)**

(c). Briefly explain the TWO methods of well point system of dewatering **(8 marks)**

### **Question Five**

5(a). Briefly describe the THREE types of shoring **(6 marks)**

(b). Explain the reasons for doing underpinning **(4 marks)**

(c) With aid of a sketch explain a typical traditional underpinning method **(10 marks)**