



TECHNICAL UNIVERSITY OF MOMBASA
**Faculty of Engineering &
Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING
DIPLOMA IN BUILDING & CIVIL ENGINEERING (DBCE 12M)

EBC 2306: BUILDING TECHNOLOGY IV

END OF SEMESTER EXAMINATION

SERIES: APRIL 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
This paper consists of **THREE** printed pages

Question One

- a) Describe the following types of retaining walls:
(i) Cantilever
(ii) Counterfort **(8 marks)**
- b) With the aid of sketches explain the mode of failure of retaining walls:
(i) Overstressing
(ii) Rotational **(8 marks)**
- c) State FOUR factors to consider before the construction of a retaining wall on a site. **(4 marks)**

Question Two

- a) With the aid of sketches, explain the procedure of excavating for basement using the following methods:
(i) Timbering method
(ii) Diaphragm wall construction (bentonite) **(12 marks)**
- b) Explain the TWO methods of water proofing in basement construction. **(8 marks)**

Question Three

- a) With the aid of sketches, describe the following: **(12 marks)**
(i) North light lattice trusses
(ii) Cantilever lattice trusses
- b) Outline the ventilation requirement for:
(i) Domestic building
(ii) Industrial building
(iii) Public buildings. **(8 marks)**

Question Four

- a) With the aid of sketches, describe the following dewatering techniques:
(i) Freezing
(ii) Electro-osmosis **(12 marks)**
- b) Sketch the following:
(i) Double leaf sliding door
(ii) Horizontal sliding window **(8 marks)**

Question Five

- a) Explain the following ventilation systems:
(i) Natural
(ii) Mechanical **(10 marks)**

b) State TWO building code requirements for ventilation in domestic building. (2 marks)

c) Explain the following:

(i) ½ hour fire resistance

(ii) Monitor roof

(iii) Skylight for roofs

(8 marks)