



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR:
BACHELOR OF SCIENCE IN BUILDING & CIVIL ENGINEERING

ECE 2216: TECHNICAL DRAWING IV

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*
- *Scientific Calculator*

This paper consists of **FIVE** questions.

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

Maximum marks for each part of a question are as shown

This paper consists of **FOUR** printed pages

Question One (Compulsory)

- a) The figure below shows an incomplete section through a lean to roof and the wall to which the roof is fixed. The drawing shows the rafter onto which the roofing tiles are to be fixed to the wall to which the roof rafters are jointed. Make a full size drawing of a complete sectional view of the part of the roof and wall shown by adding:

Figure 1

- (i) The plan of the two rooms and a kitchen measuring (4 x 3), (3 x 3) and (2 x 3) m respectively.
- (ii) All necessary elevations of the building.

Note: Other information not given is left to your judgement. **(25 marks)**

- b) Define the term blue printing hence give the steps followed when doing a blue-print exercise. **(5 marks)**

Question Two

- a) Briefly explain the following terms as used in building drawing:

- (i) Site location plan
- (ii) Site plan
- (iii) Building plan
- (iv) Sectional plan
- (v) Elevation

(10 marks)

- b) One of the types of drawing is a site plan. Make a free hand drawing of an area of ground which you think might be suitable for building a house. The design a site plan for the piece of land showing where you think a house could be built. **(10 marks)**

Question Three

- a) Using a well labeled illustration, draw a reinforced concrete drawing for: defining the term reinforced concrete.

- (i) A slab
- (ii) A beam
- (iii) A column
- (iv) A footing

(10 marks)

- b) Draw a sectional view through a simple brick wall the foundation on which it is resting, together with a concrete roof and floor. Use a scale of 1:50 and include the coping, flashing and all other sub-structures details. **(10 marks)**

Question Four

With a well labeled diagram draw a reinforced concrete stair considering all provisions provided in the building code. The stair should be a half-speed open well stair in a (5 x 3m) room. **(8 marks)**

Draw to details the following free-hand drawing of a building plan to a scale of 1:100.

Figure 2

Note:

- (i) All the walls are 200mm thick
- (ii) The foundation is 900mm deep
- (iii) Drawing the plan
- (iv) Elevations
- (v) Sectional details

(12 marks)

Question Five

- a) Define the terms below as used in AutoCAD:
- (i) UCS
 - (ii) Cartesian coordinate system
 - (iii) Co-ordinate read out
 - (iv) Object snap
 - (v) Running object snaps

(6 marks)

- b)** Using the drawing and co-ordinates in A above. Write down a relative co-ordinate entry procedure. Start from point P. **(4 marks)**
- c)** Using the drawing and co-ordinates in B above write down a polar co-ordinate entry procedure start from point P. **(5 marks)**
- d)** Describe how to Chamfer two connecting lines. **(5 marks)**