

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD B.Tech I Year Examinations, August/September - 2016 ENGINEERING DRAWING (Common to CE, EEE, CEE, CHEM, AGE, AE)

Time: 3 hours

Max Marks: 75

Answer any five questions All questions carry equal marks

1.a) Inscribe a hexagon in a circle having 60 mm diameter when one of the sides of the hexagon is vertical.

b) The distance between two points on a map is 15 cm. The real distance between them is 20 km. Draw a diagonal scale to measure up to 25 km and show a distance of 13.6 km on it.

OR

- 2. A coin of 40mm diameter rolls over horizontal table without slipping. A point on the circumference of the coin is in contact with the table surface in the beginning and after one complete revolution. Draw and name the curve. Draw a tangent and normal at any point on the curve. [15]
- 3.a) A 60 mm long line AB is parallel to and 20 mm in front of the VP. The ends A and B of the line are 10 mm and 50 mm above the HP respectively. Draw the projections of the line and determine its inclination with the HP. Also locate the traces of the line.
 - b) A triangular plane is in the form of an isosceles triangle having base with a 30 mm side and an altitude of 40 mm. It is kept in the first quadrant such that the surface is perpendicular to both HP and VP. Draw its projections when the base is parallel to the VP.

OR

- 4. The HT and the VT of a straight line coincides with each other and 20 mm away from one of the ends as measured parallel to XY. The distance between the end projectors of the line measured parallel to XY is 50 mm. Draw the projections. Find the true length and the true inclinations of the line. The end nearer to the HT and the VT is 15 mm from the VP and 25 mm from the HP. [15]
- 5. A right circular cone 50 mm base diameter and 80 mm height rests on the ground on one of the points of the base circle. Its axis is inclined to HP at 50° and to VP at 30° . Draw the projections of the cone. [15]

OR

- 6. A regular hexagonal pyramid of side 30 mm and height 65 mm is resting on its base on HP. One of its base sides is parallel to VP. It is cut by a cutting plane which is parallel to H.P. and perpendicular to V.P. and passing through at a height of 45 mm from its bottom. Draw its sectional front view and top view. [15]
 - 7. A cylinder of base 120 mm and axis 160 mm long is resting on its base on HP. It has a circular hole of 90 mm diameter, drilled centrally through such that the axis of the hole is perpendicular to VP and bisects the axis of the cylinder at right angles. Develop the lateral surface of the cylinder. [15]

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- 8. A square prism of base 50 mm side and height 125 mm stands on the ground with the side of its base inclined at 30° to VP. It is penetrated by a cylinder, 50 mm diameter and 125 mm long, whose axis is parallel to both HP and VP and bisects the axis of the prism. Draw the projections showing fully the curves of intersection. [15]
- 9.a) Draw the isometric view of a pentagonal prism of base 60 mm side, axis 100 mm long and resting on its base with a vertical face perpendicular to VP.
 - b) A square lamina of 30 mm side lies on the ground plane. One of its corners is touching the PP and edge is inclined at 60° to PP. The station point is 30 mm in front of PP, 45 mm above GP and lies in a central plane which is at a distance of 30 mm to the right of the corner touching the PP. Draw the perspective projection of the lamina. [7+8]

OR

10. Draw the elevation, top view and side view of the object shown in figure. All dimensions are in mm. [15]



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