



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

Faculty of Engineering & Technology

DEPARTMENT OF CIVIL AND BUILDING ENGINEERING

**DIPLOMA IN BUILDING 2008
DIPLOMA IN ARCHITECTURE 2008**

END OF SEMESTER I EXAMINATION

APRIL/MAY 2010 SERIES

BUILDING TECHNOLOGY AND SERVICES

TIME: 2 HOURS

Instructions to Candidates

You should have the following for this examination:

- Question paper
- Answer booklet
- Calculator

This consists of **FIVE** Questions in Section **A** and **B**.

Answer Section **A (COMPULSORY)** and any other **TWO** Questions from Section **B**.

The maximum marks for each part of a question are as shown.

SECTION A (COMPULSORY)

Question ONE (30 Marks)

- (a). With the aid of a sketch, describe perimeter trench (Dumpling method) of excavation. **(13 Marks)**
- (b). Sketch and detail a cross-section of external tanking:
In the sketch include:-
- Construction joint
 - Service duct **(8 Marks)**
- (c). With the aid of a sketch, describe dual system mechanical ventilation. **(9 Marks)**

SECTION B

Question TWO

- (a). With the aid of a sketch, describe diaphragm wall construction by bentonite. **(10 Marks)**
- (b). Describe the following dewatering techniques:
- (i). Electro-osmosis
 - (ii). Freezing **(10 Marks)**

Question THREE

- (a). Sketch and detail the following:
- (i). Cantilever retaining wall with a heel
 - (ii). Section of counter-fort retaining wall **(10 Marks)**
- (b). With the aid of sketch, describe the closing of automatic fire door. **(10 Marks)**

Question FOUR

- (a). State:-
- (i). Advantages of vertical sliding window.
 - (ii). Disadvantages of vertical sliding window. **(5 Marks)**
- (b). With the aid of a sketch, describe umbrella truss. **(5 Marks)**

(c). Explain the following with reference to fire Doors:

- Smoke stop
- Stability
- Integrity
- Fire check
- Fire resisting

(10 Marks)

Question FIVE

(a). With the aid of a sketch, describe single span steel northlight roof truss.

(7½ Marks)

(b). Explain the functional requirements of rooflight material.

(5 Marks)

(c). State **FIVE** factors governing ventilation rates.

(7½ Marks)