

Total No. of Questions—12]

[Total No. of Printed Pages—8+2

Seat No.	
-------------	--

**[4756]-16**

**F.E. (First Semester) EXAMINATION, 2015**

**ENGINEERING GRAPHICS-I**

**(2008 PATTERN)**

**Time : Four Hours**

**Maximum Marks : 100**

**N.B. :—** (i) Answer any *one* question from each Unit.

(ii) Answer to the two Sections should be written in separate answer-sheet, use back side of sheet.

(iii) Figures to the right indicate full marks.

(iv) Assume suitable data, if necessary.

(v) Retain construction lines.

(vi) Marks are reserved for Dimensioning and good presentation.

**Section-I**

**Unit I**

1. (a) Draw a circle with diameter AB equal to 65 mm. Draw a line AC 135 mm long and tangent to the circle at point A. Trace the paths of point A when the line AC rolls on the circle without slipping in anticlockwise direction till the end C touches the circumference of the circle. Name the curve and also draw the normal and tangent to the curve at a point 100 mm from the centre of the circle.

[7]

P.T.O.

- (b) A right angled triangle of two adjacent sides 45 mm and 60 mm is rotating around side 60 mm. A point P is moving from the bottom most position to the highest position on hypotenuse while the triangle completes one revolution. Both the movements are uniform. Draw the path of point P in the elevation and plan. Name the curve. [8]

*Or*

2. (a) A circular disc of 40 mm diameter rolls on another fixed disc same radius with external contact, for one complete revolution of the rolling circle. Draw a curve traced by a point on the circumference of the rolling circle, which is in contact with base circle, in the starting position. Name the curve. [8]
- (b) The major axis of ellipse is 120 mm long and minor axis is 80 mm long. Find the foci and draw the ellipse by arc of circle method. Draw tangent to the ellipse at a point on it 30 mm above the major axis. [7]

## **Unit II**

3. Fig. 1 shows a pictorial view of an object. Draw the following views to full scale by using First Angle Method of projection.
- (1) Sectional elevations on a sectional plane X-X looking in the direction of arrow X.

(2) Top View (Plan) (show all the necessary dotted lines).

(3) LHSV

(4) Give the entire dimensions.

[7+6+5+2=20]

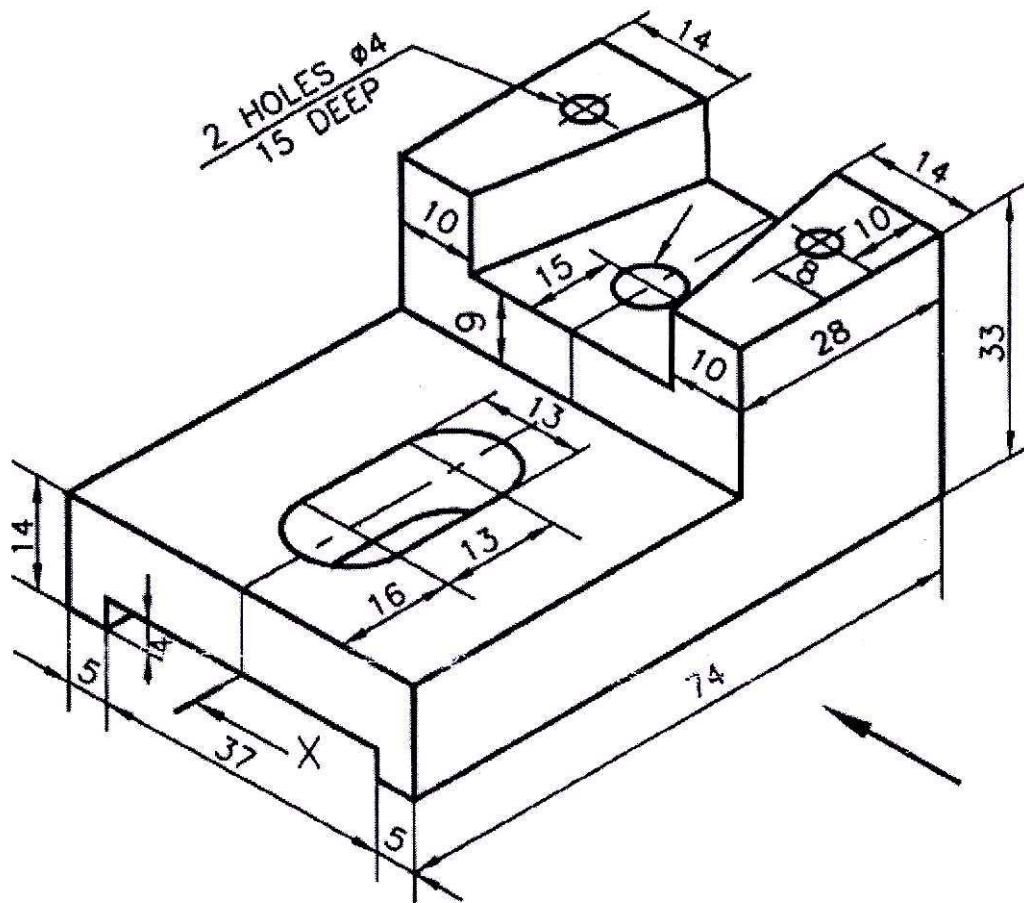


Fig. 1

Or

4. Fig. 2 shows a pictorial view of a C I-Bracket. Draw the following views to full scale by using First Angle Method of projection :
- (1) Sectional elevations looking in the direction of arrow X.
  - (2) Top View (Plan) (show all the necessary dotted lines).
  - (3) End view from Right Hand Side
  - (4) Give the entire Dimensions.
- [7+6+5+2=20]

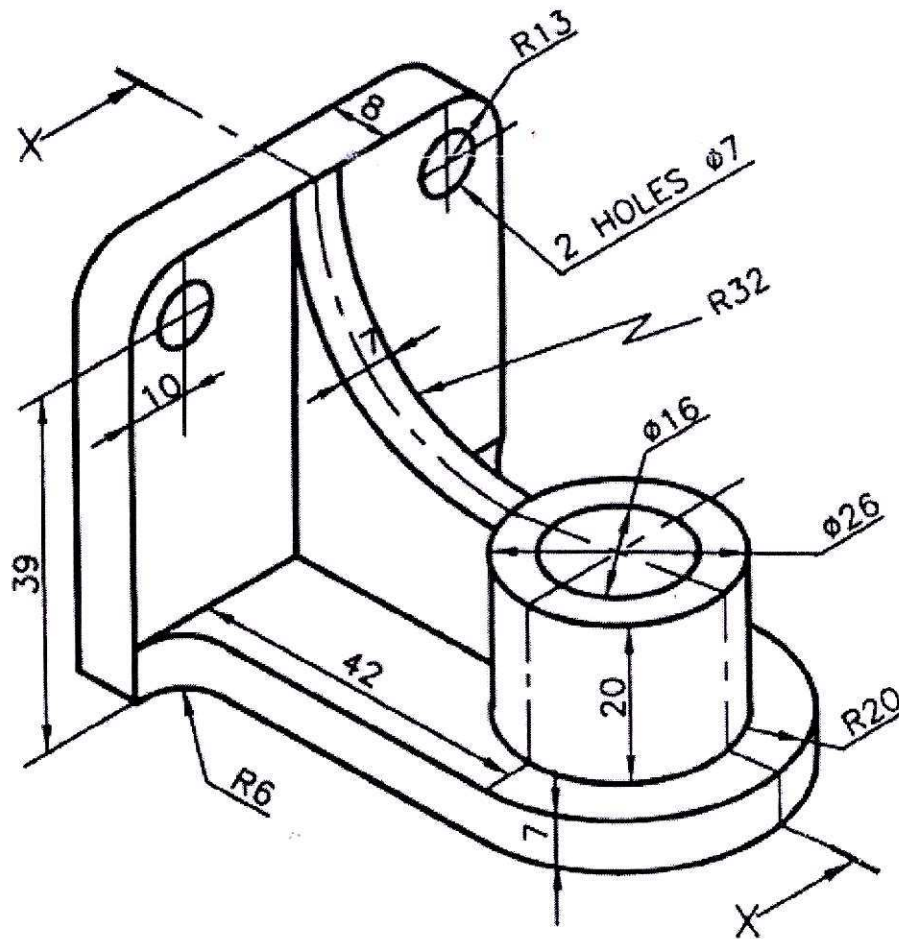


Fig. 2

### Unit III

5. Draw the Front View, Top View and an Auxiliary View which will show the true shape of the surface 'A' for the object shown in the following Fig. 3. [3+4+8=15]

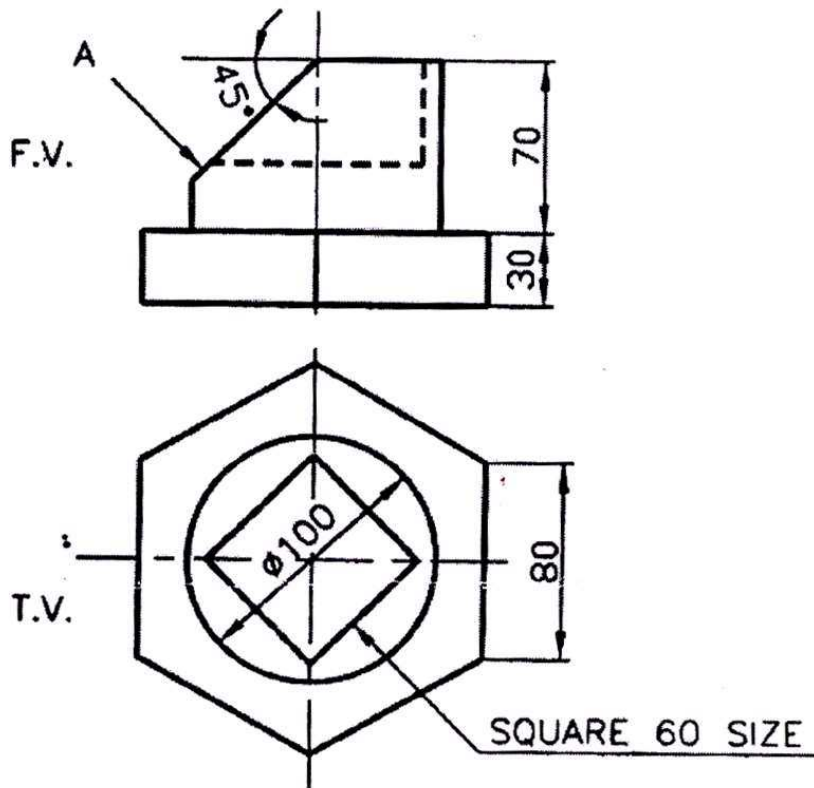


Fig. 3.

Or

6. Draw the given Front View and complete the Top View with the help of the given auxiliary views and give all the dimensions.

(refer fig.4)

[6+9=15]

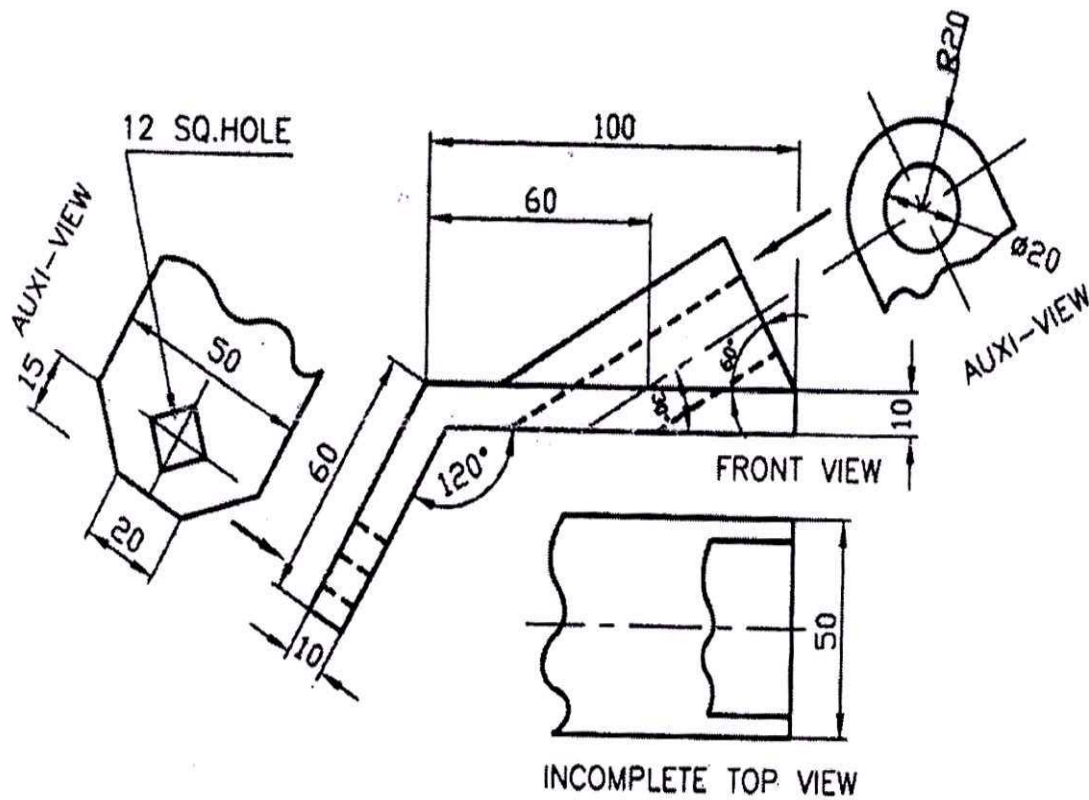


Fig. 4

## Section II

### Unit IV

7. The following Fig. 5 shows LHSV and elevation of object according to first angle projections method draw its Isometric View. Retain all the construction lines and construction you have made. [17+3=20]

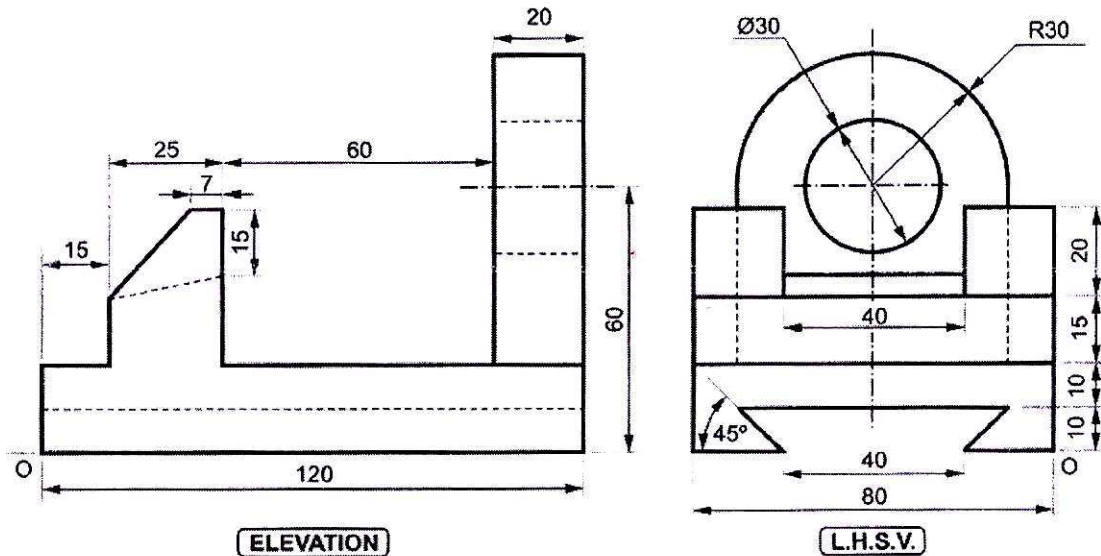


Fig. 5

Or

8. The following Fig. 6 shows Elevation and Right hand side view of the object. Draw its Isometric View. Retain all the constuction lines and construction you have made. [17+3=20]

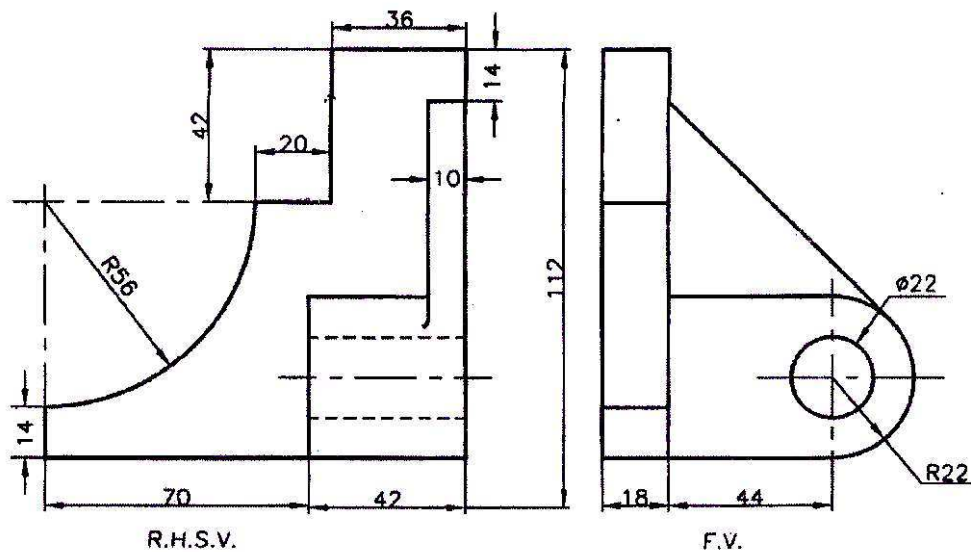


Fig. 6

## Unit V

9. The following Fig. 7 shows Elevation and plan of an object. Using same method of projection, draw the following views :
- (a) Sectional Elevation, Section along A-A,
  - (b) Plan
  - (c) End view

Give all the dimensions.

[7+4+6+3=20]

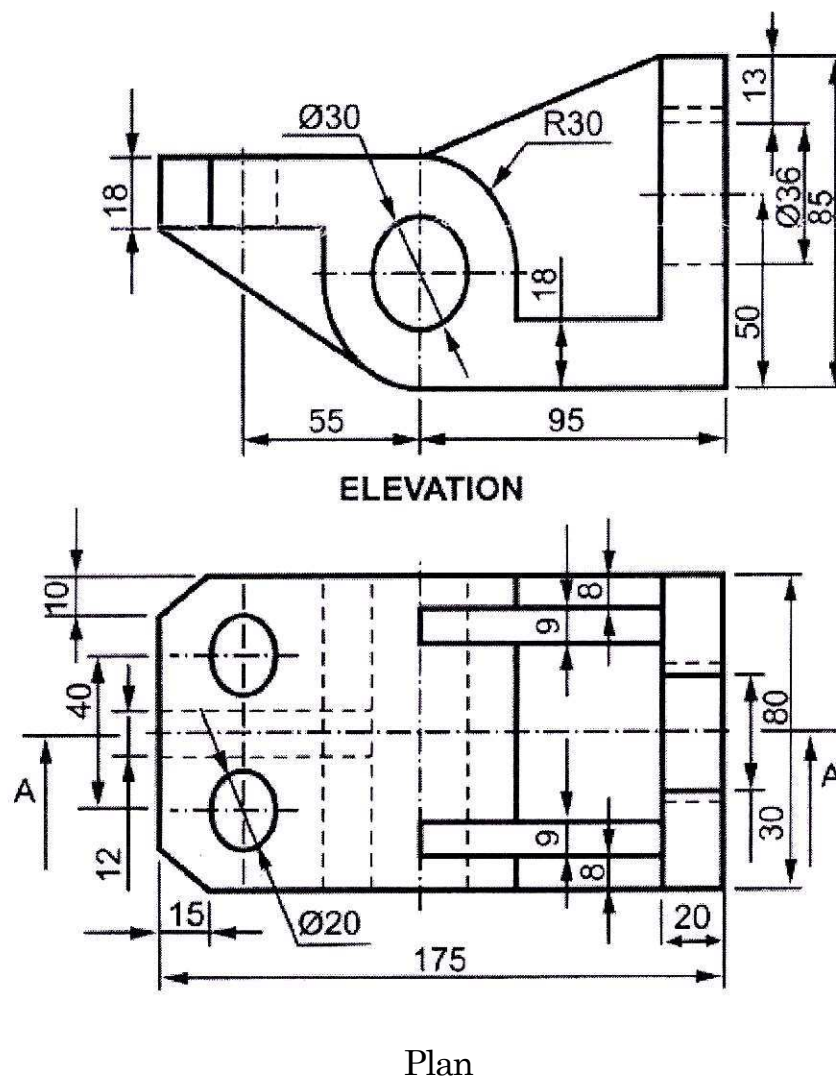


Fig. 7



Or

10. The following Fig. 8 shows elevation and End View of an object. Using same method of projection, draw the following views :

- (a) Sectional Elevation, section along A-A,
- (b) End view
- (c) Plan

Give all the dimensions.

[7+4+6+3=20]

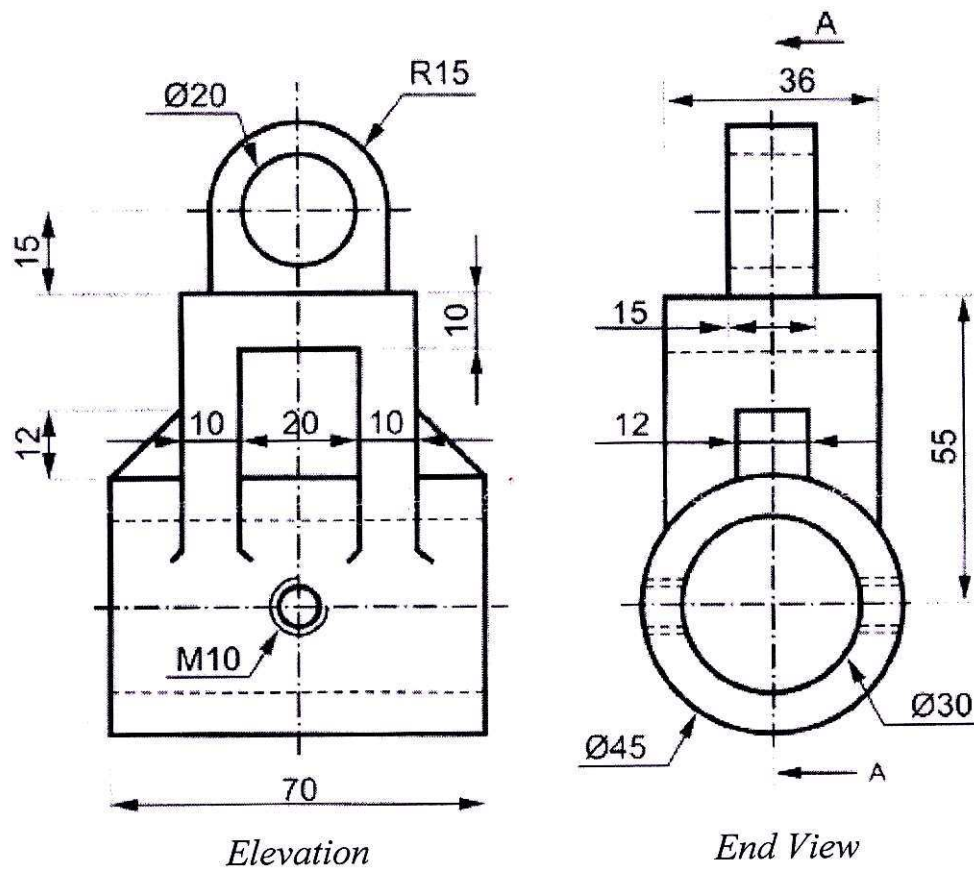


Fig. 8

**11.** Draw proportional free-hand sketches of any *two* from the following machine parts : [5+5=10]

- (1) Acme thread
- (2) Universal coupling
- (3) Capston Nut
- (4) Cylindrical helical compression and tension springs

*Or*

**12.** Draw proportional free-hand sketches of any *two* from the following machine parts : [5+5=10]

- (1) External and internal thread
- (2) Flexible coupling
- (3) Saddle key and Gib-headed sunk key
- (4) Triple riveted (zig-zag type) lap joint.