TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

DIPLOMA IN BUILDING & CIVIL ENGINEERING (DBCE 13S)

EBC 2202: CIVIL ENGINEERING CONSTRUCTION I

END OF SEMESTER EXAMINATION
SERIES: DECEMBER 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
Use neat, large and well labeled diagrams where required.

This paper consists of **TWO** printed pages

Question One

a) Using suitable sketches show the TWO main methods of anchoring sheet piles to rock. **(10 marks)**

b) (i) State the TWO factors that influence types of cofferdam to be selected.
(ii) Outline the THREE main causes of failure of single wall cofferdams. **(10 marks)**

Question Two

a) With the aid of a labeled sketch, describe a cantilever retaining wall. **(10 marks)**

b) State the FOUR design principles of a retaining wall. **(6 marks)**

c) State FOUR adverse effects of a ground water behind a retaining wall. **(4 marks)**

Question Three

a) With the aid of a sketches, describe the following:
(i) Earth fill dams
(ii) Rock fill dams **(10 marks)**

b) Briefly explain the following dewatering methods:
(i) Pumping
(ii) Freezing **(4 marks)**

c) Sketch and label section through underpinning to walls. **(6 marks)**

Question Four

a) Explain FIVE indicators of application of the labour based approach. **(10 marks)**

b) With the aid of a labeled sketch, describe the operation of pneumatic caission. **(10 marks)**

Question Five

a) (i) State the TWO functional requirement of foundations
(ii) State the THREE situation that necessitate the use of raft foundations. **(6 marks)**

b) State the FOUR factors upon which the selection of piling system relies **(4 marks)**

c) With the aid of a labeled sketch, describe a cantilever wall. **(10 marks)**