

Time: 3 Hours

Max. Marks: 60

General Instructions:

1. Question number 1 is compulsory
2. Attempt any **three** questions from the remaining **five** questions.
3. All dimensions are in mm.
4. Use first angle method of projection.
5. Assume suitable dimension if it is necessary.

Q.1. Solve ANY ONE questions from following.

- a Draw the involute of a circle, 40 mm in diameter. Also, draw the tangent and normal at a point on the curve at a distance of 100 mm from the center of the circle. 09
- b A square lamina of 50 mm side rests on one of its corners on the HP, and the sides containing the corner make equal angle with HP. The surface of lamina makes 45° to the HP. Draw the TV and FV of the lamina. 06

OR

- a Fig 1 shows the two views of an object. Draw the isometric view assuming the origin as suitable corner. 08



Fig 1: FV and SV of an object

- b A hexagonal prism with a base side of 25 mm and an axis length of 70 mm is resting on the HP on one of its rectangular faces. Draw its projections when its axis is inclined to VP at 45° . 07

- Q.2. A Pentagonal pyramid of 35 mm side of base and 75 mm height is resting on the HP with one of its triangular surface perpendicular to the HP, and parallel and nearer to the VP. Draw the projections. 15

Q.3. Draw the sectional FV, TV and LHSV of an object shown in fig 2. Also give overall 15 dimensions.

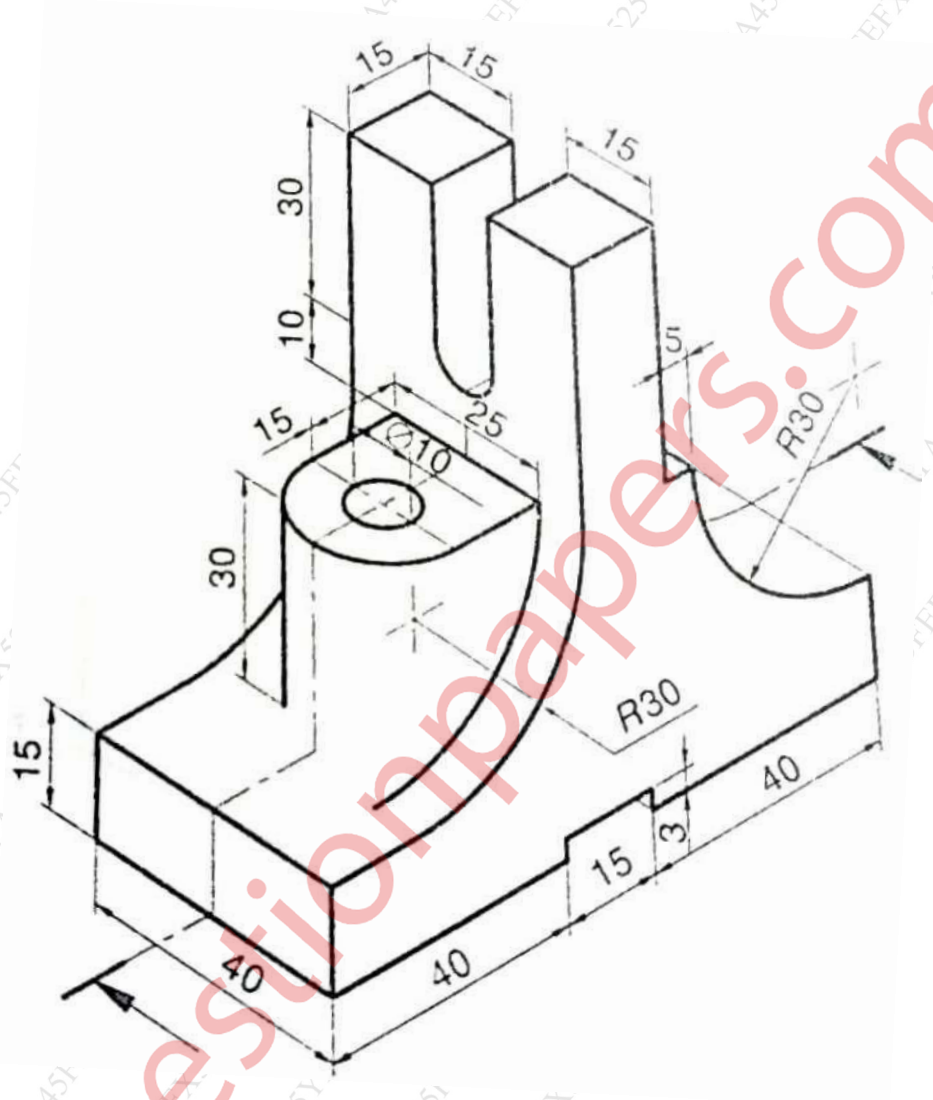


Fig 2 : Pictorial view of an object

Q.4 A tetrahedron of 55 mm long edges is lying on the H.P. on one of its faces with an edge of 15 mm that face perpendicular to the V.P. It is cut by a section plane perpendicular to the both H.P. and V.P. in such a way that the true shape of a section is an isosceles triangle of 36 mm height. Draw elevation, plan and end view when the major part of an object is assumed to be retained.

- Q.5. a. Fig 3 shows a pictorial view of an object. Using first angle projection, draw front view and top view. Give at least 10 dimensions. 09

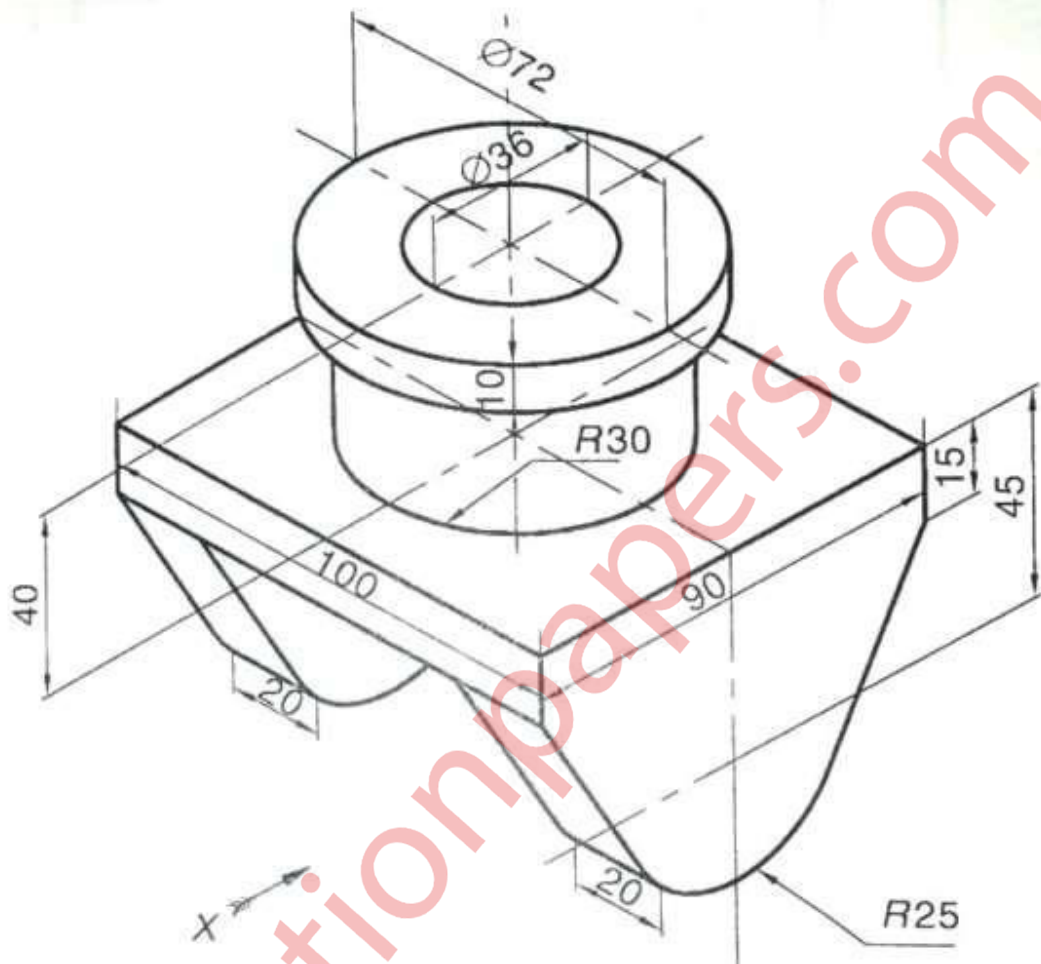


Fig 3 Pictorial view of an object

- b. Fig 4 shows FV and SV of an object. Draw isometric view. The origin may be assumed at a suitable corner. 06

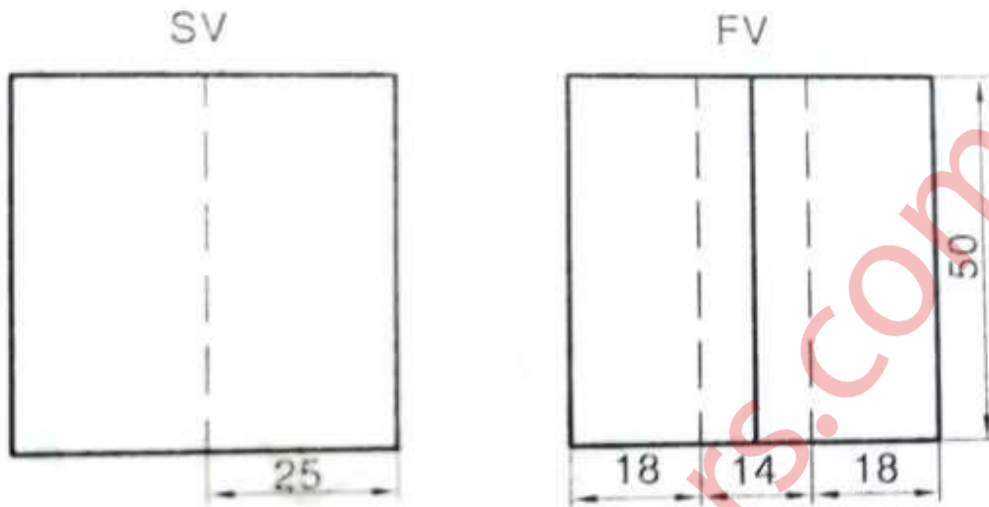


Fig 4 : FV and SV of an object

- Q.6 a. A straight-line PQ equally inclined to the VP and the HP, has its end P in front of the VP and 20 mm above the HP. End Q is behind VP and 10 mm below HP. Draw the projections, true length of line and inclination of line with HP, if distance between projections of the ends is 60 mm. 08
- b. A wheel of diameter 60 cm rolls on a straight horizontal line. Draw the locus of a point P 07
on the periphery of the wheel, for one revolution of the wheel, if P is initially on the road.