THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

HIGHER DIPLOMA IN BUILDING & CIVIL ENGINEERING

BCE 3313: CONSTRUCTION TECHNOLOGY & SERVICES I

END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2012
TIME: 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 (20 Marks)

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

b) With the aid of a sketch describe the construction of raft foundation. **(8 marks)**

c) Using sketches, describe the following principle of pile foundation:
(i) End bearing
(ii) Friction pile **(6 marks)**

Question Two (20 marks)

a) Explain the information required before dewatering. **(5 marks)**

b) With the aid of a sketch, describe sump pumping dewatering method. **(8 marks)**

c) Using sketches describe the following methods of installing well point systems:
(i) Ring system
(ii) Progressive **(7 marks)**

Question Three (20 marks)

a) Sketch and label the following details of a stanchion:-
(i) Slab or bloom base
(ii) Stanchion cap
(iii) Stanchion splice
(iv) Hinged base connection of a steel portal frame. **(14 marks)**

b) State **THREE** advantages of using:
(i) Precast concrete frames
(ii) Insitu concrete frames **(6 marks)**

Question Four (20 marks)

a) Explain the regulations governing submissions and approval of plans by statutory body. **(6 marks)**
b) Briefly explain the works involved in site clearance **(5 marks)**
c) Using sketches, explain **THREE** methods of leveling a site. **(9 marks)**

Question Five (20 marks)

a) (i) Briefly explain temporary site works
(ii) Name **SIX** examples of temporary site works. **(8 marks)**

b) With the aid of a sketch, describe internal tanking in mastic asphalt **(8 marks)**

c) State **FOUR** advantages of precast concrete portal frame. **(4 marks)**