

17205

21415

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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) **A pictorial view of the object is shown in Figure No. 1. Draw the following views (Use First angle method)**
- (i) Sectional front view along A - A. **5**
- (ii) Top view **5**

P.T.O.

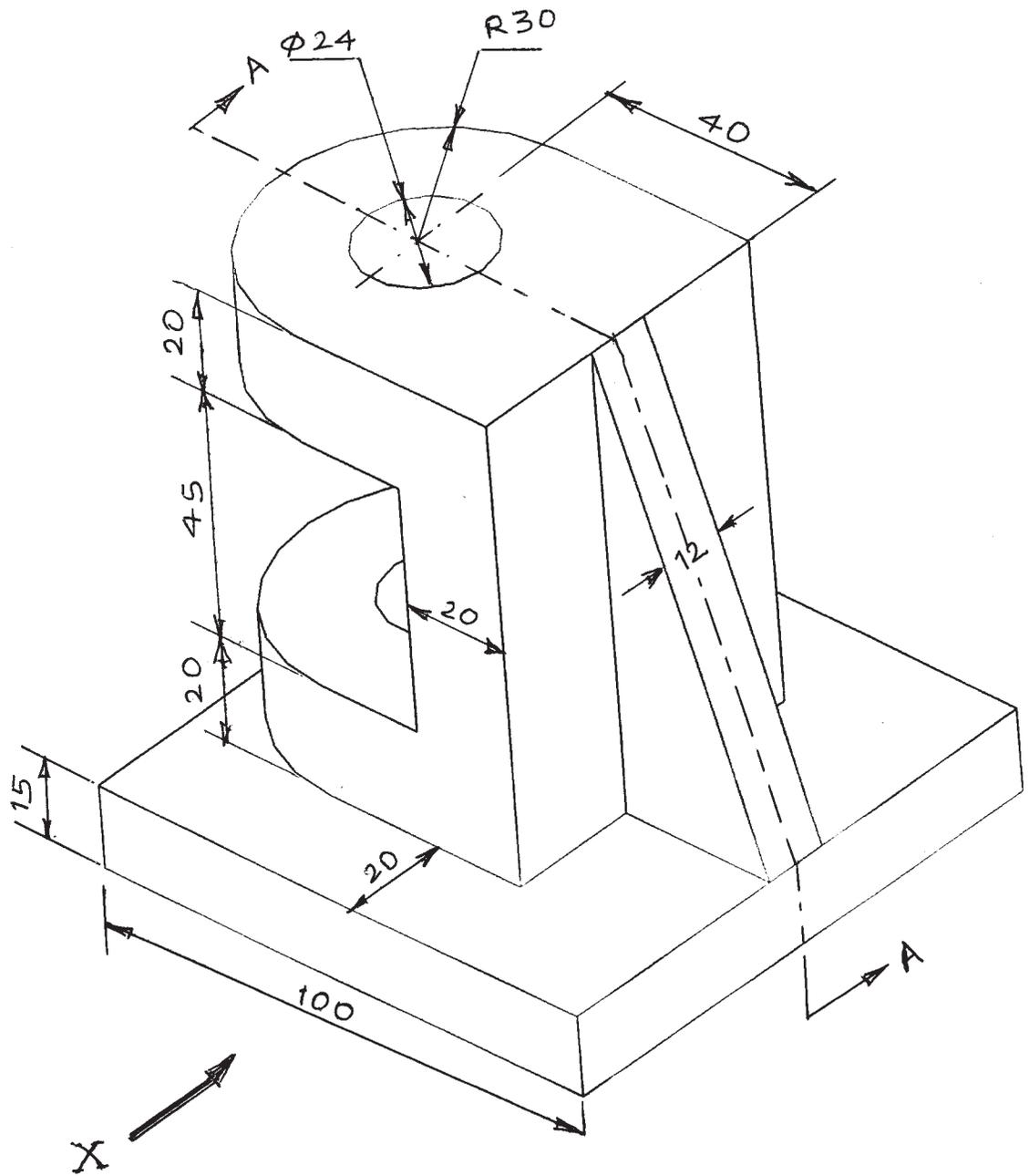


Fig. No. 1

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

- | | |
|---------------------------------|---|
| (i) Sectional front view A - A. | 4 |
| (ii) Top view | 2 |
| (iii) Right hand side view. | 4 |

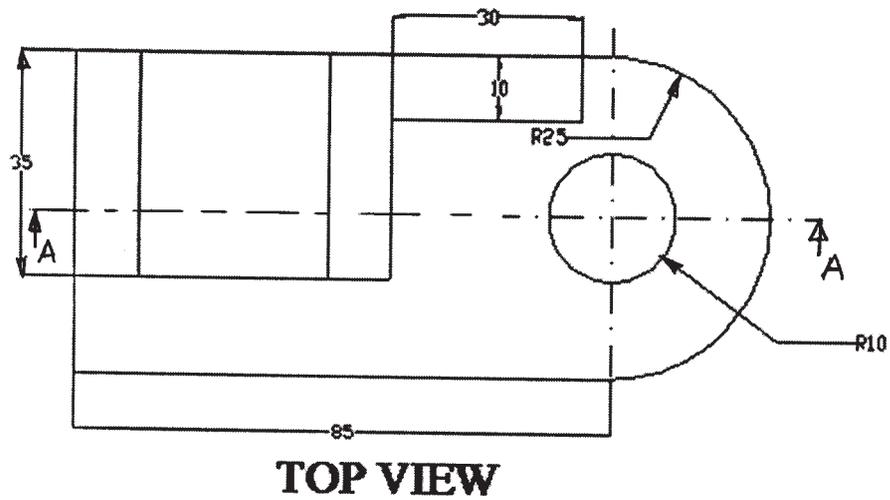
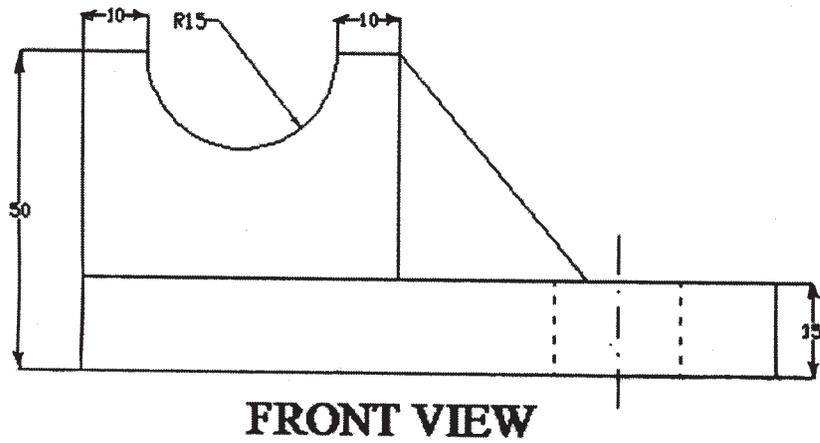


Fig. No. 2

2. Attempt any TWO of the following:**16**

- a) Line AB 90 mm long, has its end A 20 mm above HP and 25 mm in front of VP. The line is inclined at 30° HP and 45° to V.P. Draw the projections.
- b) A pentagonal plate 30 mm side rests on H.P. on one of its corners and is inclined at 40° to H.P. and perpendicular to V.P. Draw the projections.
- c) A circular plate of 60 mm diameter is inclined to H.P. such that top view appears to be ellipse of minor axis 35 mm. Draw the projection of plate and find its inclination to H.P. if it is perpendicular V.P.

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

- a) A hexagonal prism side of base 25 mm and axis 50 mm long rests with one of its base corner on H.P. Such that base makes an angle of 60° to H.P. and axis parallel to V.P. Draw the projections.
- b) Draw the projections of cone, base 30 mm diameter and axis 50 mm long resting on H.P. on a point of circumference of base circle. Axis inclined to H.P. at 45° and parallel to V.P.
- c) A pentagonal pyramid side of base 25 mm and axis 55 mm long, lies with one of its slant edges on H.P. axis parallel to V.P. Draw the projections.

4. Attempt any TWO of the following:**16**

- a) A hexagonal prism side of base 30 mm and axis 60 mm long rests on H.P. with its base and one of rectangular faces perpendicular to V.P. It is cut by a plane inclined at 45° to H.P. and perpendicular to V.P. passing through a point on axis at distance of 20 mm from top face. Draw the following views
- (i) Sectional top views. 2
 - (ii) Front view 2
 - (iii) True shape of section 4
- b) A pentagonal pyramid side of base 35 mm axis 60 mm long rest with its base on H.P. Edge of base perpendicular to V.P. A section plane perpendicular to H.P. and parallel to V.P. cuts the pyramid at a distance of 20 mm from the corner of base nearer to observer. Draw
- (i) Top view 3
 - (ii) Sectional front view 5
- c) A cone base 50 mm dia and axis 65 mm long rests with its base on H.P. It is cut by section plane which is inclined to H.P. at 45° and perpendicular to V.P. and passing through a point on axis 35 mm above base, Draw
- (i) Front view
 - (ii) Sectional top view
 - (iii) True shape of the section

5. Attempt any TWO of the following:

- a) A vertical chimney of 70 mm dia joins a roof at an angle of 35° with horizontal. The shortest portion over roof is 32 mm. Determine the shape of sheet metal from which chimney can be fabricated. 8
- b) A hexagonal prism edge of base 20 mm and axis 50 mm long rests with base on H.P. such that one of its rectangular faces is parallel to V.P. It is cut by plane inclined at 45° to H.P. and perpendicular to V.P. and passing from right corner of top face of prism. Draw
- (i) Front view, 2
- (ii) Top view 2
- (iii) Develop the lateral surface of prism. 4
- c) A pentagonal pyramid side of base 30 mm and axis 50 mm stands with its base on H.P. and an edge of base parallel to V.P. It is cut by a plane inclined at 40° to H.P. and perpendicular to V.P. Cutting plane passes through a point on axis 32 mm above base. Draw
- (i) Sectional top view 2
- (ii) Front View 2
- (iii) Develop lateral surface of pyramid. 4

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Marks

6. Draw neat and proportionate figure of any FOUR of the following:

16

- a) Withworth thread
- b) Hexagonal nut
- c) Hexagonal headed bolt
- d) Eye bolt
- e) Double riveted lap joint
- f) Rag foundation bolt.
