R16 SS

Reg. No:

Time: 3 hours   Max. Marks: 60
(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1 **a** Draw an ellipse having major axis is equal to 100 mm and the minor axis is equal to 70 mm. Use the concentric circle method. **6M**

b Draw the involute of a regular hexagon of side 20 mm. Draw a tangent and normal to the curve at a distance of 100 mm from the centre of the hexagon. **6M**

OR

2 **a** Draw an epi-cycloid of rolling circle of diameter 40 mm which rolls outside another circle (base circle) of 150 mm diameter for one revolution. Draw a tangent and normal at any point on the curve. **8M**

b Draw the involute of an equilateral triangular of side 20 mm. **4M**

UNIT-II

3 A line AB, 50mm long, has its end A away from the HP and VP than end B. The line is inclined to the HP at 30^0 and to the VP at 4^{50}. Draw the projections if end A is 35mm above the HP and 50mm in front of the VP. **12M**

OR

4 Draw the projections of a straight line AB of 70 mm long, in the following positions:
a) Inclined at 30^0 to VP, in HP and one end on VP.
b) Inclined at 45^0 to HP, one end 20 mm above HP and parallel to and 30mm in front of VP.
c) Inclined at 60^0 to VP, one end 20 mm in front of VP and parallel to and 25 mm above HP. **12M**

UNIT-III

5 An equilateral triangular plane ABC of side 40mm has its plane parallel to VP and 20mm away from it. Draw the projections of the plane when one of its sides is
(i) Perpendicular to HP (ii) parallel to HP and (iii) inclined to HP at an angle of 45^0. **12M**

OR

6 Draw the projections of a cone, base 30 mm diameter and axis 50 mm long , resting on HP on a point of its base circle with (a) the axis making an angle of 450 with HP and its top view making an angle of 300 with VP. **12M**

UNIT-IV

7 A hexagonal prism of side of base 30 mm and length of axis 75 mm is resting on its base on HP. It is cut by a section plane inclined 35 degree to HP and passing through top corner. Draw the front and sectional top views of the solid and true shape of the section. **12M**

OR

8 A pentagonal pyramid, side of base 30 mm and height 52 mm, stands with its base on HP and an edge of the base is parallel to VP. It is cut by a plane perpendicular to VP, inclined at 40 degree to HP and passing through a point on the axis, 32 mm above the base. Draw the development of the lateral surface of the truncated pyramid **12M**

UNIT-V

9 Draw three views of the blocks shown pictorially in figure according to first angle projection **12M**

OR

10 **a** Draw the isometric projection of a hexagonal prism of base side 30 mm and axis 70mm. The prism rests on its base on the HP with an edge of the base parallel to the VP. **6M**

b Draw the isometric projection of the frustum of a cone of base diameter 60 mm , top diameter 30mm,and height 55mm. **6M**

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