



17205

14115

4 Hours/100 Marks

Seat No.

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- Instructions:** (1) **All** questions are **compulsory**.
 (2) Figures to the **right** indicate **full** marks.
 (3) Assume suitable data, if **necessary**.
 (4) **Retain** all construction lines.

MARKS

1. a) A pictorial view of an object is shown in Fig. No. 1 Draw the following :
 a) Sectional front view in X direction along A-B. 6
 b) Top view. 4

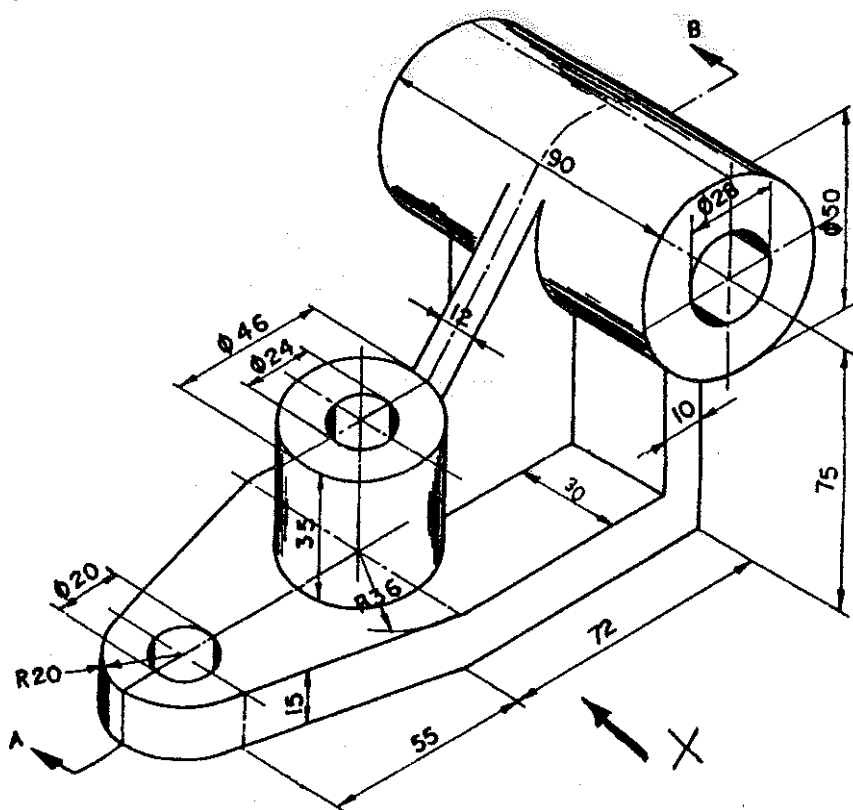


Fig. No. 1

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MARKS

b) Fig. No. 2 shows top view and front view of an object. Draw the following views of the object. Use first angle method of projection.

- | | |
|--------------------------------------|---|
| i) Front view. | 2 |
| ii) Side View (Right hand). | 4 |
| iii) Sectional top view Section A-A. | 4 |

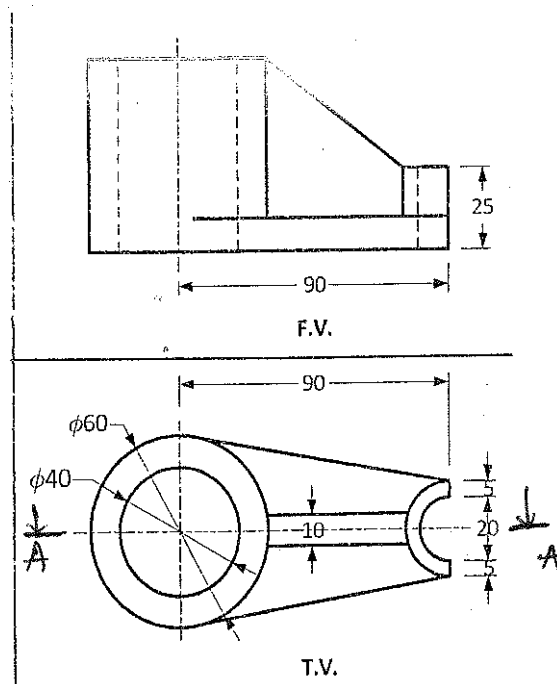


Fig. No. 2

2. a) The top view of a 75 mm long line AB measures 65 mm, while the length of its front view is 50 mm. Its one end A is in the H.P. and 12 mm in front of the V.P. Draw the projections of AB and determine its inclinations with H.P. and the V.P.

8

b) Solve **any one** :

8

- An isosceles triangle of base 30 mm and altitude 50 mm is having its base on H.P. Plane is perpendicular to V.P. and is inclined to H.P. in such a way that top view appears to be an equilateral triangle. Draw three views of the plane and find inclination of the plane with H.P.
- A rectangular lamina ABCD of smaller side AB = 30 and longer side BC = 50 mm is resting on the V.P. on its smaller side AB. Lamina is inclined to V.P. in such a way that its front appears to be a square. Side AB is perpendicular to H.P. Draw three views of the lamina and find its inclination with V.P.

**MARKS**

3. Attempt **any two** : **16**
- a) A cone of base 50 mm diameter and axis 65 mm long, lies with one of its generators on H.P. and its axis parallel to V.P. Draw its projections.
 - b) A square pyramid, side of base 30 mm and height 50 mm is resting on its base with one of the sides of the base perpendicular to V.P. It is cut by an auxiliary inclined plane at 45° to H.P. in such a way that it bisects the axis. Draw F.V., sectional top view and true shape of the section.
 - c) A pentagonal prism, side of base 25 mm and axis 65 mm long, rests with one of the edges of its base on H.P. Its axis is inclined 30° to H.P. and parallel to V.P. Draw its projections.
4. Attempt **any two** : **16**
- a) A cone base 60 mm diameter and axis 70 mm long, is resting on its base on H.P. It is cut by a section plane perpendicular to V.P. and parallel to and 16 mm away from one of its end generators. Draw front view, sectional top view and true shape of section.
 - b) A cylinder, base diameter 40 mm and axis length 60 mm is lying on the H.P. on its curved surface such that axis is parallel to V.P. It is cut by a section plane perpendicular to V.P. and inclined 30° to H.P. and cut the axis at a distance of 20 mm from one end. Draw the F.V., sectional T.V. and true shape of section.
 - c) A hexagonal pyramid, side of base 30 mm and axis 60 mm long, rests with its base on H.P. and one of the edges of its base is parallel to V.P. It is cut by a horizontal section plane at a distance of 38 mm above the base. Draw the front view and sectional T.V.
5. Attempt **any two** : **16**
- a) A cone, base 50 mm diameter and axis 60 mm long, rests with its base on H.P. A section plane perpendicular to V.P. and inclined at 45° to H.P. bisects the axis of the cone. Draw the development of the lateral surface of the remaining portion of the cone.
 - b) A bucket made of G.I. sheet has its top 25 cm diameter and bottom 16 cm diameter with a circular ring 5 cm wide at the bottom. The total height of the bucket is 32 cm. Develop the complete surface of the bucket.

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MARKS

- c) Draw the development of the lateral surface of the part P of the front view of a square prism shown in Fig. No. 3, all faces are equally inclined to the V.P.

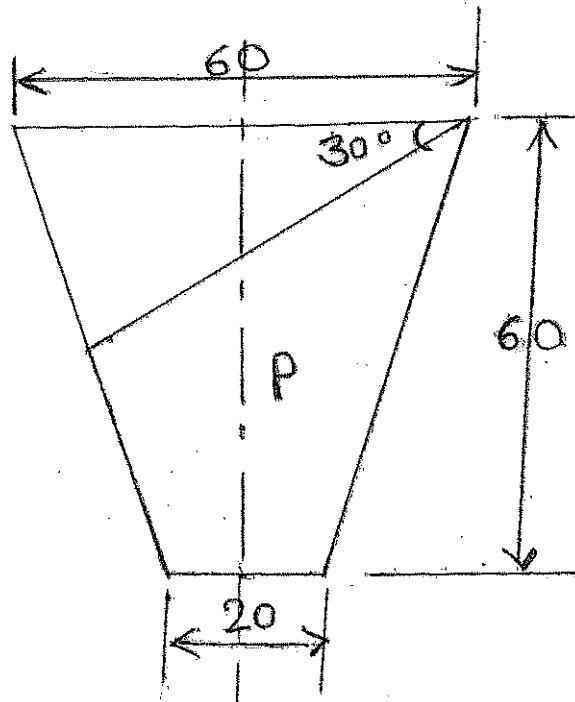


Fig. No. 3

6. Draw the neat and proportionate free hand sketches of **any four** of the following : **16**
- Single riveted lap joint
 - Flanged coupling
 - Fast and loose pulleys
 - Eye foundation bolt
 - Hexagonal nut.
