

**Code No: 121AH****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech I Year Examinations, May/June - 2017****ENGINEERING DRAWING****(Common to CSE, MIE, PTM)****Time: 3 hours****Max Marks: 75****Answer any five questions****All questions carry equal marks**

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- 1.a) Construct a vernier scale to read meters, decimeters and long enough to measure up to 8 m, when 1 m is represented by 20 mm. Find R.F. and show a distance of 5.38 m on it.
- b) The transverse axis of a hyperbola is 70 mm long. Its double ordinate is 80 mm long and the corresponding abscissa is 50 mm. Construct the hyperbola. [8+7]

**OR**

- 2.a) In a vernier scale the difference between 1VSD and 1MSD was found to be 1 cm. RF is 1:80. The scale is to measure a distance of 10 m. Construct a scale and show on it a length of 3.09m.
- b) Draw two branches of rectangular hyperbola having its vertices 50 mm apart and determine its directrices and foci graphically. [8+7]

3. A line PQ, inclined at  $35^{\circ}$  to the V.P., has a 50 mm long front view. The end P is 10 mm from both the principal planes while the end Q is 35 mm above the H.P. Draw the projections of the line and determine its true length and inclinations with the principal planes. Also, locate its traces. [15]

**OR**

4. A composite plate of negligible thickness is made up of a rectangle with sides 50 mm and 40 mm long and a semicircle on its longer side. The plane is situated in the H.P. with one of its shorter side parallel to the V.P. Draw its projections. [15]

5. A pentagonal prism, having a base with a 30 mm side and a 70 mm long axis, is resting on a base in the H.P. with an edge of the base perpendicular to the V.P. It is cut by an A.I.P. in such a way that the true shape of the section is a trapezium with one of its parallel sides of 40 mm length, another side of maximum possible length and 60 mm altitude. Draw the projections and true shape of the section. [15]

**OR**

6. A hollow cylinder, with a 60 mm outside diameter, a 65 mm axis and 8 mm thickness, is resting on its base on the H.P. An A.I.P. inclined at  $30^{\circ}$  to the H.P., and passing through a point on the axis 12 mm from its top end, cuts the cylinder. Draw its sectional top view, sectional side view and true shape of the section. [15]

7. A horizontal triangular prism, with 60 mm edges at its base and 80 mm in length, completely penetrates a vertical cylinder 60 mm in diameter and 70 mm in length. Draw three views showing curves of intersection if a rectangular face of the prism is inclined at 45 degrees to the HP and if the two axes bisect each other while the plane containing the two axes is perpendicular to the VP. [15]

**OR**

8. A cylinder of diameter 50 mm and height 75 mm is resting on the ground on its flat end. It is cut by a sectional plane inclined at  $30^{\circ}$  to the axis of the cylinder and passing through a point on the axis at a height of 50 mm from the base. Draw the lateral surface of the bottom part. [15]

9. Draw the isometric projection of a square slab of side of base 60 mm and altitude 40 mm surmounting a hexagonal pyramid of side 30 mm and axis length 50 mm such that the axes of the two solids are collinear and at least one of the edges of the two sides are parallel. [15]

**OR**

10. A square prism, side of base 50 mm and height 70 mm rests with its base on the ground such that one of its rectangular faces is parallel to and 10 mm behind PP. The station point is 140 mm in front of PP, 80 mm above the ground plane and lies in a central plane which is 45 mm to the right of the center of the prism. Draw the perspective view of the solid. [15]

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