15020

B. Tech 1st Semester Examination

Engineering Drawing & Graphics (NS)

BE-103

Time : 3 Hours   Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Section E is compulsory and must be written in ink. Attempt any four questions at least one each from sections A to D.

SECTION - A

1. Two points A and B are in the H.P. The point A is 30 mm in front of the V.P., while B is behind the V.P. The distance between their projectors is 75 mm and the line joining their top views makes an angle of 45° with xy. Find the distance of the point B from the V.P. (20)

2. A line AB, 75 mm long, is inclined at 45° to the H.P. and 30° to the V.P. Its end B is in the H.P and 40 mm in front of the V.P. Draw its projections and determine its traces. (20)

SECTION - B

3. A hexagonal pyramid, base 25 mm side and axis 50 mm long, has an edge of its base on the ground. Its axis is inclined at 30° to the ground and parallel to the VP. Draw its projections. (20)

4. A pentagonal prism, side of base 50 mm and length 100 mm has a rectangular face on the H.P and the axis parallel to the V.P. It is cut by a vertical section plane, the H.T of which makes and angle of 30º with xy and bisects the axis. Draw the sectional front view, top view and true shape of the section. Develop the surface of the remaining half of the prism. (20)

[P.T.O.]

SECTION - C

5. A cone of diameter 50 mm, height 70 mm has been cut by a plane inclined at 45° to H.P. Plane intersects axis at height of 45 mm above the base. Draw development of lateral surface of lower portion of cone. (20)

6. A vertical cylinder of 60 mm diameter is penetrated by a horizontal square prism, base 40 mm side, the axis of which is parallel to the V.P and 10 mm away from the axis of the cylinder. A face of the prism makes and angle of 30° with the H.P. Draw their projections, showing curves of intersection. (20)

SECTION - D

7. Draw isometric view of a cone, base 40 mm diameter and axis 55 mm long (i) when its axis is vertical (ii) when its axis is horizontal. (20)

8. Draw scale full size, (i) Front, (ii) Right hand side, (iii) Top views of the object shown below. The front view should be drawn as seen in the direction of the arrow X. (20)

Dimensions in mm
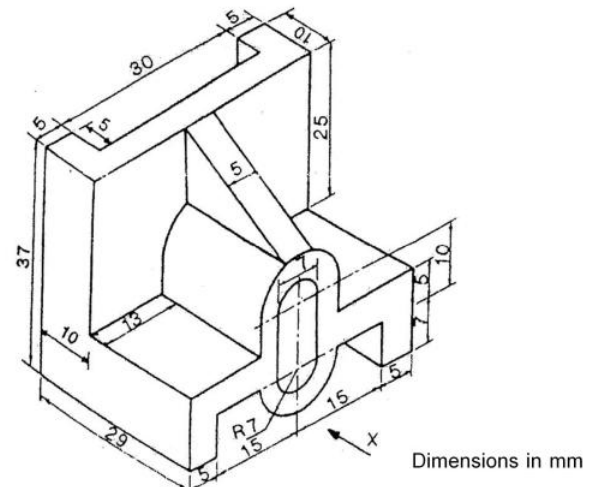
SECTION - E

9. Fill in the blanks in the following sentences using appropriate words.

    (i)   The extension line should extend about 3 mm beyond the_____.

    (ii) Drawings of buildings are drawn using _____.

    (iii) State the quadrant when the top view point P is 40 mm above xy, the front view 20 mm below the top view. _____

    (iv) Circular shapes appear in _____ fashion when viewed at an angle other than 90 degrees.

    (v)   Hidden lines are drawn as _____ lines.

    (vi) An angle can be set off and measured with the help of_____.

    (vii) The top, front, and bottom views align in _____ manner.

    (viii) A round is a rounded surface on the _____ corner of a part.

    (ix) An advantage of_____ type of view is that each view shows the object all the way through as if it were transparent.

    (x)   In an isometric projection, the included angle between the edges of a cube is _____ degrees.   (2×10=20)