



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

Faculty of Engineering and Technology

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

DIPLOMA IN ARCHITECTURE

EBC 2311: BUILDING TECHNOLOGY IV

END OF SEMESTER EXAMINATION

SERIES: AUGUST/SEPTEMBER 2011

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer booklet*
- *Pocket calculator*

This paper consists of **FIVE** questions in **TWO** sections **A & B**

Answer question **ONE (COMPULSORY)** and any other **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

SECTION A (COMPULSORY)

Question 1

a) With the aid of a sketch, describe:

- (i) Dimpling method of basement excavation
- (ii) External tanking, lighting treatment at construction joint and service ducts (23 marks)

b) Sketch and label ventilation system where air inlet is mechanical and extract is natural (7 marks)

SECTION B (Answer any TWO questions from this section)

Question 2

a) Explain the following dewatering techniques

- (i) Electro-osmosis
- (ii) Freezing (10 marks)

b) Define the following terms used in fire doors

- (i) Smoke stop door
- (ii) Stability
- (iii) Integrity
- (iv) Fire check doors
- (v) Fire resisting doors (10 marks)

Question 3

a) With the aid of sketches, explain the following types of failure of retaining walls

- (i) Sliding
- (ii) Over-turning (12 marks)

b) Using a sketch, describe a cantilever wall with a toe and heel (8 marks)

Question 4

a) Figure 1 shows an elevation of vertical sliding sash window. Sketch and detail section A – A (7 marks)

A

- b) State the advantages and disadvantages of using vertically sliding sash windows (7 marks)
- c) State the factors considered when designing roof-lighting (6 marks)

Question 5

- a) State the factors governing ventilation rates (6 marks)
- b) With the aid of a sketch, describe single span steel northlight roof truss (9 marks)
- c) State **FIVE** building code requirements for ventilation (5 marks)