



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BUILDING & CIVIL ENGINEERING
INSTITUTIONAL BASED PROGRAMME
UNIVERSITY EXAMINATION FOR:

- DIPLOMA IN BUILDING AND CIVIL ENGINEERING
EBC 2310: BUILDING TECHNOLOGY III
END OF SEMESTER EXAMINATION

SERIES: JULY 2017

TIME: 2 HOURS

DATE: ----JULY 2017

Instructions to Candidates

You should have the following for this examination

-*Answer Booklet, examination pass and student ID*

-*Drawing instruments.*

-*Scientific calculator*

This paper consists of **FIVE** questions.

Attempt **any THREE** questions.

Do not write on the question paper

Mobile Phones are NOT allowed inside the examination room

QUESTION ONE

Question One

(a) State the **THREE** functional requirements of a building foundation **(6 marks)**

(b) With the aid of sketches, describe:-

(i) **THREE** types of raft foundation

(ii) Steel grillage **(14 marks)**

QUESTION TWO

(a) With the aid of sketches, describe the construction of insitu driven piles **(8 marks)**

(b) With the aid of sketches, describe the following types of stairs:-

(i) cranked slab stair

(ii) Precast concrete cantilever stair (**12 marks**)

QUESTION THREE

a) Briefly explain FIVE principles of good drainage system (**10 marks**)

b) Using sketches briefly explain the use of sight rail and boning rod to grade trenches (**10 marks**)

QUESTION FOUR

(a)Sketch and label the following the following invert levels in man-holes

(i) Ramp connection

(ii) Back- drop connection (**10 marks**)

b) Using sketches, describe TWO methods for testing drains (**10 marks**)

QUESTION FIVE

a) State FOUR general information required before dewatering (**4 marks**)

b)With the aid of a well labeled sketch briefly describe sump pumping method of dewatering (**10 marks**)

c) State FIVE reasons for under-pinning structures (**6 marks**)