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DEPARTMENT OF MECHANICAL ENGINEERING

GE 8152 – ENGINEERING GRAPHICS

UNIT I

INTRODUCTION

GEOMETRICAL CONSTRUCTIONS

1. Draw an equilateral triangle of side 30mm.
2. Construct a square of side 40mm.
3. Construct a pentagon of side 30mm.
4. Construct a hexagon of side 40mm.
5. Bisect a given line of length 65mm.
6. Bisect a given angle of 45^0.
7. Divide a straight line of length 75mm in to 6 equal parts.

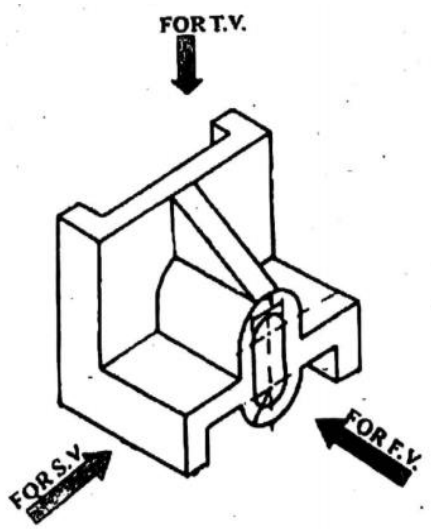
CONIC SECTION

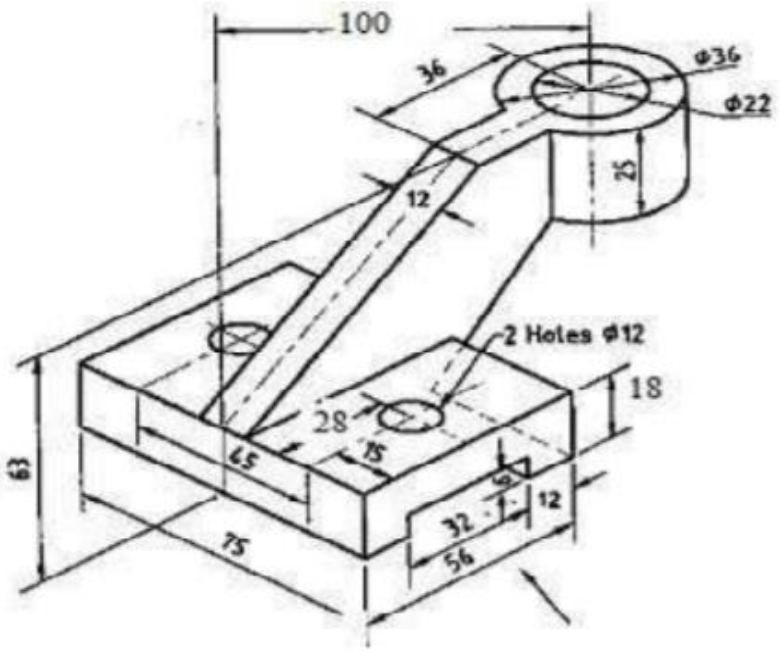
1. Draw an ellipse when the eccentricity is 2/3 and the distance of the focus from the directrix is equal to 50mm. Also draw a normal and tangent to a point on the ellipse which is at a distance of 70mm from the directrix.
2. Draw an conic curve with eccentricity is one when the distance between fixed line and fixed point is 60mm.
3. Construct a hyperbola with the distance between focus and directrix as 50mm and eccentricity as 3/2. Also draw the tangent and normal at a point , 25mm from the axis.
4. Draw a cycloid given the diameter of the generating circle as 40mm.
5. Draw an involute of a circle of diameter 40mm.(K.V.Natarajan 68).

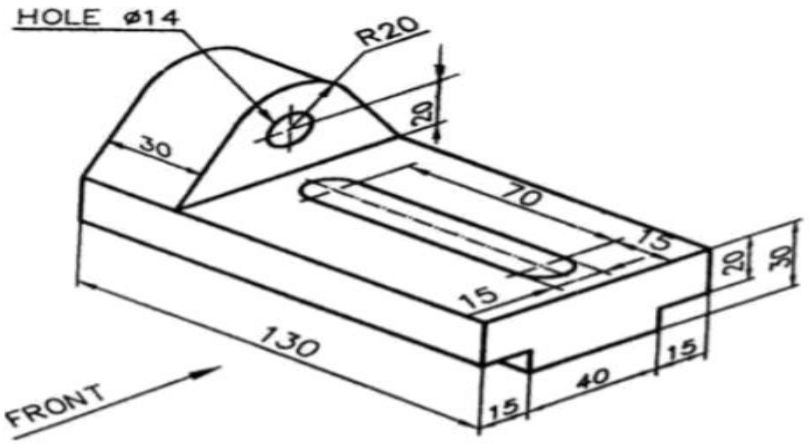
6. An inelastic string of 150mm length has its one end attached to the bottom most point of the circumference of a circular disc of 40mm diameter. Draw the curve traced by the other end of the string when it is completely wound around the disc keeping the string always tight. Name the curve. Draw the tangent and normal to the curve at a point 100mm from the centre of the disc.
7. Draw locus of a point on the periphery of a circle having diameter of 50mm which rolls on a straight line path. Name the curve and draw a tangent and normal at any point Q on it.

8. FREE HAND SKETCHING

Sketch by free hand front view ,top vie and right side view of the object shown below.




100
36
Φ36
Φ22
25
12
2 Holes Φ12
18
28
63
45
15
9
12
32
56
75


HOLE Φ14
R20
20
30
70
15
20
30
15
130
15
40
15
FRONT