JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year I Semester Examinations, May/June - 2017 ENGINEERING GRAPHICS (Common to CE, MIE, CEE)
Time: 3 hours
Max Marks: 75

## Answer any five questions <br> All questions carry equal marks

1.a) A point ' M ' is 2.5 cms from x -axis and 3.5 cms from y -axis. Draw a hyperbola passing through this point.
b) A circle of 40 mm diameter is rolling outside the circle of radius 60 mm . Draw the locus of a point on the circumference of rolling circle for one complete revolution. [7+8]

## OR

2.a) If 1 cm long line measures a real distance of 40 m . Find R.F. The scale is to measure upto metre and long enough upto 500 m . Mark on it a distance of 256 m .
b) Draw involute of circle of 40 mm diameter and draw tangent and normal to the curve from any point on the curve.
[7+8]
3.a) A 60 mm long line is parallel to V.P and inclined at $30^{\circ}$ to H.P. It's one end is 10 mm above H.P. and 25 mm infront of V.P. Draw the projections.
b) A Hexagon of 3 cm side is resting on a corner in HP and its surface is $30^{\circ}$ inclined to H.P. and perpendicular to V.P. Draw the projections.

## OR

4. The diagonals of Rhombus are 120 mm and 50 mm . The longer diagonal is lying on its corner in H.P with its surface inclined at $30^{\circ}$ to H.P and smaller diagonal is parallel to both H.P and V.P. Draw the projections.
5. A hexagonal pyramid of side 3 cm height 6.5 cms is resting on one of its base edges in V.P and inclined at $30^{\circ}$ to H.P. Its axis is inclined at $40^{\circ}$ to V.P. Draw the projections.

## OR

6. A cylinder of 40 mm diameter, height 70 mm is resting on a point on the circumference of base circle in H.P, such that its axis is inclined at $30^{\circ}$ to H.P and top view of the axis is inclined at $40^{\circ}$ to V.P. Draw the projections.
7. A pentagonal prism of side 3 cm height 7 cms is resting on its base in H.P. such that one of the base edges is parallel to V.P. It is cut by a section plane perpendicular to V.P and inclined at $60^{\circ}$ to H.P. and passes through a point 15 mm below the top center. Draw the sectional top view and true shape of section.

## OR

8. A cone of 40 mm diameter 70 mm height is resting on its base in H.P. It is cut by a section plane perpendicular to V.P, parallel to one of the generators and passes through a point 15 mm below the apex. Draw the sectional top view and true shape of section.
9. Draw the isometric projection of a hemisphere of 4 cm diameter resting on its curved surface centrally on the top of a frustum of square pyramid with top face of 3 cm side and bottom face of 5 cm side having a height of 5 cm .

## OR

10. Draw the front view, top view and side view for the component shown in figure. All dimensions are in mm .

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