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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year Examinations, November/December – 2015
ENGINEERING DRAWING
(Common to CSE, BME, MIE, PTE)

Time: 3 hours   Max Marks: 75

Answer any five questions
All questions carry equal marks
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1.a)   Draw a rectangular hyperbola whose directices are 40 mm apart and locate its foci and vertices.

  b)   The actual length of 500 m is represented by a line of 15 cm on a drawing. Construct a vernier scale to read upto 600 m. Mark on the scale a length of 549 m.

[15]

OR

2.   Draw a hypocycloid when the diameter of the rolling circle is 30mm and that of the base circle 120mm. Draw a tangent and normal at any point on the curve. [15]

3.   The front view of a line PQ is 60 mm long and makes 45^0 with the reference line. The end P is 10 mm above the H.P. and the V.T. of the line is 15 mm below the H.P. If the line PQ is inclined at 30^0 to the V.P., draw its projections. Determine its true length, inclination with the H.P. and locate its traces.   [15]

OR

4.   A pentagonal lamina of sides 40 mm is resting with one of its corners on the VP and an edge opposite this corner makes an angle of 30^0 to the ground. The surface of the lamina itself is inclined at 45^0 to the VP. Draw the front and top views of the lamina.   [15]

5.   A pentagonal prism, having base with a 40 mm side and a 70 mm axis, is kept on its base on the H.P. such that a rectangular face perpendicular to V.P. Draw front view, sectional top view and true shape of the section when it is cut by an A.I.P. such that the true shape of section is trapezium with 40 mm and 50 mm parallel sides and a 60 mm altitude.   [15]

OR

6.   A square prism, having a base with a 40 mm side and a 60 mm axis, is resting on its base on the H.P. with a side perpendicular to the V.P. It is cut by an A. V.P. making 30^0 to the V.P. and contains the axis of the prism. Draw its top view, sectional front view and the 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 45^0 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 hexagonal prism of 20 mm base edge and 70 mm height is resting on its base on the ground with two adjacent faces being inclined equally to the VP. A hole of 20mm diameter is made through the object such that the axis of the hole is perpendicular to the axis of the object and bisects it. Draw the development of the lateral surface of the object.   [15]

9.   A paper weight consists of three portions. The bottom-most portion is a cylinder with a 80 mm diameter and 25 mm height. On it is situated the middle portion which is the frustum of a cone with a 80 mm base diameter, 50 mm top diameter and 40 mm height. The topmost portion is hemi-sphere with a 30 mm radius. Draw the isometric projection of the section.   [15]

OR

10.   A rectangular pyramid, with base measuring 40 mm $\times$ 25 mm and the axis 50 mm, rests with its base on the ground plane such that the longer base edge is parallel to the picture plane and 20 mm behind it. The station point is 65 mm in front of the picture plane, 35 mm to the left of the axis of the pyramid, and 65 mm above the ground plane. Draw the perspective view of the pyramid.   [15]

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