JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year Examinations, October/November - 2016
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) The major and minor axes of an ellipse are 140 mm and 90 mm respectively. Find the foci and draw the ellipse using arc of circle method. Draw tangent and normal to the curve at a point 40 mm above the major axis.

b) In a vernier scale the difference between 1VSD and 1MSD was found to be 1cm. RF is 1:100. The scale is to measure a distance of 9 m. Construct a scale and show on it a length of 3.09m. [7+8]

OR

2. A point P on the circumference of a circle touches the ground in the initial position. When the circle rolls in clockwise direction on a straight line through 270^0 the point P is 30 mm above the ground. Draw the cycloid of one and half revolutions of the circle. [15]

3. A line PQ, inclined at 30^0 to the H.P., has the end P at 20 mm above the H.P. and 10 mm in front of the V.P. The front view of the line is 70 mm long and inclined at 60^0 to the reference line. 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 square plane has one of its corners in the H.P. and its surface is perpendicular to the V.P. The top view of the plane appears as a rhombus with diagonals 70 mm and 40 mm long. Draw the projections of the plane and determine its inclination with the H.P. [15]

5. A triangular prism, having a base with a 50 mm side and a 75 mm long axis, is lying on one of its rectangular faces in H.P. with its axis perpendicular to the V.P. It is cut by a horizontal section plane such that the true shape of the section is a rectangle with 35 mm and 75 mm sides. Draw its front view and sectional top view. [15]

OR

6. A pentagonal prism, having a base with a 40 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]

7. A cone of base diameter 70 mm and height 100 mm rests on the HP on its base and is penetrated by a horizontal cylinder of diameter 45 mm. The axis of cylinder is 9 mm away from the axis of the cone and at a distance 30 mm above the base of the cone. Draw the projections of the solids showing the curve of intersection between the solids. [15]

OR

8. A fly starts moving along the surface from a point on the circumference of the base circle of 50 mm diameter of a cone of generator 75 mm long and moves around the cone and reaches the starting point. Trace the path traversed by the fly if it travels along the shortest possible route. [15]

9. A rectangular box without lid 100 × 60 × 35 mm (outside dimensions) made of material 5 mm thick has 20 mm square hole pierced through one of the larger faces. Draw the box in isometric projection. Assume the hole is piercing centrally on the larger face. [15]

OR

10. A cube on 5 mm edge lies with a face on the ground and an edge on the picture plane. All the vertical faces are equally inclined to PP. The SP is 80 mm from P and 60 mm from GP. The edge of the cube in contact with the picture plane is situated 10 mm to the right of the station point. Draw the perspective view of the cube. [15]

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