

22207

**21819**

**4 Hours / 70 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) Use only H/2H grade pencils.
  - (5) Line work and cleanliness will be given due weightage.

**Marks**

**1. Solve any FIVE :**

**10**

- (a) Draw neat and proportionate freehand sketch of Rag foundation bolt.
- (b) Draw neat and proportionate freehand sketch of single rivetted (single strap) butt joint.
- (c) Draw neat and proportionate sketch of Muff coupling.
- (d) Draw the conventional representation of following material in section :
  - (i) Wood
  - (ii) Metal (steel)

- (e) Draw the conventional representation of following welded joint :
- (i) All round fillet weld
  - (ii) Single V-butt
- (f) When line is perpendicular to V.P., state whether following statements are true or false :
- (i) Front view shows true length
  - (ii) Top view shows true length
- (g) Explain removed section with simple sketch.

**2. Solve any THREE :**

**12**

- (a) Distance between end projectors A and B of line AB is 60 mm. End A of the line is 20 mm above H.P. and 40 mm in front of V.P. End B of the line is 50 mm above the H.P. and 40 mm in front of V.P. Draw the projection of line AB and find out inclination with H.P. and its true length.
- (b) A circular plate of diameter 60 mm is kept on the H.P. on a point of its circumference. The surface of circular plate make an angle of  $40^\circ$  to H.P. and perpendicular to V.P. Draw three views.
- (c) A pentagonal prism base 25 mm side and axis 60 mm long is standing on a corner of the base on H.P. with its axis inclined at  $45^\circ$  to H.P. and parallel to V.P. Draw the projections.

- (d) A  $30^\circ - 60^\circ$  set square ABC has side AB equal to 70 mm. It is resting on the H.P. with AB perpendicular to V.P. and plane of set square inclined at  $45^\circ$  to H.P. & parallel to V.P. Draw the projections.
- (e) A cone is lying on the H.P. on its curved surface with its axis parallel to V.P. What will be the top view of base ?
- (i) Circle
  - (ii) Square
  - (iii) Ellipse

**3. Solve any TWO :**

**16**

- (a) A right circular cone, base 50 mm diameter and axis 60 mm long, is resting on its apex on H.P. Draw the projection of cone, when the axis is parallel to V.P. and inclined at  $45^\circ$  to H.P.
- (b) A cylinder, base diameter 60 mm and axis length 80 mm is kept on the H.P. on its base. It is cut by section plane in such a way that the true shape of the section is the largest possible ellipse. Draw
- (i) Front view
  - (ii) Sectional Top view
  - (iii) True shape of the section.

**P.T.O.**

22207

[4 of 8]

(c) A square pyramid, side of base 30 mm and height 50 mm is resting on its base with one of the side of the base perpendicular to the V.P. It is cut by a section plane, inclined at  $45^\circ$  to the H.P. in such a way that it bisects the axis. Draw :

- (i) Front view
- (ii) Sectional Top view
- (iii) True shape of the section.

4. Solve any TWO :

16

(a) A pictorial view of an object is as shown in Fig. 1. Draw the following view :

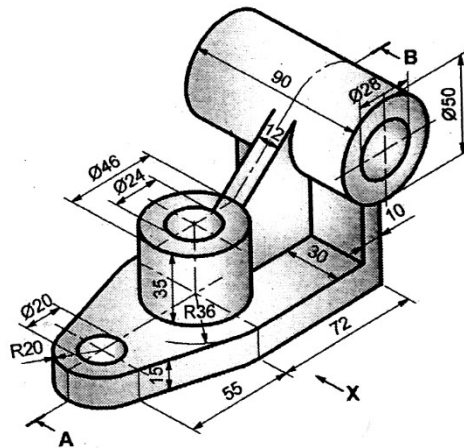


Fig. 1

- (i) Sectional Front View
- (ii) Top View

Use first angle method of projection.

(b) Fig. 2 shows pictorial view of an object. Draw :

- (i) Sectional Front View along section A-A.
- (ii) Top view.

Use first angle method of projection.

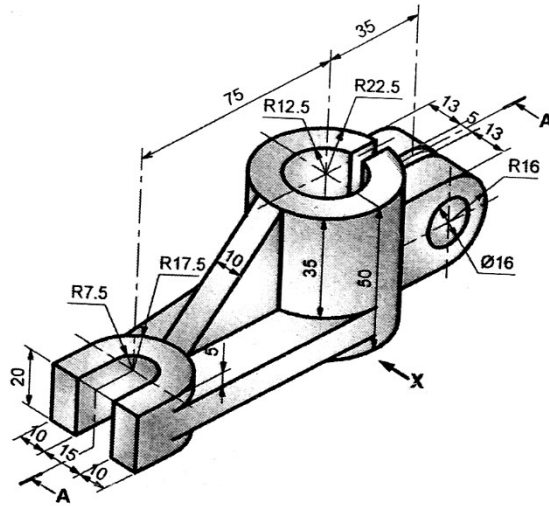


Fig. 2

(c) Fig. 3 shows Front View, auxiliary view and incomplete side view of an object. Redraw the given views and complete the side view.

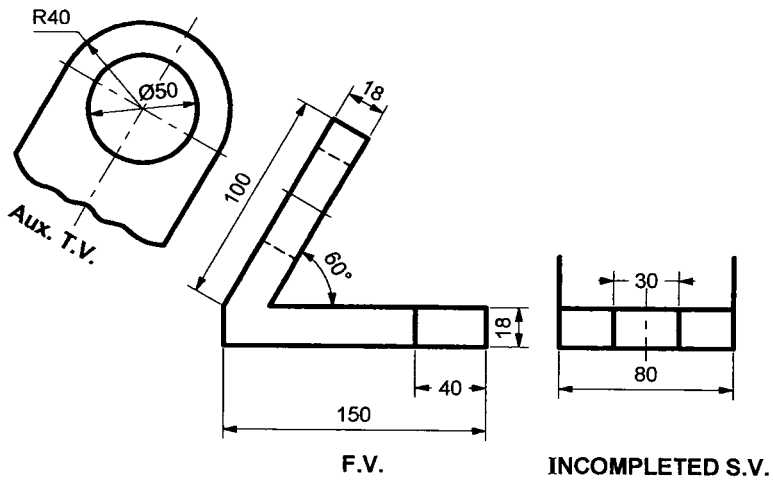


Fig. 3

5. Solve any TWO :

- (a) Fig. 4 shows Front and Top view of an object. Draw the following views using first angle method :

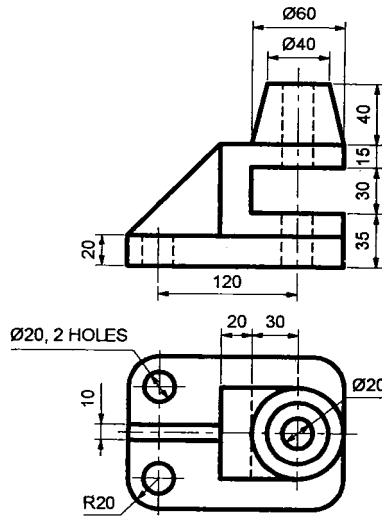


Fig. 4

- (i) Front View
  - (ii) Top view
  - (iii) Left hand side view
- (b) Fig. 5 shows front and top view of an object. Draw the following views of an object use first angle method :
- (i) Sectional Front View with section A-A.
  - (ii) Top view
  - (iii) Left hand side view

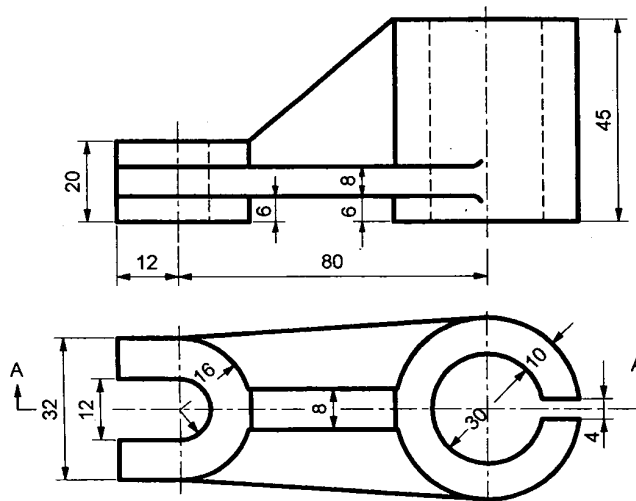


Fig. 5

- (c) Fig. 6 shows incomplete front view, top view and auxiliary view of an object. Draw the given views and complete Front view.

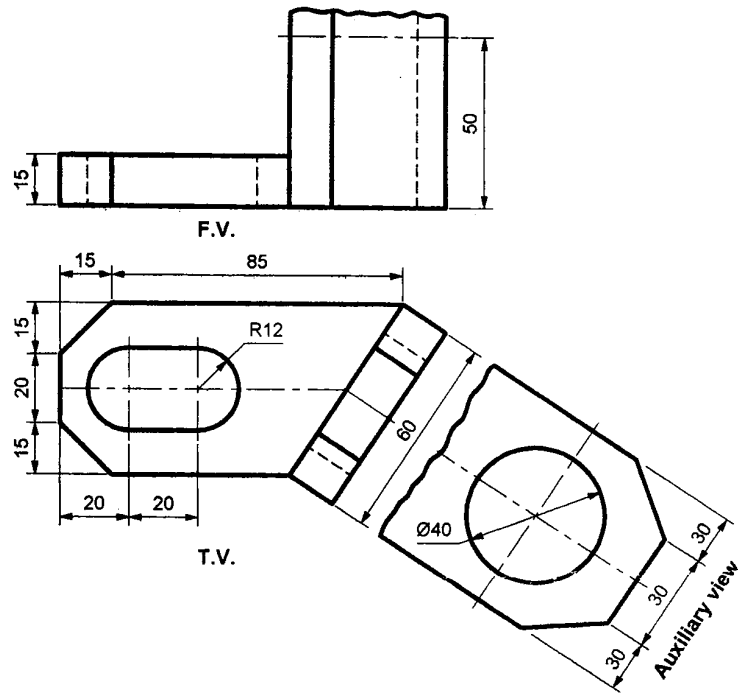


Fig. 6

