

Code No: 111AG

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech I Year Examinations, May - 2016

ENGINEERING DRAWING

(Common to ECE, EIE)

Time: 3 hours

Max Marks: 75

Answer any five questions

All questions carry equal marks

1.a) Draw a hyperbola having its two asymptotes inclined at  $70^\circ$  to each other and passing through a point P at a distance of 30 mm from one asymptote and 36 mm from the other. Draw a normal and a tangent at any convenient point.

b) Construct a vernier scale to show yards, the R.F. being  $\frac{1}{3300}$ . Show the distance representing 2 furlongs 99 yards. [7+8]

OR

2.a) Draw a hypocycloid if the diameter of the rolling circle is 36 mm and the diameter of the base circle is 108 mm. Draw a tangent and normal at any point on the curve.

b) A circle of 50 mm diameter rolls on a horizontal line for a half revolution and then on a vertical line for another half revolution. Draw the curve traced out by a point P on the circumference of the circle. [7+8]

3.a) A point A is 30 mm below H.P. and in the third quadrant. Its shortest distance from the reference line XY is 40. Draw the projections of the point and determine its distance from V.P.

b) A line AB of 80 mm long has its end A at 20 mm above H.P. and 15 mm in front of V.P. Its front view and top view measure 60 mm and 70 mm respectively. Draw the projections of the line and determine its inclinations with H.P. and V.P. [7+8]

OR

4. PQRS is a rhombus having diagonal PR = 60 mm and QS = 40 mm and they are perpendicular to each other. The plane of the rhombus is inclined with H.P. Such that its top view appears to be square. The top view of PR makes  $30^\circ$  with the V.P. Draw its projections and determine inclination of the plane with the H.P. [15]

5. Draw the projections of a cone, base 45 mm diameter and axis 50 mm long, when it is resting on the ground on a point on its base circle with (a) the axis making an angle of  $30^\circ$  with the H.P. and  $45^\circ$  with the V.P.; (b) the axis making an angle of  $30^\circ$  with the H.P. and its top view making  $45^\circ$  with the V.P. [7+8]

OR

6. A square prism, base 40 mm side, axis 80 mm long, has its base on the H.P. and its faces equally inclined to the V.P. It is cut by a plane, perpendicular to the V.P., inclined at  $60^\circ$  to the H.P. and passing through a point on the axis, 55 mm above the H.P. Draw its front view, sectional top view and another top view on an A.I.P. parallel to the section plane. [15]

7. Draw the development of the lateral surface of the truncated cone shown in figure 1. All dimensions are in mm. Sectional plane is perpendicular to V.P passing through a point 35 mm from the apex and making  $45^\circ$  angle with H.P. [15]

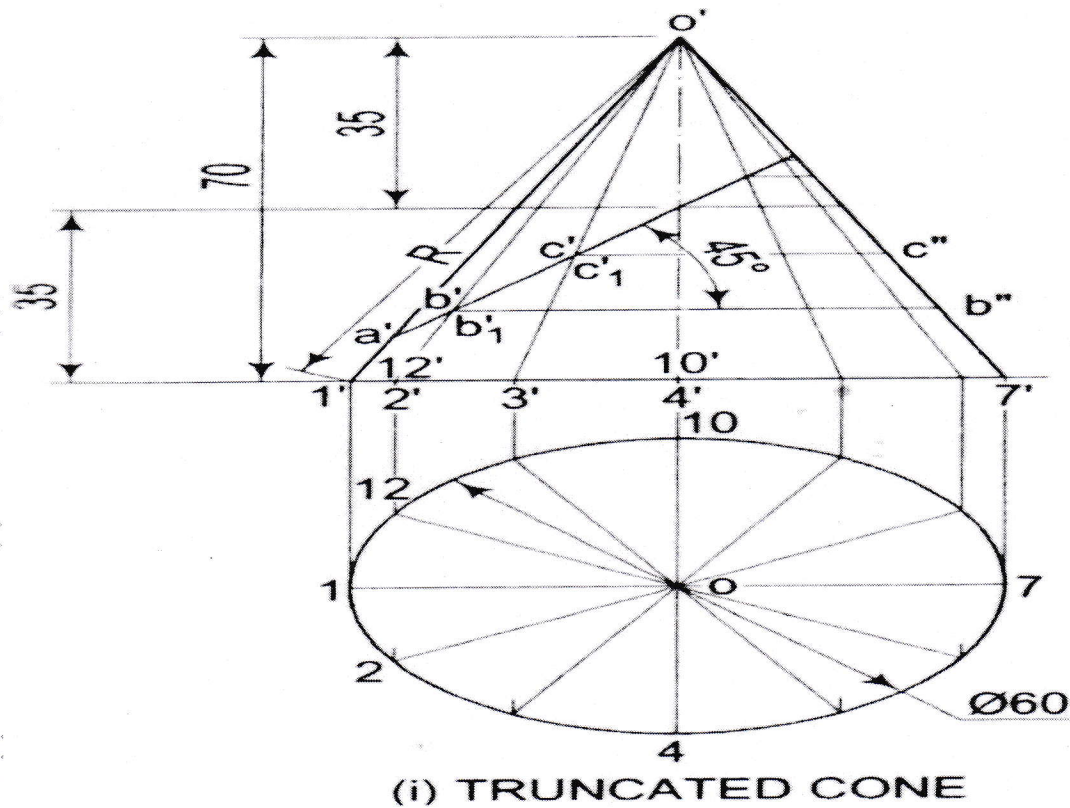


Figure: 1  
OR

8. A Cone of 70 mm base diameter and 100 mm height is resting on the ground on its curved face with its axis parallel to the VP. It is cut by an auxiliary inclined plane (AIP) inclined at  $30^\circ$  with the HP and passing through a point on the axis 15 mm from the base. Draw the projections if the apex is retained. Project the true shape of the section. [15]
9. Draw the a) Front view b) Side view from the left c) Top view as shown in figure 2. All dimensions are in mm. [5+5+5]

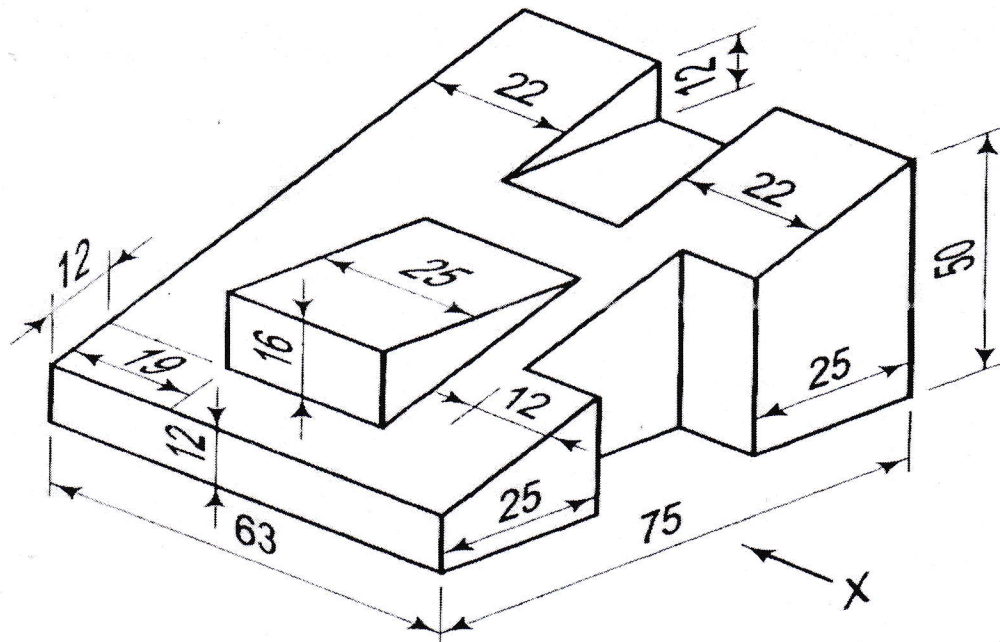


Figure: 2  
OR

10. Draw the isometric view of given casting as shown in figure 3. All dimensions are in mm. [15]

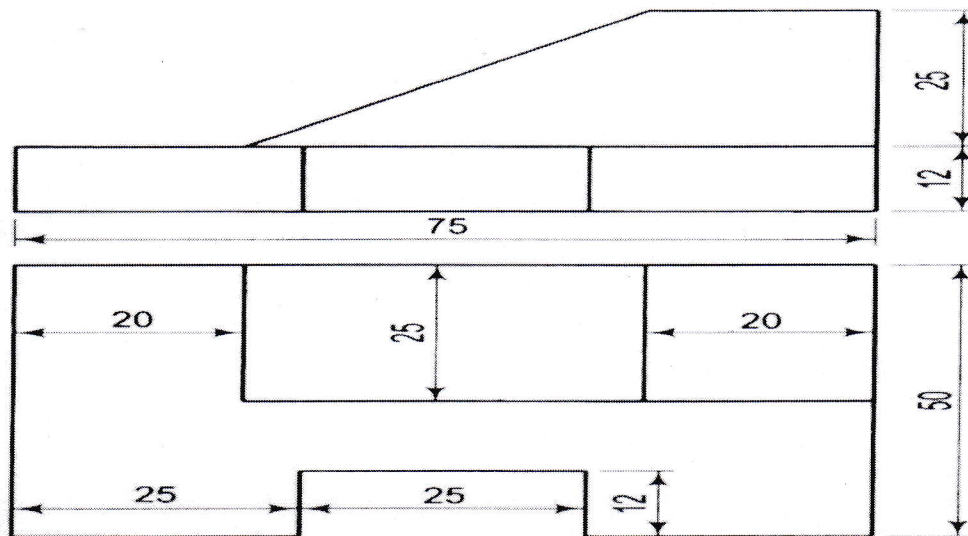


Figure: 3

---ooOoo---