

# 17205

**15116**

**4 Hours / 100 Marks**

Seat No.

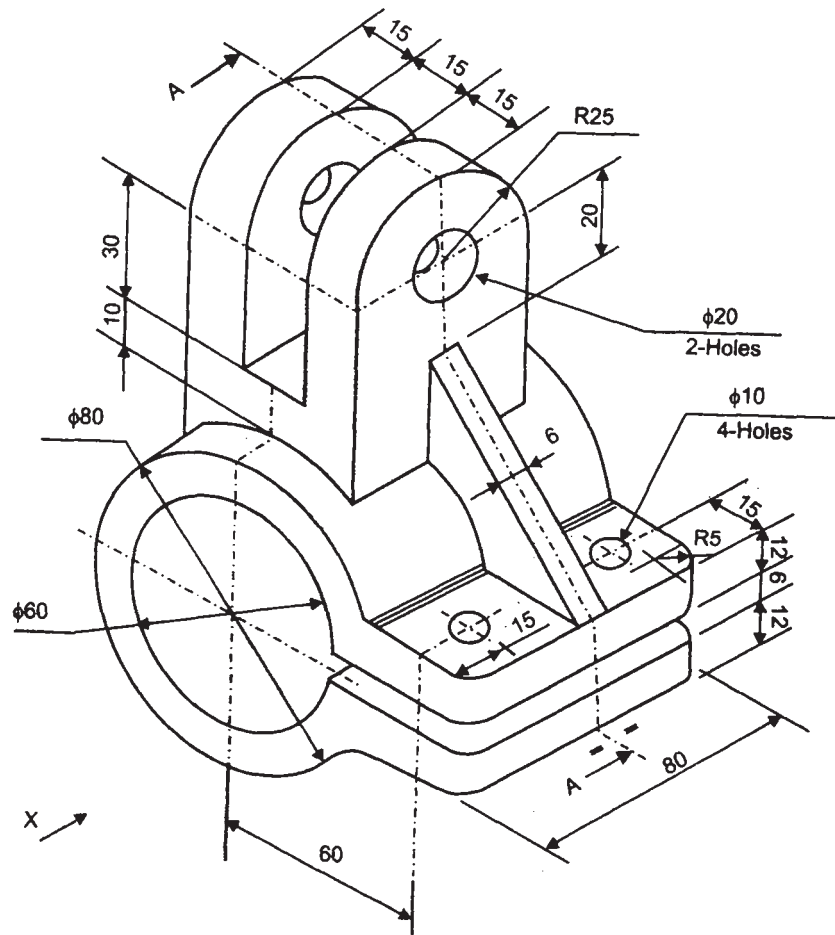
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- Instructions* –
- (1) All Questions are *Compulsory*.
  - (2) Figure to the right indicate full marks.
  - (3) Assume suitable data, if necessary.
  - (4) Use only H/2H grade Pencils.
  - (5) Line work and cleanliness will be given due weightage.
  - (6) Retain all construction lines and nomenclature.
  - (7) Use first angle method of projection.
  - (8) Use of Non-programmable Electronic Pocket Calculator is permissible.
  - (9) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

1. a) A pictorial view of an object is shown in Figure No. 1.  
Draw the following views:

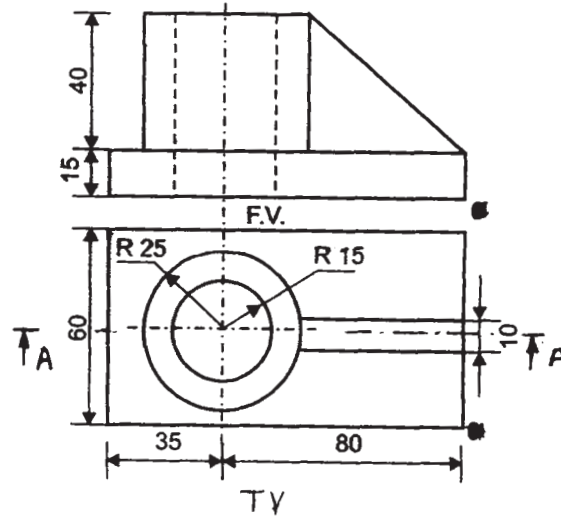
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**Fig. No. 1**

- |                                       |   |
|---------------------------------------|---|
| (i) Sectional front view, Section A-A | 5 |
| (ii) Top view                         | 5 |

- b) Figure No. 2, shows the front view and top view of an object.



**Fig. No. 2**

Draw the following views:

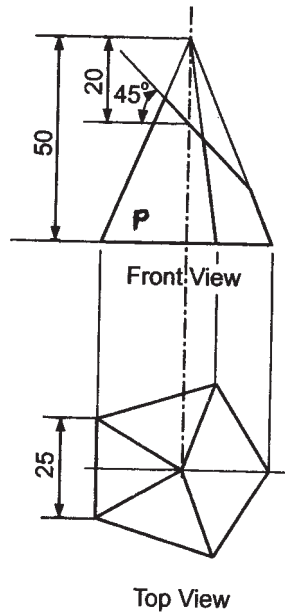
- |           |   |          |
|-----------|---|----------|
| (i)       | Front view, section-A-A   | 4        |
| (ii)      | Top view  | 2        |
| (iii)     | Right hand side view  | 4        |
| <b>2.</b> | <b>a)</b> Draw the projections of a line AB, 70 mm long having its end A in both H.P. and V.P. It is inclined at $45^\circ$ to H.P. and at $30^\circ$ to V.P.   | <b>8</b> |
|           | <b>b) Solve any <u>ONE</u> of the following:</b>  | <b>8</b> |
| (i)       | A circular plate of negligible thickness is resting on H.P. on one of its points on the circumference. It is inclined at $45^\circ$ to H.P. and perpendicular to V.P. The diameter of plate is 50 mm. Draw its three views. |          |
| (ii)      | A hexagonal lamina of side 30 mm has one side in V.P. It is perpendicular to H.P. and inclined at $60^\circ$ to V.P. Two sides of the lamina are perpendicular to H.P. Draw its three views.                                |          |

- 3. Solve any TWO of the following:** **16**
- a) A cone 70 mm base diameter and 85 mm length of axis has its base parallel to V.P. and the axis parallel to H.P. Draw its projections when the axis makes an angle of  $45^\circ$  with V.P.
  - b) A pentagonal prism, base 25 mm side and axis 55 mm long is resting on one of its rectangular faces on H.P., with the axis inclined at  $30^\circ$  to V.P. Draw its projections.
  - c) A cylinder, 60 mm base diameter and 75 mm length of axis is lying on its curved surface on the H.P. Draw its projections when the axis is inclined at  $60^\circ$  to V.P.
- 4. Solve any TWO of the following:** **16**
- a) A right circular cylinder of base diameter 50 mm and axis 80 mm long is resting on its base on H.P. It is cut by a section plane inclined at  $60^\circ$  to H.P. and perpendicular to V.P., bisecting the axis. Draw:
    - (i) Front view **2**
    - (ii) Sectional top view **2**
    - (iii) True shape of section **4**
  - b) A pentagonal pyramid, base edge 30 mm and slant edge 60 mm is resting on its base on the H.P., with one side of the slant edge parallel to V.P. It is cut by an inclined plane perpendicular to V.P. and at an angle  $60^\circ$  to H.P., bisecting the axis. Draw:
    - (i) Front view **2**
    - (ii) Sectional top view **4**
    - (iii) True shape of section **2**

- c) A cube 50 mm side, is resting on one of its square surfaces on the H.P. with the base edge inclined at  $30^\circ$  to V.P. It is cut by a plane inclined at  $45^\circ$  to H.P. and perpendicular to V.P. and passing through the top end of the axis. Draw:
- |                             |   |
|-----------------------------|---|
| (i) Elevation               | 2 |
| (ii) Sectional plan         | 4 |
| (iii) True shape of section | 2 |

5. Solve any TWO of the following: 16

- a) A cone of base diameter 50 mm and axis 60 mm long is resting on its base on H.P. It is cut by a cutting plane perpendicular to V.P. and inclined at  $30^\circ$  to H.P., bisecting the axis. Draw the development of lower part of the cone.
- b) Draw the development of lateral surface of a cylinder having 60 mm diameter and axis 90 mm long. A square hole of 25 mm side is drilled in the cylinder having axis perpendicular to V.P. and all sides of hole equally inclined to H.P. The center of the hole is 45 mm above H.P. on the axis of cylinder.
- c) Draw the development of the part 'P' of the pentagonal pyramid shown in the Figure No. 3.



**Fig. No. 3**

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[ 6 ]

**Marks**

**6. Draw the neat and proportionate free hand sketches of any FOUR of the following:**

**16**

- a) Acme thread profile.
  - b) Square headed bolt
  - c) Wing nut
  - d) Locking by split pin
  - e) Eye foundation bolt
  - f) Single riveted lap joint
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