



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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University Examinations 2019/2020

SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF TECHNOLOGY IN CIVIL ENGINEERING ECT 3202: CIVIL ENGINEERING DRAWING

DATE: OCTOBER 2020

TIME: 2 HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE (30 MARKS)

- a) Make free hand sketches of the following tools (8 Marks)
- i. A carpenters mallet
 - ii. A pointing trowel
 - iii. A steel float
 - iv. A plumb bob
- b) Construction a parabolic arch whose width and height are 75mm and 65mm respectively (6 marks)
- c) The figure below shows an elevation of a gate pillar. Draw an isometric view of the pillar making corner x the lowest point (10 marks)

- d) Draw a circle to touch points XYZ whose distances are: $XY=45\text{mm}$, $YZ=50\text{mm}$ and $XZ=65\text{mm}$ (6 marks)

QUESTION TWO (20 MARKS)

- a) The figure shows an isometric drawing of a block using first angle projection, draw (20 marks)
- i. The front elevation
 - ii. The plan
 - iii. The end elevation

QUESTION THREE (20 MARKS)

- a) The figure below shows orthographic views of a block in third angle. Draw an isometric block with 'A' as the lowest point (15 marks)

b) Construct an ellipse with a major axis of 110mm and a minor axis of 55mm (5 marks)

QUESTION FOUR (20 MARKS)

a) Copy the drawing below and dimension it fully showing dimension lines and projection lines (7 marks)

b) Draw a tangent to the given circle from point P (6 marks)

c) Construct an external tangent to two circles of $\phi 40$ and $\phi 50$ mm and centre distance 70mm (7 marks)

QUESTION FIVE (20 MARKS)

a) Construct a circumscribing circle to a triangle ABC of sides AB=45mm, BC=55mm and AC=70mm (6 marks)

- b) Construct a scale of 1 in 2.5 to read up to 400mm in mm (10 marks)
- c) Construct the circumference of a circle of diameter (40mm) (4 marks)