

(3 Hours)

Marks : 60

**Instructions:**

1. Question no 1 is compulsory.
2. Answer any three questions from the remaining five.
3. All dimensions are in millimeters.
4. Retain all construction lines.
5. Use scale 1:1 only.
6. Figures to the right indicate full marks.
7. Use first angle method of projection only.
8. Assume suitable additional data, if necessary and mention it clearly.

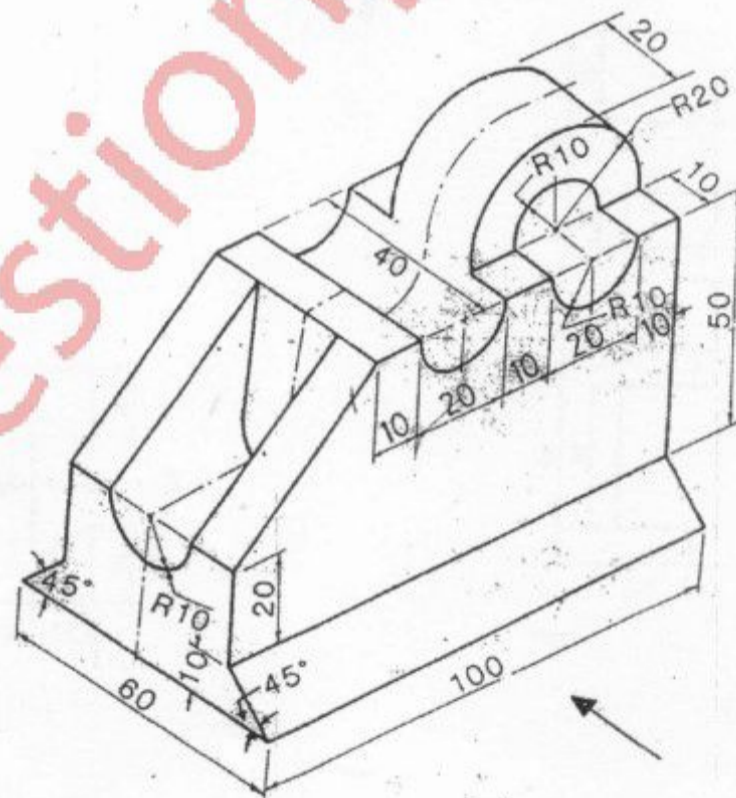


**Q1 a)** A circle of diameter 60 mm rolls without slipping on a vertical surface for half revolution and then on a horizontal surface for remaining half revolution. Draw the locus of a point "P" which is initially in contact with wall. Name the curve. 6

**b)** Figure given below shows pictorial view of an object. Draw the following views-

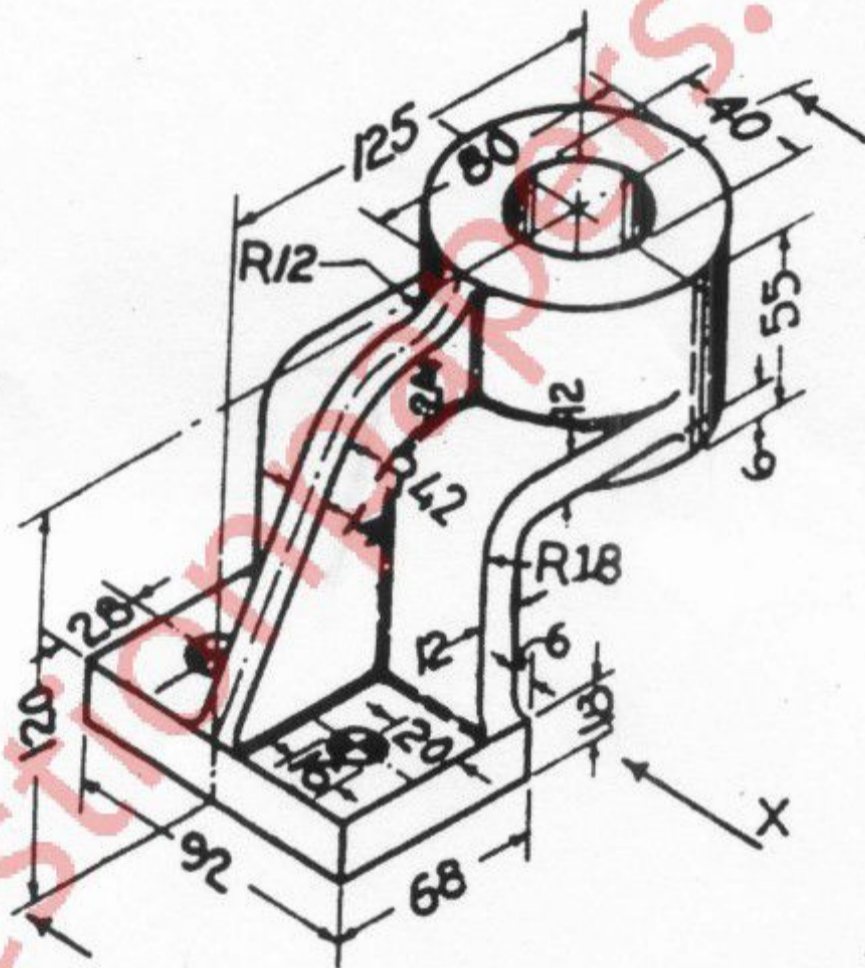
Front view 5

Top view 4



Q2 Figure below shows pictorial view of an object. Draw the following views-

- Sectional Front view 5
- Top view 4
- Side view from left 4
- Give 10 major dimensions 2



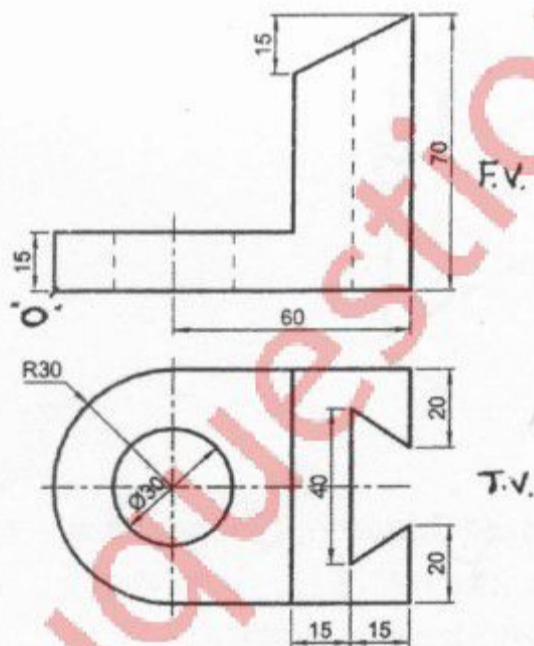
Q3 A hexagonal pyramid, base 25 mm side and axis 55mm long, has one of its slant edges on the H P. A vertical plane containing that edge and axis is inclined at  $45^\circ$  to VP. Draw its projections when the apex is nearer the VP.  
(Stage 1: 3 marks, stage 2: 5 marks, stage 3: 7 marks)

**Q4** A pentagonal pyramid side of base 30 mm, axis 60mm is resting on its base on HP with one edge of base parallel to VP and nearer to VP. A vertical section plane inclined at  $45^\circ$  to VP cuts the pyramid at a distance of 9 mm from the axis. Draw

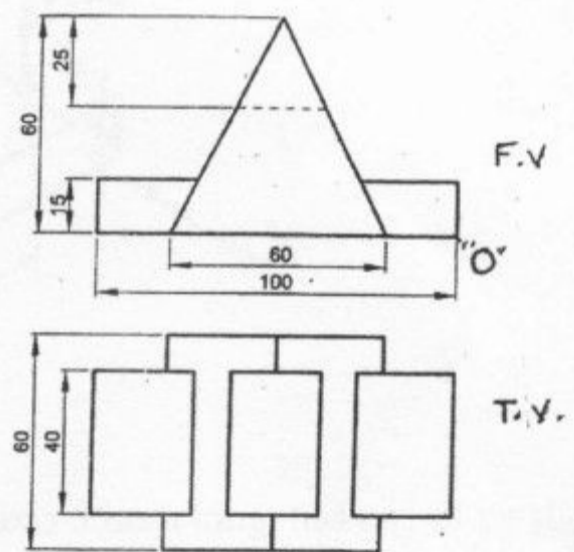
- |   |   |
|---|---|
| Sectional front view  | 3 |
| Top view  | 3 |
| True shape of section   | 3 |
| and development of lateral surface of retained part of the pyramid. | 6 |

**Q5 a)** draw the projections of a cylinder 60 mm diameter and 70 mm long, lying on HP on its curved surface with its axis inclined at  $30^\circ$  to VP. (and parallel to HP) (Stage 1: 2 marks, Stage 2: 4 marks)

**b)** The front view and top view of an object are shown in figure below. Draw its isometric view.



Q.5 (b)



Q.6 (b)

- Q6 a)** The top view of a 75 m long line AB measures 65 mm, while the length of its front view is 50 mm. It's one end A is in the HP and 12 mm in front of VP. Draw its projections and determine its inclinations with HP and VP. **8**
- b)** The front view and top view of an object are shown in figure above. Draw its isometric view. **7**

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