MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

UNIVERSITY ORDINARY EXAMINATION

2023/2024 ACADEMIC YEAR

FOURTH YEAR **SECOND** SEMESTER EXAMINATION FOR BACHELOR OF TECHNOLOGY IN ELECTRIC AND ELECTRONIC ENGINEERING

EET216: ELECTRICAL MACHINES

DURATION: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Answer Question one and any other two questions.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

1 a) Print

(i) letter A,E,N,R,W and numerals 3,4,5,7 (5marks)

(ii) Construct

(I) Medium a continuous line
(II) Short thin dashed lines
(III) Thin chained line
(IV) Thin dark continuous line
(V) Thin broken with ends turned line (5marks)

b) Figure 1 shows a circular wheel of 50mm diameter with point 'P' attached to its peripheral. The wheel rolls without stopping along a perfectly straight track while remaining on the same plane. Plot the path of point 'P' for one revolution.

_____

c) Construct a preptagon of side 30mm long using a semi-circle method. (7marks)

Draw an ellipse of 85mm and 48mm major and minor directrices respectively. (6marks)

SECTION TWO: ANSWER ANY TWO QUESTIONS

QUESTION TWO (20 MARKS)

a) Construct a regular pentagon in a circle of diameter 100mm. Reduce the pentagon into a triangle of the same area as the pentagon (14marks)

b) With the aid of sketches show three methods of dimensioning the following.

i) Circles using diameters
ii) Radious of curves (6marks)

QUESTION THREE (20 MARKS)

a) Sketch conventional symbols representing the following projections

i) First angle

ii) Third angle (4marks)

b) Figure 2 shows a truncated squire pyramid of 100mm height

_____

Draw

i) The plan

ii) True shape of selction A – A (10marks)

c) Construct an involute generated by a square _____30mm length (6marks)

QUESTION FOUR (20 MARKS)

a) Divide a 190mm line long into 11(eleven) equal parts. (5marks)

b) Construct an isometric circle in a given square of 80mm side long. (7marks)

c) Figure 3 shows a profile of a turbine blade. Draw the blade full size, showing the construction used to obtain the centers of radii. (8marks)