

**R16**

Code No: 132AE

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech I Year II Semester Examinations, May - 2019****ENGINEERING GRAPHICS****(Common to EEE, ECE, EIE)****Time: 3 hours****Max. Marks: 75****Answer all five questions****All questions carry equal marks**

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- 1.a) Construct a diagonal scale of R.F. =  $(1/6250)$  to read up to 1 kilometre and to read meters on it. Show a length of 653 metres on it.
- b) Show by means of a drawing that when the diameter of the directing circle is twice that of the generating circle, the hypocycloid is a straight line. Take the diameter of the generating circle equal to 50 mm. [7+8]

**OR**

- 2.a) An inelastic string, 100 mm long, is wound around a disc of 40 mm diameter. Trace the path of free end of the string, and name the curve.
- b) Draw a vernier scale of R.F. = 5 to read  $(1/5)$  cm and  $(1/25)$  cm, and to measure up to 5 cm. Mark on the scale a distance of 2.12 cm. [8+7]

3. The end A of a line AB is in the H.P. and 25 mm behind the V.P. The end B is in the V.P. and 50 mm above the H.P. The distance between the end projectors is 75 mm. Draw the projections of AB and determine its true length, traces and inclinations with the two planes. [15]

**OR**

4. An isosceles triangle PQR having the base PQ 50 mm long and altitude 75 mm has its corners P, Q, and R 25 mm, 50 mm and 75 mm respectively above the ground. Draw its projections. [15]

5. Draw three views of a cone, base 50 mm diameter and axis 75 mm long, having one of its generators in the V.P. and inclined at  $30^\circ$  to the H.P., the apex being in the H.P. [15]

**OR**

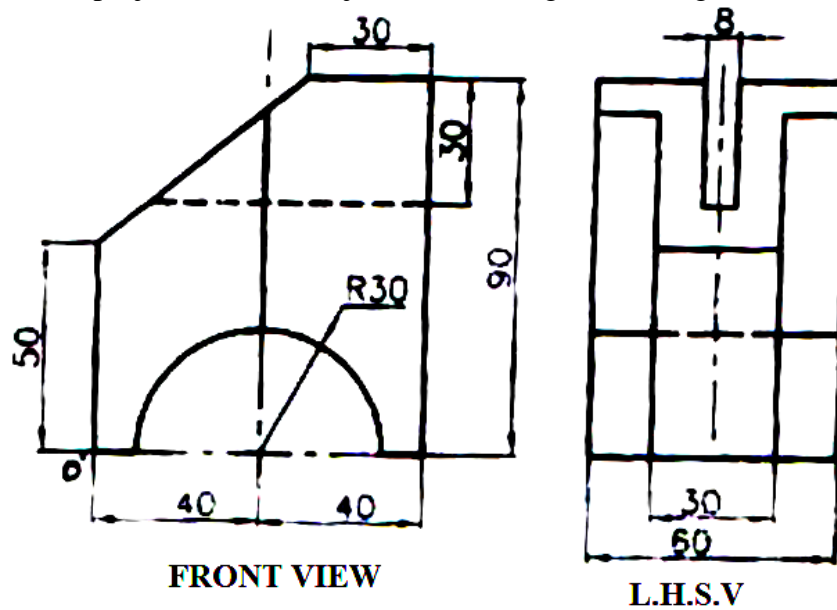
6. A square pyramid, base 40 mm side and axis 75 mm long is placed on the ground on one of its slant edges, so that the vertical plane passing through that edge and the axis makes an angle of  $30^\circ$  with the V.P. Draw its three views. [15]

7. A cylinder, 65 mm diameter and 90 mm long, has its axis parallel to the H.P. and inclined at  $30^\circ$  to the V.P. It is cut by a vertical section plane in such a way that the true shape of the section is an ellipse having the major axis 75 mm long. Draw its sectional front view and true shape of the section. [15]

**OR**

8. A pentagonal prism of 30 mm base edge and 70 mm height standing on its base is cut by a sectional plane inclined at  $45^\circ$  to HP which bisects its axis. Show the complete development of the truncated prism. [15]

9. Draw isometric projection of the object shown in figure 1, using natural scale. [15]

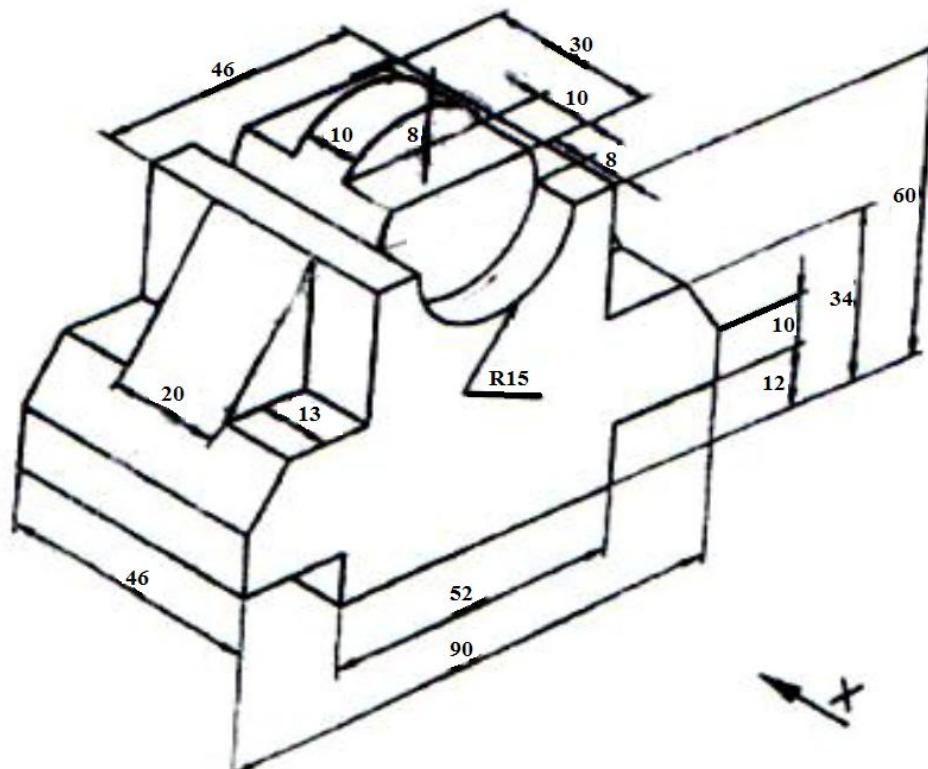


All dimensions are in mm

Figure: 1

OR

10. Figure 2 shows pictorial view of an object. Draw the (a) Front view, and (b) Top view. Dimension the views. (All dimensions are in mm) [15]



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