



**THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE**

**((A Constituent College of JKUAT)**

(A Centre of Excellence)

# **Faculty of Engineering & Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

**DIPLOMA BUILDING & CIVIL ENGINEERING**

**DIPLOMA IN ARCHITECTURE**

EBC 2217: CIVIL ENGINEERING DRAWING & COMPUTER AIDED DESIGN &  
DRAFTING

**END OF SEMESTER EXAMINATION**

**SERIES: DECEMBER 2012**

**TIME: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *A Laptop/Desktop Computer Installed with AutoCAD*
- *Create a FOLDER in the desktop and name it DA10B(DEC 12). Save all your answers in this folder.*

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)**

The following information relates to a r.c roof slab simply supported on load bearing masonry walls:

- (i) Wall thickness = 225 mm
- (ii) Slab thickness = 100mm
- (iii) Store room plan dimensions = 4m x 3.6m (internally)
- (iv) Main reinforcement = Y10 at 250mm centres
- (v) Distribution reinforcement = Y8 at 300mm centres
- (vi) Assume any other necessary information

Using the above information, draw and detail the slab on plan and in section. **(20 marks)**

**Question Two (20 marks)**

The following information relates to the ground floor layout plan shown in figure 1.

- Type of construction = r.c. framed building
- Column size = 300 x 300mm
- Foundation bases = 1500 x 1500mm
- Strip foundation = 900mm wide and 200mm thick
- Walling – 175mm thick dressed quarry stone blocks.

Draw the foundation plan for the building. **(20 marks)**

**Question Three (20 marks)**

Refer to Figure 1. Assuming a F.F.L to F.F.L height of 3600mm, a flight width of 1500mm wide, and draw:

- (i) The plan of the staircase
- (ii) A vertical section through the stair case – first two flights. **(20 marks)**

**Question Four (20 marks)**

Refer to figure 2.

The following information relates to a retaining wall to be constructed at the position shown in the figure 2.

- Stem thickness at Top = 350mm
- Bottom = 500mm
- Base - thickness = 500mm
- Length of toe = 2400mm
- Length of heel = 1000m
- Heal beam = 400mm wide x 600mm deep.

Draw a x-section thro' r.c canlever retaining wall showing typical arrangement of reinforcement. Assume Y20 bars. **(20 marks)**

**Question Five (20 marks)**

Figure 3 shows the outline of a pitched timber roof to a bungalow. Draw the roof plan of the hipped ended roof. **(20 marks)**