

R15

Code No: 121AG

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech I Year Examinations, August - 2018

ENGINEERING DRAWING

(Common to ECE, EIE, ETM)

Time: 3 hours

Max Marks: 75

Answer any five questions
All questions carry equal marks

- 1.a) Construct a diagonal scale to read metres, decimeters and centimeters, long enough to measure up to 6 meters. A line of length 1 cm on the map represents a distance of 0.5 metre. Calculate the R.F and indicate a distance of 242 cms on the scale.
- b) Construct an ellipse when the distance of its focus from its directrix is equal to 50mm and the eccentricity is $\frac{2}{3}$. Also draw a tangent and a normal to the ellipse. [5+10]

OR

- 2.a) Construct the path traced out by a point on a circular disc of radius 30mm rolls in a circular path of radius 100mm inside it. Also draw normal and tangent for the curve at any point on it.
- b) Draw an involute of a given hexagon of side equal to 20 mm. [10+5]

- 3.a) Draw the projection of points on a common reference line. Take 20mm distance between the projectors.
- i) Point A is 10 mm above HP and 25mm in front of VP.
ii) Point B is 10 mm above HP and on the VP.
iii) Point C is 25 mm below HP and 20 mm behind VP.
iv) Point D is 20 mm below HP and 20 mm in front of VP.
v) Point E is on both HP and VP.
- b) A straight line AB of length 65 mm inclined at 30° to both H.P and V.P. End A is in H.P and end B is in V.P. Draw its projections. [5+10]

OR

- 4.a) A straight line AB of 75 mm long is inclined at 30° to HP and 45° to VP. The end A is 15mm in front of VP and 20 mm above HP. Draw the projections of the line.
- b) A regular pentagonal lamina of 25 mm side has its VT parallel to and 20 mm above XY. One of its side is making an angle of 25° with vertical plane and the lamina is perpendicular to VP. Draw its projections. [7+8]

- 5.a) A square prism of side of base 40mm and axis 70 mm lies in such a way that all the edges of the base equally inclined to HP and the axis is 50 mm from VP. The axis is parallel to both HP and VP. Draw its projections.
- b) A hexagonal prism of side of base 25 mm and axis 60 mm rests on a corner of its base in HP with the axis of the prism inclined at 40° to HP and parallel to VP. Draw its projections. [7+8]

OR

6. A pentagonal prism, side of base 25mm and axis 50mm long, lies with one of its rectangular faces on HP and its axis is inclined at 30° to VP. A section plane perpendicular to HP and parallel to VP cuts the prism into two halves. Obtain its top and sectional front views. [15]

7. A cylinder of diameter 45mm penetrates fully into a cone of base diameter 75mm and altitude 100mm resting on its base on the HP. The axis of the cylinder intersects the axis of the cone at right angles at a distance of 25mm above the base of the cone. The axis of the cylinder is parallel to both the HP and the VP. Draw the curves of intersection of the solids. [15]

OR

8. A hexagonal pyramid of base side 30mm and height 65mm rests on its base on the ground with a base edge parallel to VP. It is cut by a plane perpendicular to VP, inclined at 55° to HP and meets the axis at 30mm from the base. Draw the lateral surface development. [15]

9. A hexagonal pyramid of base side 30mm and height 60mm rests on its base on the HP with two of its base edges perpendicular to the VP. It is cut by a plane perpendicular to the VP and inclined at 35° to the HP meeting the axis at a point 35 mm above the base of the pyramid. Draw the isometric view of the truncated pyramid. [15]

OR

10. A pentagonal pyramid of 30mm base side and axis height 40 mm is standing on its base on the ground plane with a base side parallel to and 25 mm behind PP. The central plane is 35 mm to the left of the apex and the station point is 40 mm in front of PP and 20 mm above the ground plane. Draw the perspective view of the pyramid. [15]

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