



[4161] – 106

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| Seat No. | |
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F.E. (Semester – I) Examination, 2012
ENGINEERING GRAPHICS
(2008 Pattern)

Time : 4 Hours

Max. Marks : 100

Instructions : 1) Answer **one** question from **each** Unit. Answer **three** questions from **Section I** and **three** questions from **Section – II**.

2) Answers to the **two** Sections should be drawn on **separate** drawing sheet.

3) **Use** only **half** imperial size drawing papers as answer sheets.

4) Assume suitable data **if** necessary and retain **all** construction lines.

SECTION – I

Unit – II

Engineering Curves

1. A) Draw the Archimedean spiral of $1\frac{1}{2}$ convolutions with the greatest radius of 120 mm and smallest radius of 30 mm. Draw the tangent and normal to the curve at a point 80 mm from the pole. **8**

B) The foci of an ellipse are 110 mm apart and the minor axis is 90 mm long. Draw an ellipse and determine length of major axis. **7**

OR

P.T.O.



2. A) Construct a parabola with base 90 mm and axis 80 mm by tangent method. **7**
- B) A circle of 40 mm diameter rolls over the outside surface of another circle of 120 mm diameter. Draw the curve traced by the initial point of contact for one complete rotation of the smaller circle. **8**

Unit – III

Optographic Projections

3. Using first angle method, draw following views for the object shown in Fig. 1
- a) Sectional Elevation from the direction of arrow 'X' (Section A – A). **6**
- b) Plan. **6**
- c) LHSV. **6**
- d) Give all dimensions. **2**

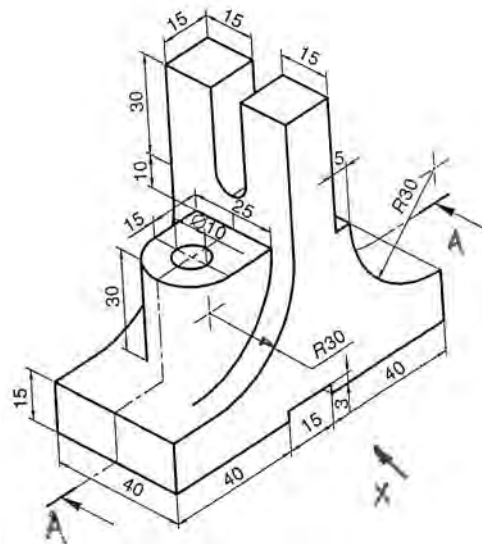


Fig. 1

OR



4. Using first angle method of projection, draw following views for the object shown in Fig. 2

- a) Sectional Elevation from the direction of 'X' (Section A – A). 6
- b) Plan. 6
- c) LHSV. 6
- d) Give all dimensions. 2

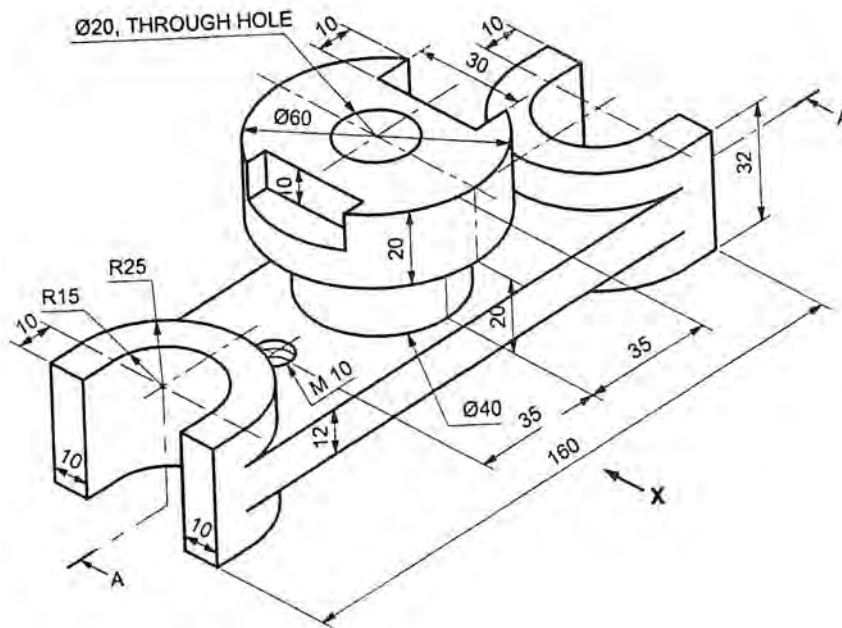


Fig. 2



Unit – IV

Auxiliary Projections

5. Fig. 3 shows FV and RHSV of a block. Draw the following :

- a) Redraw the given views. 5
- b) Draw an auxiliary view in the direction of 'M'. 8
- c) Give all dimensions. 2

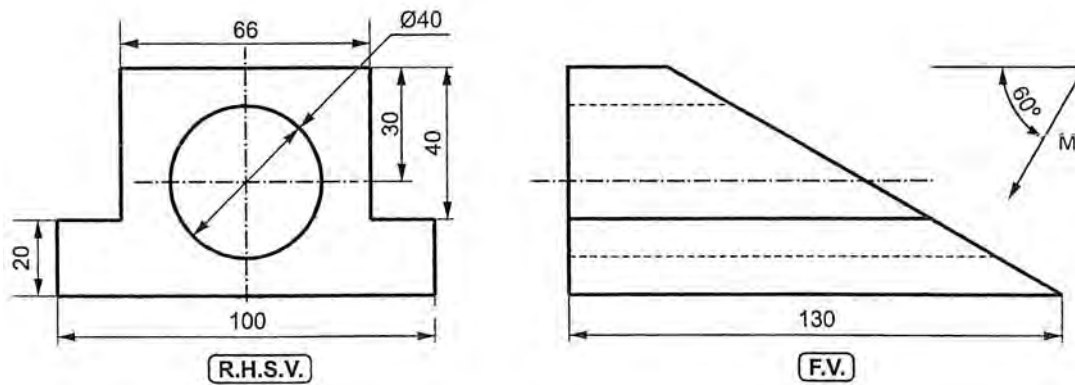


Fig. 3

OR



6. Fig. 4 shows incomplete elevation and auxiliary views. Draw the following :

- a) Redraw the given views. 5
- b) Elevation. 8
- c) Give all dimensions. 2

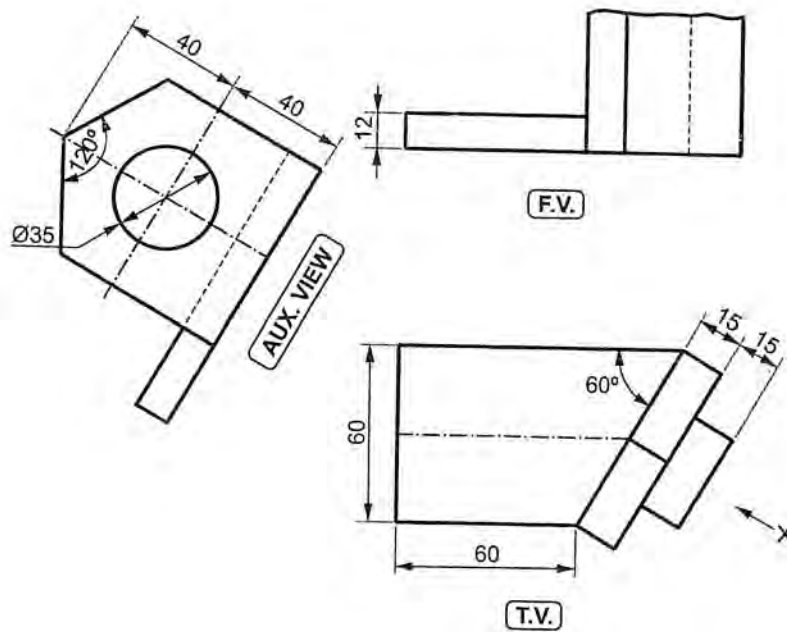


Fig. 4



SECTION – II

Unit – V

Isometric

7. The Figure 5 shows elevation and end view of a machine part. Draw its isometric view by using natural scale and show overall dimensions. 20

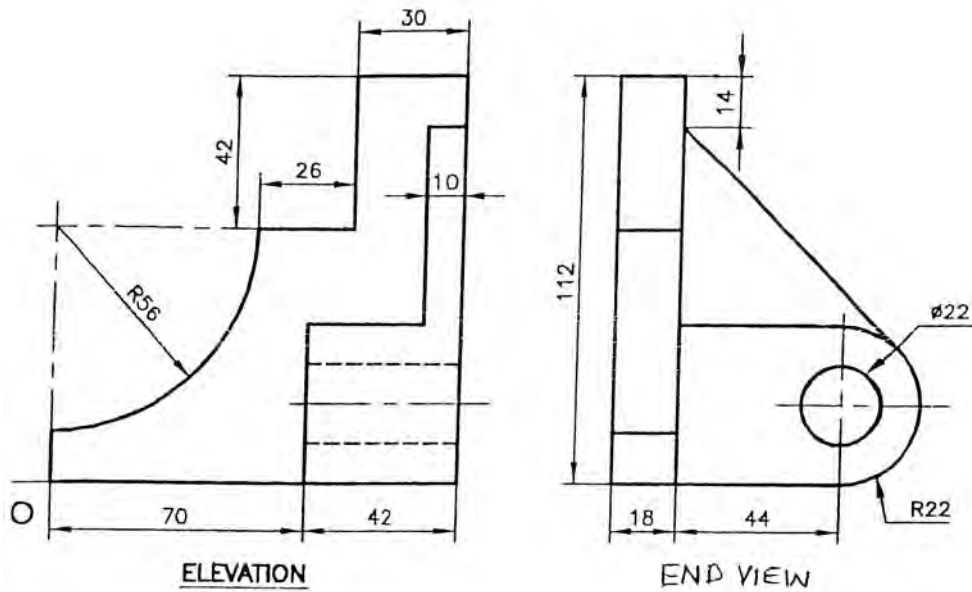


Fig. 5
OR

8. The Figure 6 shows front view and left hand side view of a machine part. Draw its isometric projections by using isometric scale. 20

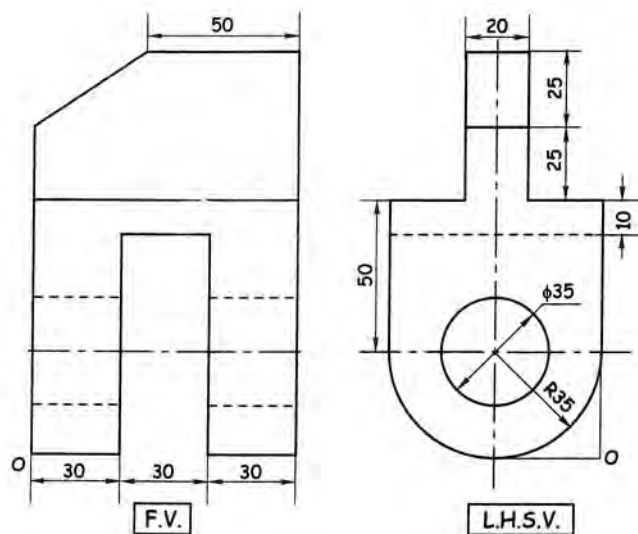


Fig. 6



Unit – VI

Missing Views

9. The Figure 7 shows elevation and plan of a machine part. Draw

- a) Sectional Front View, along section A – A. 7
- b) Top View. 3
- c) Left Side View. 7
- d) Dimensioning. 3

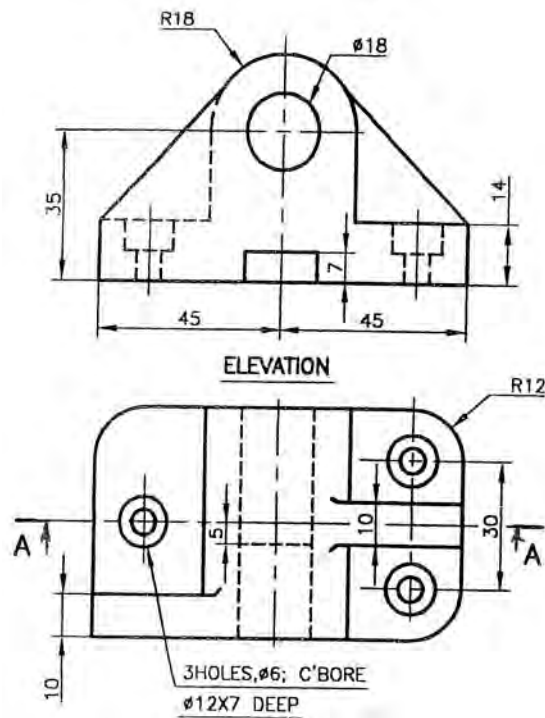


Fig. 7

OR



10. The Figure 8 shows front view and left side view of a machine part. Draw

- a) Sectional Front View, along section A – A. 7
- b) Top View. 7
- c) Left Side View. 3
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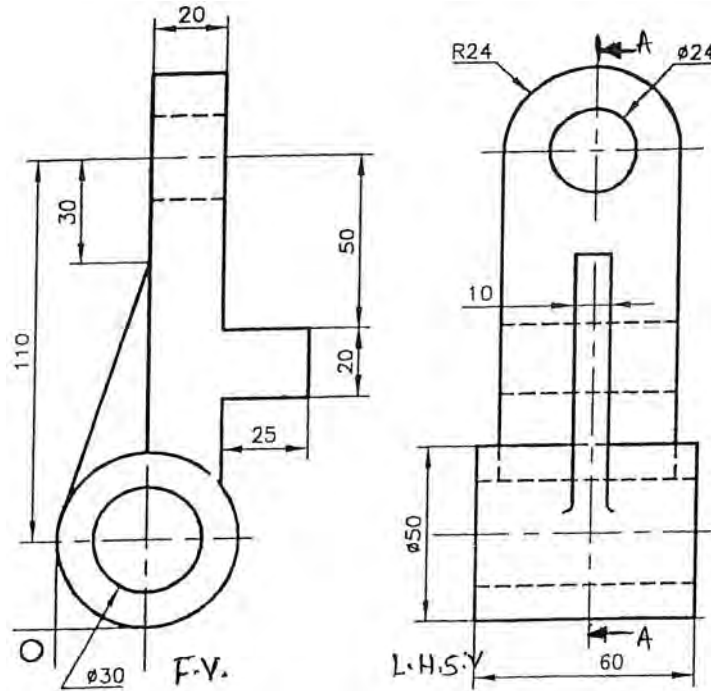


Fig. 8

Unit – VII

Free Hand Sketches

11. Draw proportionate freehand sketches of the following :

- a) Splined shaft. 3
- b) Square thread. 3
- c) Rag Foundation bolt. 4

OR

12. Draw proportionate freehand sketches of the following :

- a) Hexagonal Headed Nut. 3
- b) Gib-headed Key assembled in shaft and hub. 3
- c) Flanged coupling. 4



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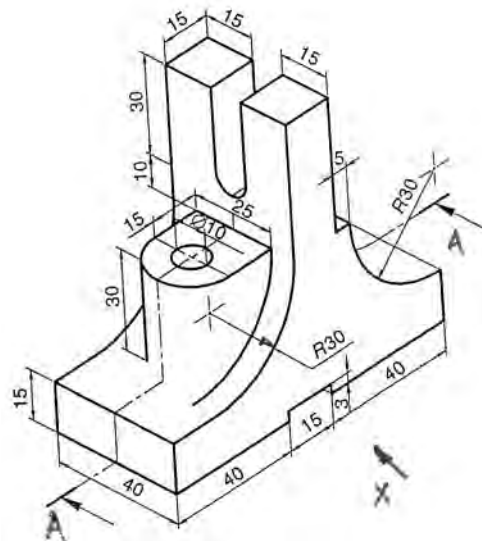


Fig. 1

OR



4. Using first angle method of projection, draw following views for the object shown in Fig. 2

- a) Sectional Elevation from the direction of 'X' (Section A – A). 6
- b) Plan. 6
- c) LHSV. 6
- d) Give all dimensions. 2

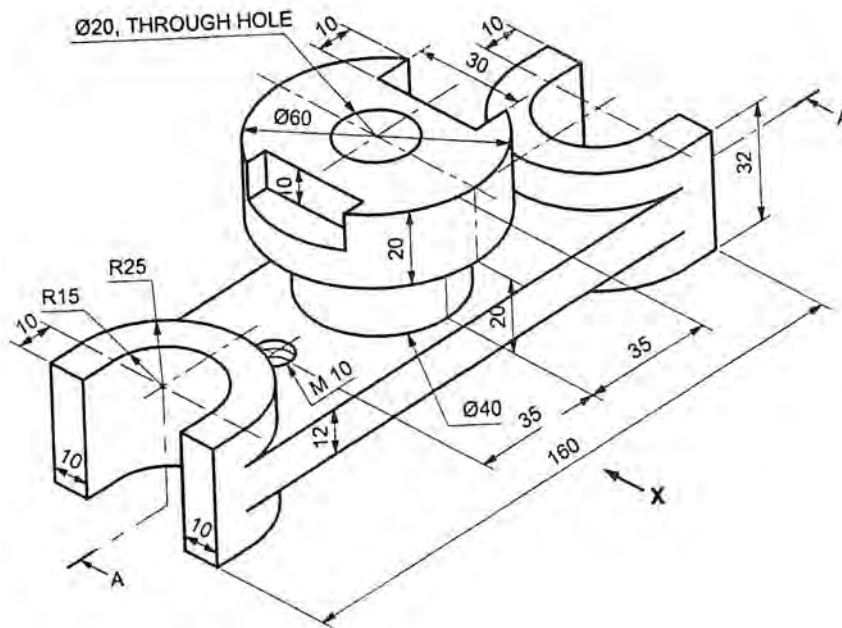


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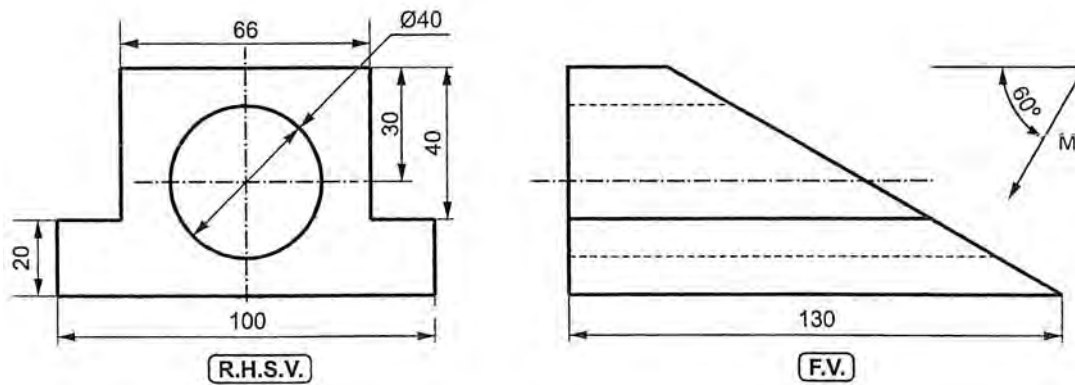


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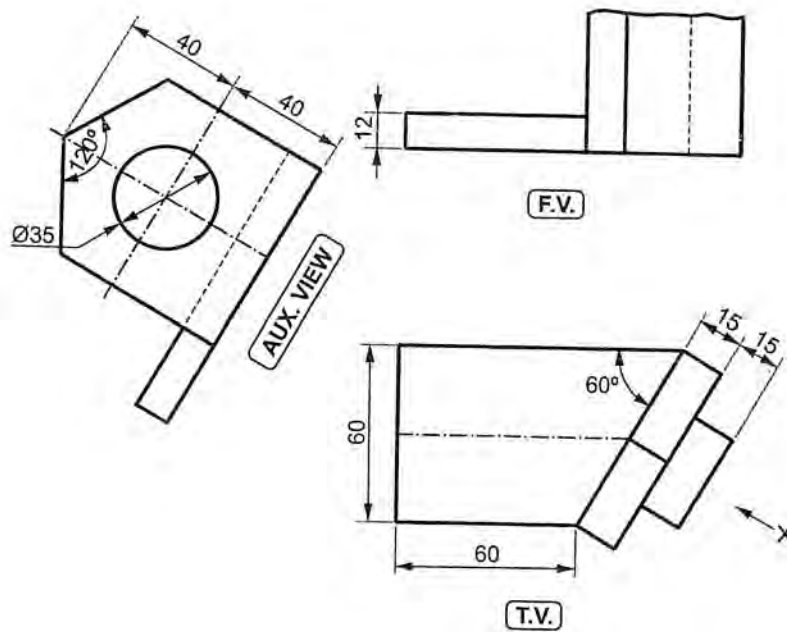


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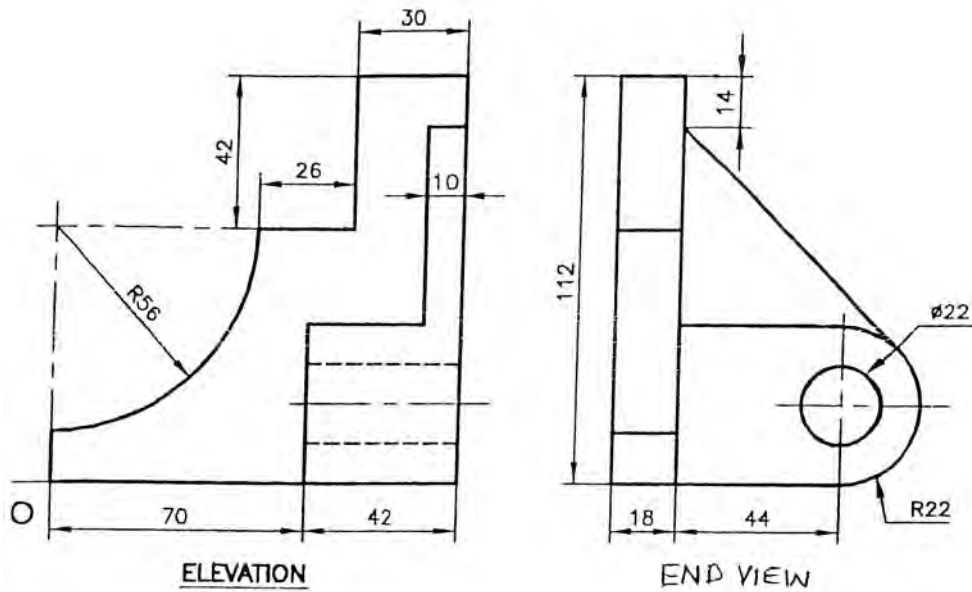


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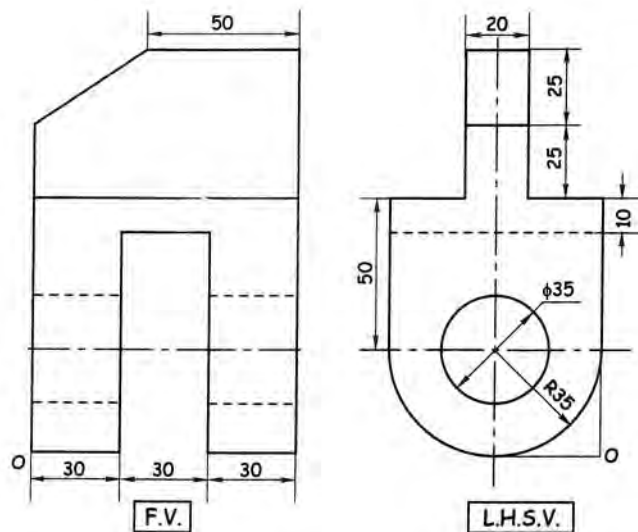


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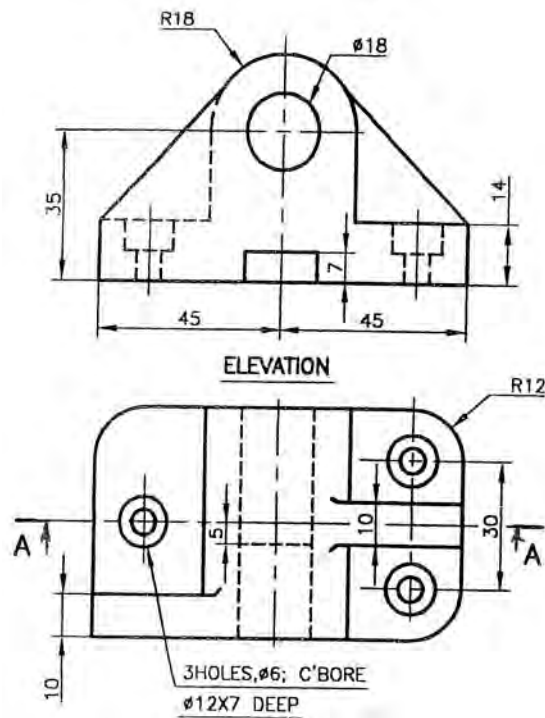


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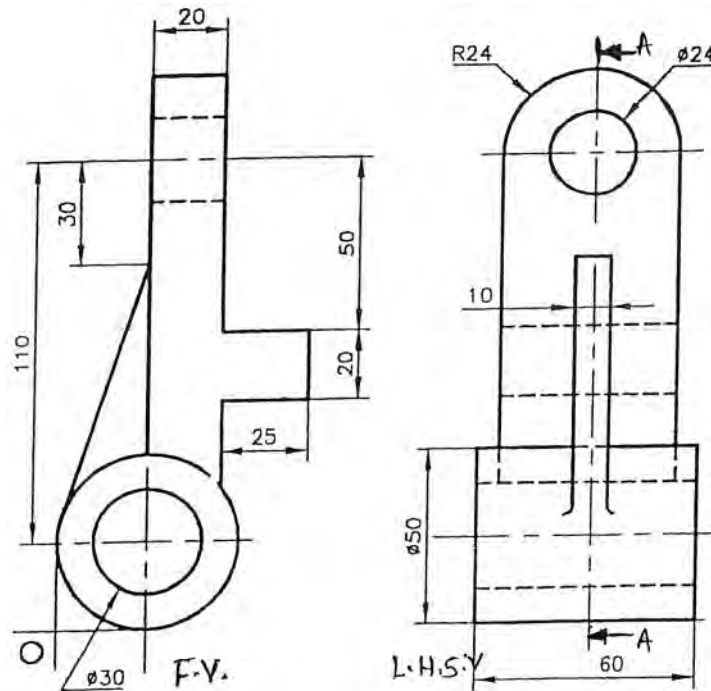


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