

Code No: 131AF

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech I Year I Semester Examinations, May/June - 2017

ENGINEERING GRAPHICS

(Common to CE, ME, CEE)

Time: 3 hours

Max Marks: 75

Answer any five questions

All questions carry equal marks

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- 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. Its one end is 10 mm above H.P. and 25 mm in front 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. [7+8]

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. [15]
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. [15]

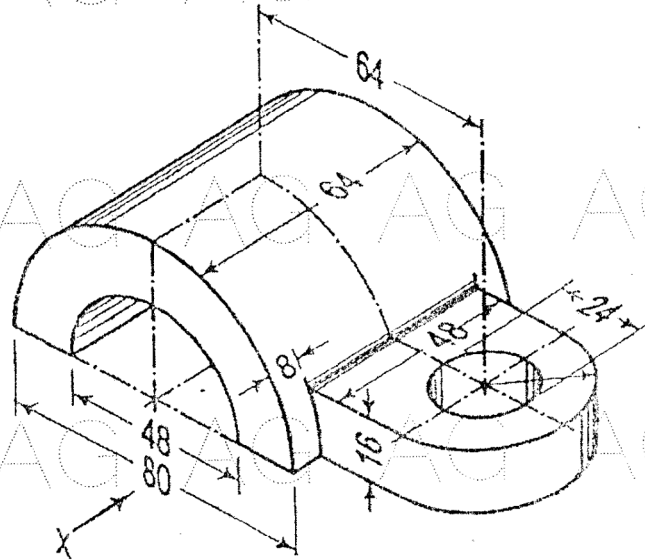
OR

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. [15]
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. [15]
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. [15]

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. [15]

OR

10. Draw the front view, top view and side view for the component shown in figure. All dimensions are in mm. [15]



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