

22207

23242

4 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Solve any FIVE of the following :

10

- (a) Draw neat and proportionate free hand sketch of Eye Foundation bolt.
- (b) Draw the conventional representation of following materials :
 - (i) Glass
 - (ii) Liquid
- (c) Draw the neat and proportionate free hand sketches of single riveted lap joint and double riveted lap joint.
- (d) Draw the conventional representation of following welded joints :
 - (i) Square butt weld
 - (ii) Single V-Butt weld
- (e) Draw neat & proportionate free hand sketch of Muff coupling.
- (f) If a line is perpendicular to H.P. and Parallel to V.P., state whether the following statements are true or false :
 - (i) front view of a line shows true length
 - (ii) top view of a line is inclined to xy line
- (g) List the different types of sections in sectional orthographic views.



2. Solve any THREE of the following :**12**

- (a) Line 'AB' is 70 mm long. Its F.V. and T.V. measures 40 mm and 60 mm respectively. End 'A' is 15 mm above H.P. and 20 mm in front of VP. Draw projections of line 'AB'. Find angle made by line with H.P. & V.P.
- (b) A hexagonal lamina of 30 mm side rests in H.P. on one of its sides with the plane of hexagon inclined 30° to H.P. and side in H.P. perpendicular to V.P. Draw the projections.
- (c) Line 'CD', 80 mm long is inclined at 30° to the H.P. and 45° to the V.P. Its end 'C' 15 mm above H.P. and 25 mm in front of V.P. Draw its projections.
- (d) A circular plate of negligible thickness of 50 mm diameter has a point on its circumference in V.P. Its surface is perpendicular to H.P. & inclined to V.P. such that front view appears as an ellipse with minor axis 35 mm. Draw its projections & find the inclination of plane with V.P.
- (e) A square pyramid side of base 40 mm and axis length 60 mm is kept on the H.P. on its base with the side of base parallel to V.P. Draw projections of pyramid.

3. Solve any TWO of the following :**16**

- (a) A pentagonal pyramid having side of base 30 mm and axis 65 mm long is resting in H.P. on one of its base corners. Draw its projections, if slant edge containing that corner makes an angle of 45° to H.P. and its axis parallel to the V.P.
- (b) A cylinder of 50 mm diameter and 70 mm height has its axis vertical. It is cut by a section plane perpendicular to V.P. and inclined at 45° to H.P. and intersecting the axis 40 mm above the base. Draw (i) Front view (ii) Sectional Top view and (iii) True shape of the section.
- (c) A cylinder has base diameter 40 mm and axis 60 mm is kept on the V.P. on a point of its base circle such that its base makes an angle of 60° to V.P. with axis parallel to H.P. Draw projections of cylinder.

4. Solve any TWO of the following :

- (a) Figure 4.1 shows pictorial view of a machine component. Draw the following views :
 (i) Sectional F.V. looking in the direction of X (section B – B).
 (ii) Right hand side view.

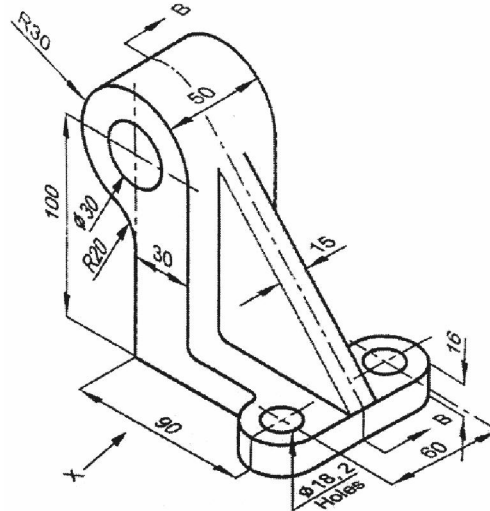


Figure 4.1

- (b) Figure 4.2 shows pictorial view of an object. Draw the following views :
 (i) Sectional F.V. looking in the direction of X (section A-A).
 (ii) Top View

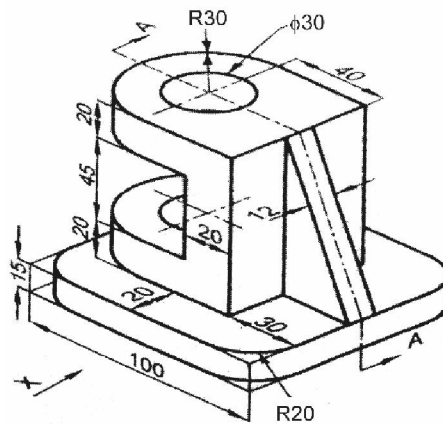


Figure 4.2

- (c) Figure 4.3 shows front view and right hand side view of a block. Draw the given views and project an auxiliary view in the direction of arrow 'M'.

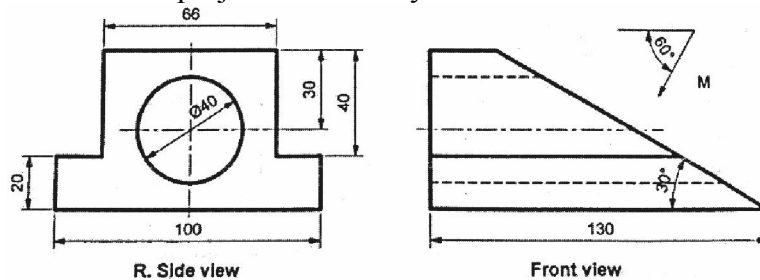


Figure 4.3

5. Solve any TWO of the following :

- (a) Figure 5.1 shows F.V. and T.V. of an object. Draw the following views :
 (i) Sectional F.V. (section along B-B).
 (ii) Given Top view
 (iii) L.H.S.V.

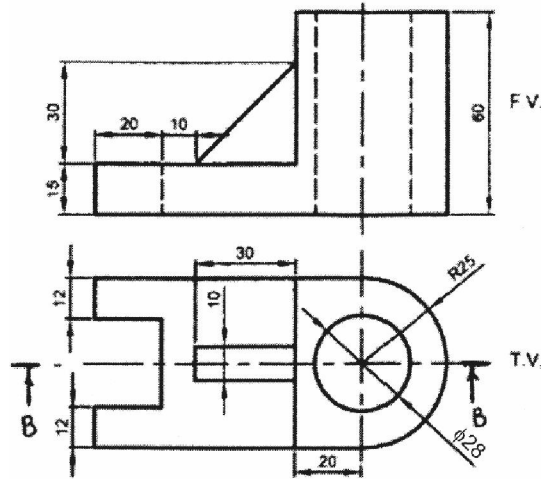


Figure 5.1

- (b) Figure 5.2 shows F.V. & T.V. of an object. Draw the following views :
 (i) Sectional F.V. section A-A
 (ii) Top view

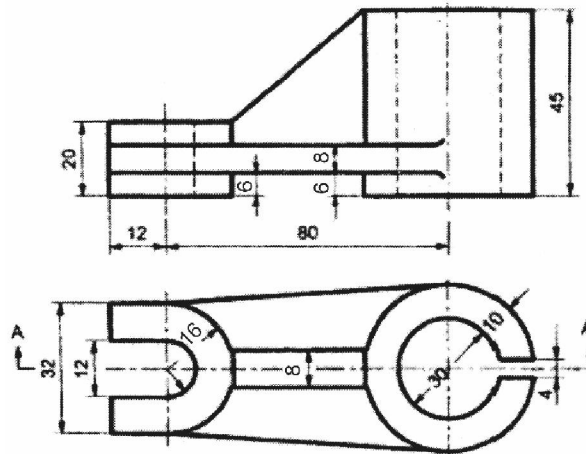


Figure 5.2

- (c) A right circular cone, 50 mm diameter and 70 mm height is resting on its base on H.P. It is cut by a section plane perpendicular to V.P. & inclined at 45° to H.P. The cutting plane cuts the axis at a point 30 mm from the apex. Draw (i) Front view (ii) Sectional Top view (iii) Sectional side view (iv) True shape of section.