



MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

FIRST SEMESTER FIRST YEAR EXAMINATION FOR

CRAFT IN ELECTRICAL ENGINEERING

1601/104 TECHNICAL DRAWING

DATE:

TIME:

INSTRUCTIONS

- *This Examination contains FIVE questions*
 - *Attempt all questions*
 - *All questions carry equal marks*
1. a) Construct an internal tangent to two circles of diameters 60 mm, and 80mm with center distance of 100 mm (10 marks)
b) draw an ellipse with major axis 90mm and minor axis 60mm using concentric circle method. (10 marks)
 2. a) construct a regular heptagon given that its side is 55mm. (10 marks)
b) draw and name five types of lines. (10 marks)
 3. a) construct a triangle PQR given that its perimeter is 200mm and that its altitude is 50mm. inscribe a circle in triangle PQR. (10 marks)
b) Figure 2 is an elevation of the turning handle of a can opener. Draw this view, twice full size, showing clearly the method of establishing the centers of the arcs. (10 marks)

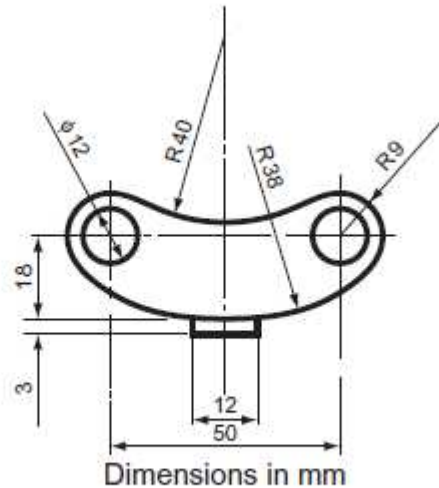


Figure 2

4. a) Construct a triangle given that its perimeter is 115mm and that the ratio of sides is 3:2:5. (10 marks)
- b) Draw a locus traced by a point on a wheel of diameter 60mm which rolls one complete rotation on a flat surface without slipping. (10 marks)
5. a) Construct a regular pentagon given that the diameter is 70mm. (10 marks)
- b) Construct an ellipse with major and minor axis 110mm and 70mm respectively using foci method. (7 marks)
- c) Illustrate THREE methods of angular dimensioning. (3 marks)