

R16**Code No: 132AE****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech I Year II Semester Examinations, May - 2019****ENGINEERING GRAPHICS****(Common to CSE, IT, ETM)****Time: 3 hours****Max. Marks: 75****Answer all five questions****All questions carry equal marks**

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- 1.a) Draw the curve traced by a point on the circumference of a circle of 40 mm diameter, which rolls on another circle of 160 mm diameter, for one complete revolution. Name the curve.
- b) An area of 144 sq.cm on a map represents an area of 36 sq.km on the field. Find the RF of the scale, and draw a diagonal scale to show kilometres, hectametres and decametres and to measure upto 10km. Mark a length of 7km, 5hm and 6dm on the scale. [8+7]

OR

- 2.a) One end of an inelastic string of length 200 mm is attached to the circumference of a ring of diameter 60 mm and is tightly wound around the ring. Draw the curve traced by the other end of the string when the string is unwound.
- b) The distance between two stations is 100 km and on a road map it is shown by 30 cm. Draw a diagonal scale and indicate distances of 56.8 km and 22.4 km on it. [8+7]

- 3.a) A 120 mm long straight line PQR, is inclined at 30° to the H.P. and 45° to the V.P. The point Q divides the line in the ratio of 1:3 and is situated 40 mm above the H.P. and 60 mm in front of the V.P. Draw its projections.
- b) 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 [8+7]

OR

- 4.a) A 90 mm long line PQ, lying in the first quadrant, has its end P in the H.P. and end Q in the V.P. The line is inclined at 45° to the H.P. and 30° to the V.P. Draw its projections.
- b) A circular lamina with a 60 mm diameter has its centre 40 mm above the H.P. and 30 mm in front of the V.P. The surface of the lamina is perpendicular to the H.P. and inclined at 45° to the V.P. Draw its projections. [8+7]

5. A pentagonal pyramid, having base with a 25 mm side and 60 mm long axis, rests on an edge of the base on the H.P. with axis perpendicular to the V.P. Draw its projections when the base is 15 mm in front of the V.P. [15]

OR

6. A square prism having base with a 45 mm side and 65 mm long axis has its axis parallel to and 55 mm in front of the V.P. An edge of its base is parallel to the H.P. and inclined at 30° to the V.P. Draw its projections. [15]

7. A cylinder, with a 50 mm diameter and a 70 mm long axis, is resting on its base on the H.P. It is cut by a section plane inclined at 45° to the H.P. and perpendicular to the V.P. such that the plane bisects the axis. Draw its front view, sectional top view and another top view on an A.I.P. parallel to the section plane. [15]

OR

8. A cylinder of diameter 50 mm and height 75 mm is resting on the ground on its flat end. It is cut by a sectional plane inclined at 30° to the axis of the cylinder and passing through a point on the axis at height of 50 mm from the base. Draw the lateral surface of the bottom part. [15]
9. Draw the elevation, top view and side view of the object shown in figure 1. All dimensions are in mm. [15]

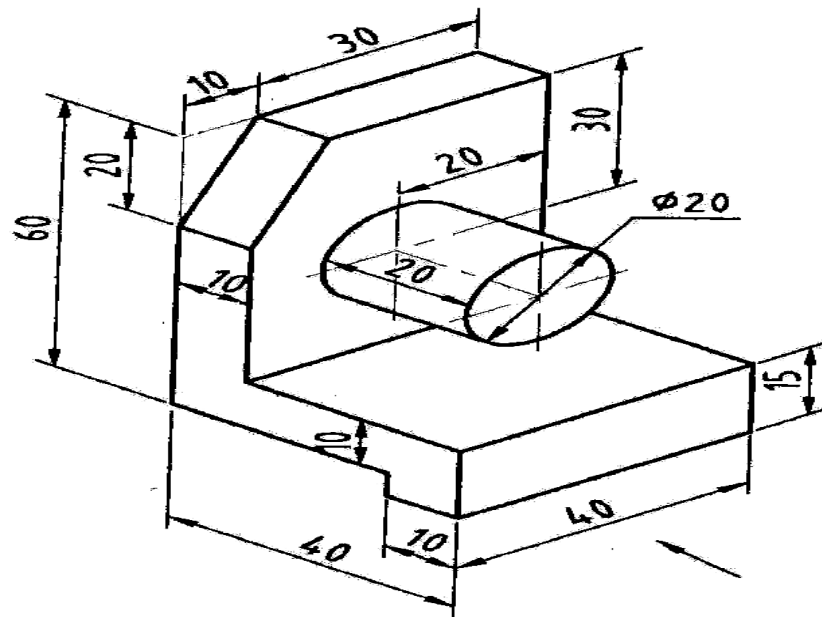


Figure: 1
OR

10. Draw the elevation, top view and side view of the object shown in figure 2. All dimensions are in mm. [15]

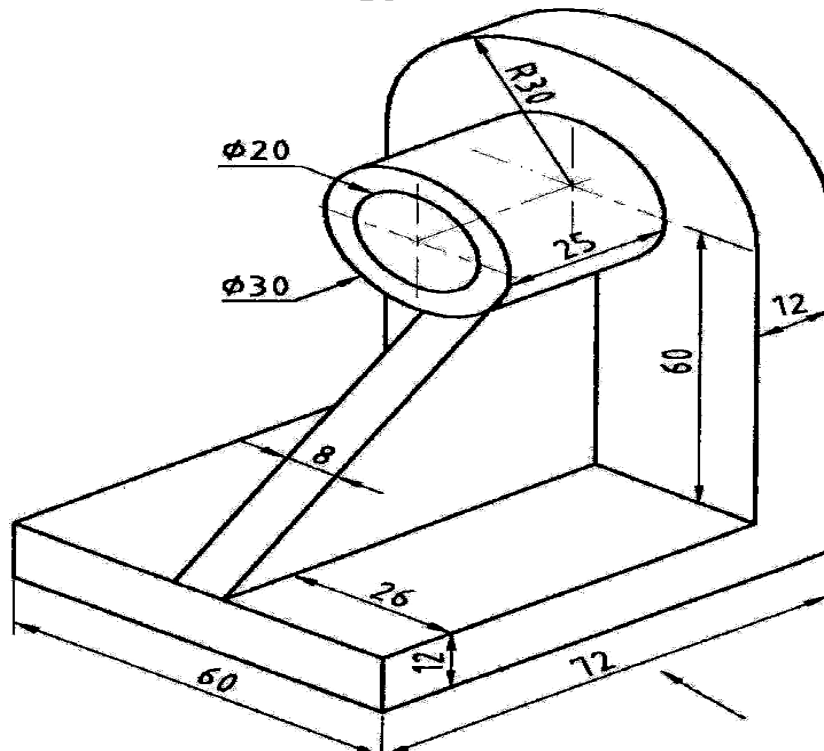


Figure: 2