

# 312311

**12526**

**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. Attempt any TWO of the following :** **8**
- a) A line AB is 60 mm long inclined at  $45^\circ$  to the HP and  $30^\circ$  to the V.P. The end 'A' of the line is 15 mm above HP and 12 mm in front of the V.P. Draw the projections of line.
- b) A square plate ABCD of 50 mm side, rests on a corner 'A' on the HP, in such a way that, diagonal AC makes an angle of  $40^\circ$  with H.P. Draw three views of the plate, when diagonal BD is perpendicular to V.P.

P.T.O.

- c) A line AB 75 mm long is inclined at an angle of  $35^\circ$  to the VP. Its end point 'A' is 20 mm above the H.P. and 15 mm in front of the V.P. Plan length of the line is 50 mm. Draw the projections of line AB, assuming it to be in the first quadrant.

2. Attempt any TWO of the following :

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- a) A pentagonal plate 30 mm side, rests on HP on one of its corner and is inclined at  $40^\circ$  to the H.P. and perpendicular to the V.P. Draw the projections.
- b) Figure No. 1 shows isometric view of a machine component;  
Draw following views,  
i) Sectional F.V. looking in the direction of X  
ii) Top view.

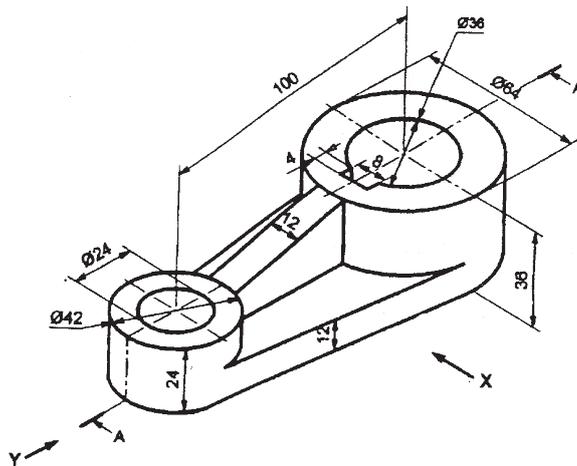
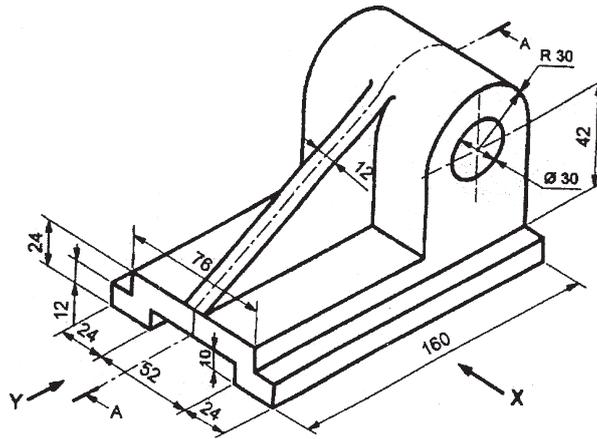


Fig. No. 1

- c) Figure No. 2, Shows isometric view of a machine component.  
Draw following views,
- Sectional F.V. looking in the direction of X.
  - Left Hand side view.



**Fig. No. 2**

3. **Attempt any THREE of the following :** **18**
- A square prism 35 mm side of base and axis length 60 mm such that all its lateral faces are equally inclined to V.P. Draw the projection of prism when axis of prism makes  $45^\circ$  angle with H.P. and parallel to V.P.
  - A cylinder of base diameter 40 mm and axis length 60 mm is kept on the HP on a point of its base circle, such that its axis is inclined to HP at  $30^\circ$  and parallel to V.P. Draw the projections of cylinder.
  - A vertical square prism side of base 50 mm and axis length 100 mm has its vertical faces equally inclined to the V.P. It is penetrated by another square prism of side of base 50 mm and axis 100 mm, so that its axis is parallel to the HP and VP and is 12 mm in front of the axis of vertical prism. The faces of the penetrating prism are equally inclined to H.P. Draw the projections of prism. Showing lines of intersections.

- d) A vertical cylinder of base diameter 55 mm, axis length 80 mm is horizontally penetrated by another cylinder of base diameter 45 mm and axis length 90 mm such that its axis is parallel to V.P. and bisects the axis of vertical cylinder. Draw the projections of solids showing curves of intersection.

4. Attempt any TWO of the following :

16

- a) Figure No. 3 show isometric view of a Machine component, Draw following views.
- Sectional front view, looking in the direction of X.
  - Top view.

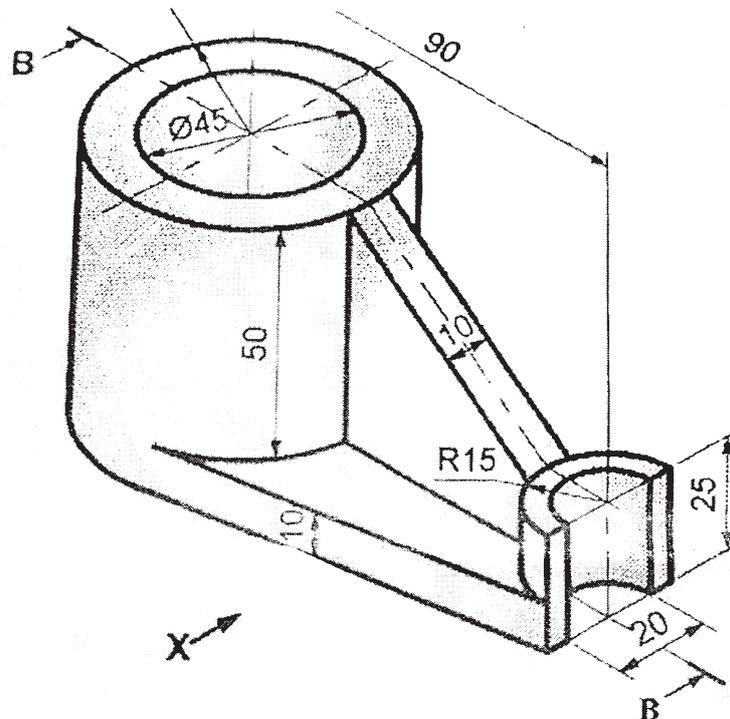


Fig. No. 3

- A cone base diameter 50 mm and axis 55 mm long is resting on HP on a point of its base. Draw its projections, if its base makes an angle of  $30^\circ$  to the H.P. and parallel to the V.P.
- A square pyramid, side of base 30 mm and axis length 50 mm, is kept on HP on its base with all sides of base equally inclined to VP. It is cut by an AIP inclined at  $45^\circ$  to HP and bisecting the axis. Draw the development of lateral surfaces of the Pyramid.

5. Attempt any TWO of the following :

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- a) A cone with a base diameter 80 mm and axis height 80 mm is kept on the HP on its base. It is penetrated by horizontal cylinder of diameter 35 mm with its axis parallel to V.P. and intersecting the axis of the cone at a distance of 30 mm above the base of the cone. Draw projections of the cone showing curves of intersections.
- b) Draw the development of lateral surface of the cylinder shown in Figure No. 4.

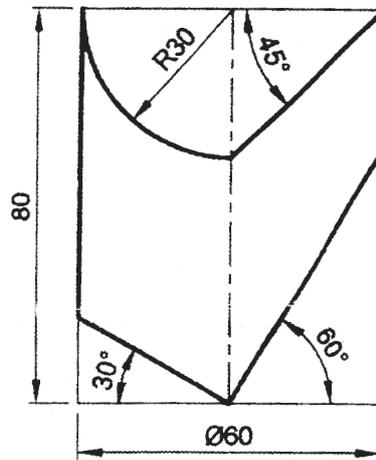


Fig. No. 4

- c) A cone of base diameter 70 mm and height 85 mm rests vertically with its base on the HP. A square hole of side 25 mm is cut through the cone. The axis of hole is 23 mm above the base perpendicular to VP and parallel to HP. The faces of square hole are equally inclined to HP. Draw development of the cone with the hole.