

**21718**

**4 Hours / 100 Marks**

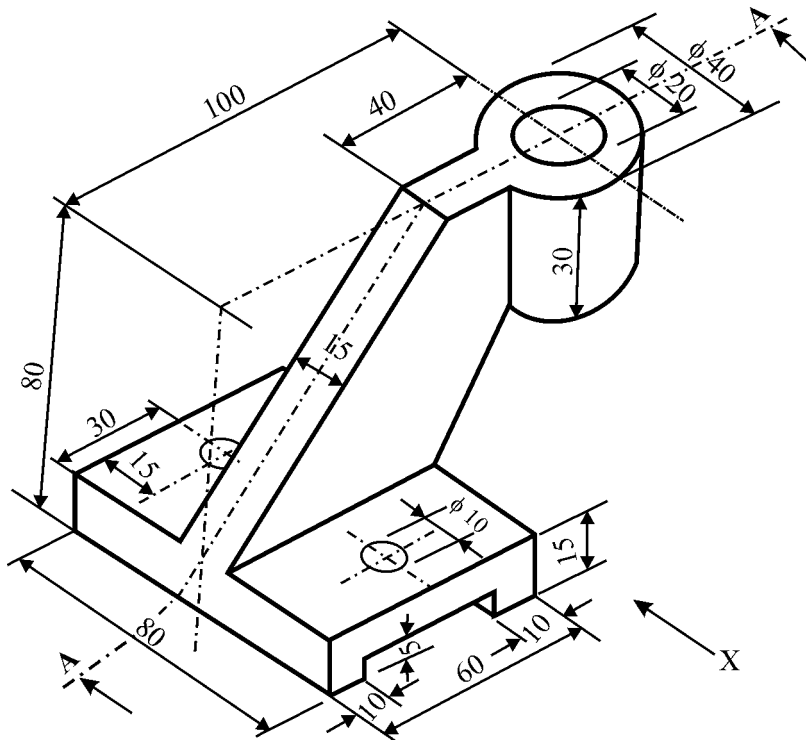
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- Instructions :**
- (1) All Questions are *compulsory*.
  - (2) Figures to the right indicate full marks.
  - (3) Assume suitable data, if necessary.

**Marks**

1. (a) A pictorial view of an object is shown in Fig. 1. Draw (using first angle method).
  - (i) Sectional front view in x-direction along the cutting plane. 6
  - (ii) Top view 4



**Figure 1.**

[1 of 4]

P.T.O.

(b) Fig. 2 shows F.V. and T.V. of an object.

(i) Redraw given F.V.

2

(ii) Redraw given T.V.

3

(iii) Draw side view from left use first angle method.

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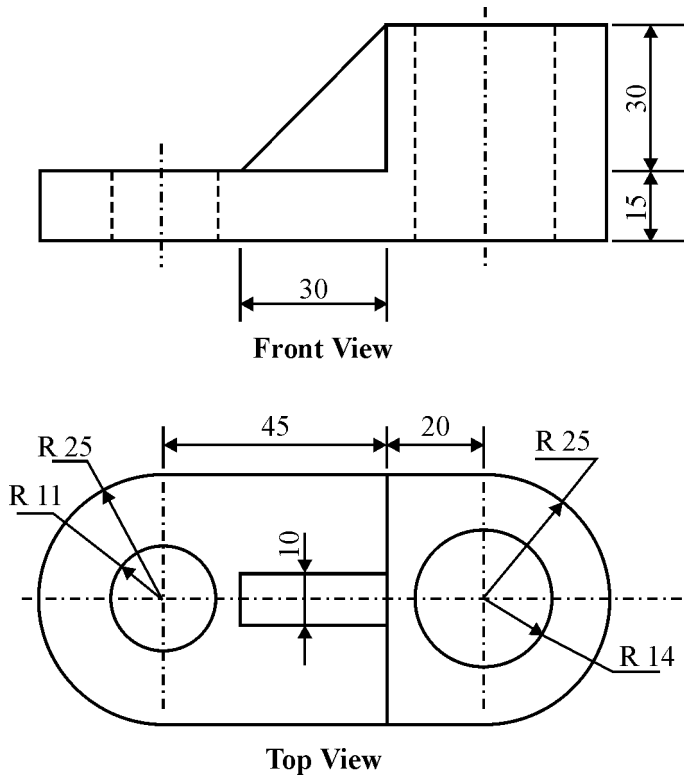


Figure 2.

2. (a) End P of line PQ is 25 mm above HP and is in VP. The length of line is 80 mm and it makes  $55^\circ$  to HP and  $30^\circ$  to VP. Draw its projections.

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(b) Solve any ONE :

8

(i) A hexagonal plate of side 30 mm has a corner in VP and its surface making  $40^\circ$  to VP and perpendicular to HP. Draw its three views.

(ii) An isosceles triangular plate is resting on its base on HP and perpendicular to VP. The base and height of triangular plate is 50 mm and 80 mm respectively. Draw projections if corner opposite to base is lifted by 25 mm above HP. Also draw side view.

**3. Attempt any TWO :** **16**

- (a) A pentagonal pyramid of base edge 30 mm & height 60 mm is resting on its slant edge in VP and axis parallel to HP. Draw the projections using first angle method.
- (b) A cone of base 50 mm diameter and axis length 65 mm is resting on its apex on HP. Axis of cone is parallel to VP and inclined  $45^\circ$  to HP. Use first angle method and draw projections.
- (c) A pentagonal prism of base edge 25 mm and axis 55 mm long is resting on its base corner on HP. The axis of prism is parallel to VP and makes  $60^\circ$  to HP. Use first angle method, draw its projections.

**4. Attempt any TWO :** **16**

- (a) A cone of base diameter 40 mm and axis 50 mm is resting on its base on HP. A cutting plane perpendicular to VP and inclined  $45^\circ$  to HP cuts the cone bisecting its axis. Draw
- (i) Front view **2**
- (ii) Sectional top view **3**
- (iii) True shape of section **3**
- (b) A square prism of base edge 40 mm and axis 100 mm long is resting on its base on HP with all base edges equally inclined to VP. A cutting plane inclined to HP and perpendicular to VP cuts the cone and passes through midpoint of axis. The cutting plane cuts the cone such that true shape appears a rhombus with longer diagonal 70 mm. Draw
- (i) Front view **2**
- (ii) Sectional top view **3**
- (iii) True shape of section **3**

- (c) A square pyramid of base edge 30 mm & height 50 mm is resting on HP on its base with all base edges equally inclined to VP. A cutting plane passes from the point on axis 20 mm from apex. The cutting plane is perpendicular to VP and inclined at  $45^\circ$  to HP. Draw
- (i) Front view 2
  - (ii) Sectional top view 3
  - (iii) True shape of section 3
- 5. Attempt any TWO :** **16**
- (a) A square prism of base side 40 mm and height 80 mm rests on HP with all faces equally inclined to VP. It is cut by a plane perpendicular to VP and  $60^\circ$  inclined to HP passing through a point on axis 55 mm from base. Draw development of lateral surface of the prism.
- (b) A cone of base diameter 60 mm and 70 mm long axis rests on HP on its base. It is cut by a section plane perpendicular to VP and inclined  $45^\circ$  to HP passing from a point on axis 35 mm from apex. Draw development of lateral surface of cone.
- (c) Develop lateral surface of  $90^\circ$  elbow. Each pipe diameter is  $\phi$  60 mm. Maximum length of each leg is 80 mm.
- 6. Draw neat & proportionate figure of any FOUR of the following :** **16**
- (a) Flange coupling
  - (b) Hexagonal Nut in two views
  - (c) Wing nut in two views
  - (d) Eye foundation bolt
  - (e) Stud
  - (f) Double rivetted lap joint
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