

Total No. of Questions : 12]

[Total No. of Printed Pages : 8

**[3661]-105****F. E. (Semester - I) Examination - 2009****ENGINEERING GRAPHICS - I****(June 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) Figure in bracket indicate full marks.
  - (4) Retain all construction lines.
  - (5) Use of log table, electronic pocket calculator is allowed.
  - (6) Use only half imperial size drawing papers an answer sheets.
  - (7) Assume suitable data, if necessary.
- 

**SECTION - I****UNIT - II : ENGINEERING CURVES**

- Q.1) (A)** Draw a parallelogram of 160mm and 120mm sides with included angle of  $120^\circ$ . Inscribe an ellipse within this parallelogram. Determine the major and minor axis of the ellipse. Draw tangent and normal to the ellipse at a point 20 mm above the major axis and at the left side of center O. **[08]**
- (B)** A line MN, 144 long revolves about its midpoint O in anticlockwise direction. A point P moves along this line MN from M to N during one complete revolution by uniform speed. Draw the locus of point P and name the locus. **[07]**

**OR**

- Q.2)** (A) Two asymptotes OX and OY are at  $75^\circ$  angle with each other. Point P is 30 mm and 40 mm away from OX and OY respectively. Draw the hyperbola passing through the point P taking at least 10 points. Draw tangent and normal at a point on hyperbola 40 mm away from OX. [08]
- (B) A circle of 60 mm diameter rolls on outside the circumference of the directing circle of same diameter without slipping. Draw an epicycloid of point P, touching the point of contact of both the circles for one complete evolution. [07]

### UNIT - III : ORTHOGRAPHIC PROJECTIONS

**Q.3)** For the object shown in fig. 1, draw the following views, using First Angle Method of Projection :

- (a) Sectional Elevation in the direction of arrow 'X' (section along A-A) [06]
- (b) Plan [06]
- (c) End View from Left Hand Side [05]
- (d) Give all dimensions [03]

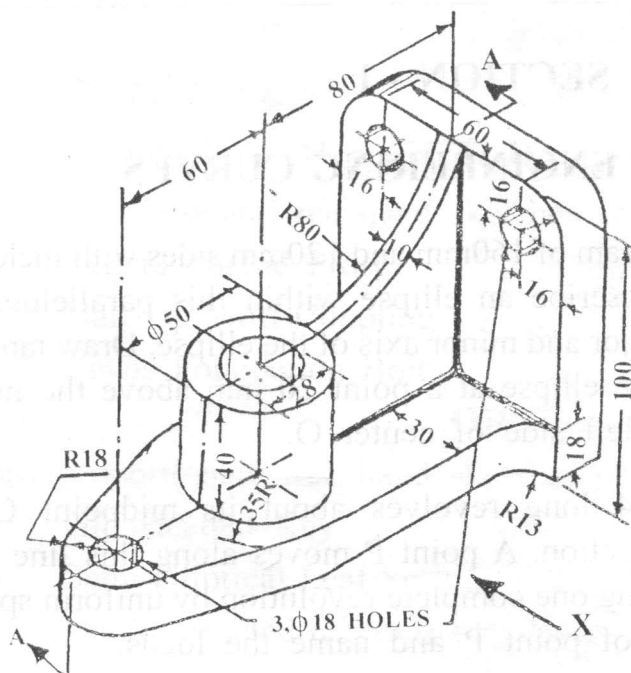
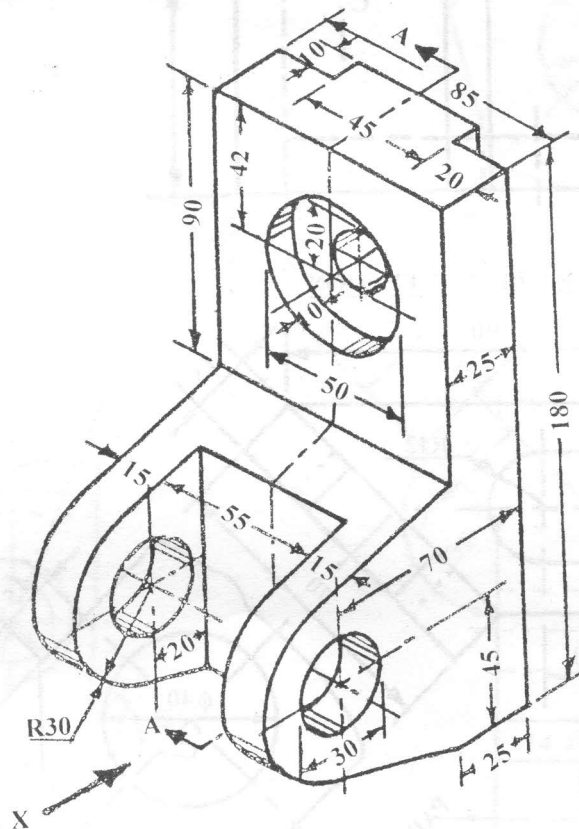


Fig. 1

OR

**Q.4)** For the object shown in fig. 2, draw the following views, using First Angle Method of Projection :

- (a) Elevation looking in the direction of arrow 'X' [06]
- (b) Plan [05]
- (c) Sectional End View from the Right Hand Side (section along A-A) [06]
- (d) Give all dimensions [03]

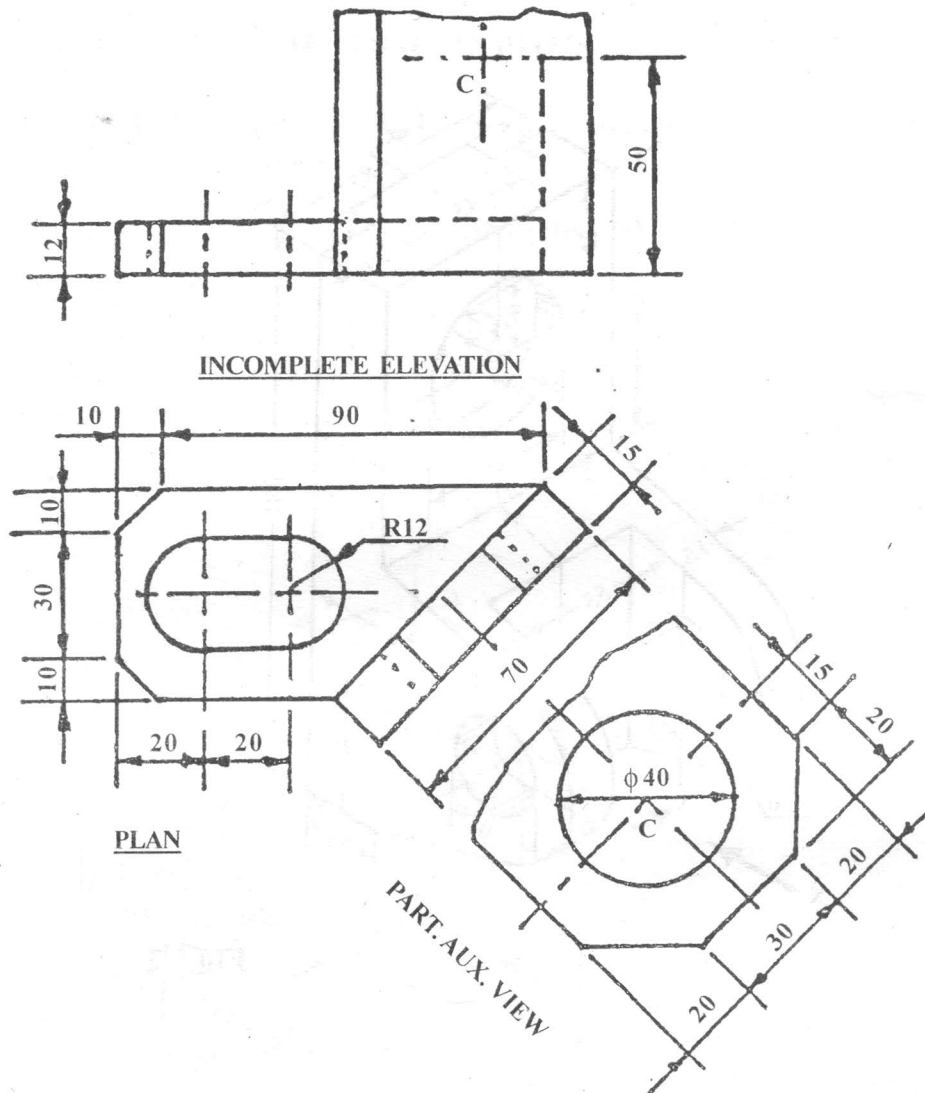


**Fig. 2**

## UNIT - IV : AUXILIARY PROJECTIONS

**Q.5)** Fig. 3 shows incomplete elevation, plan and partial auxiliary view of a 'Bracket'.

- |     |                         |      |
|-----|-------------------------|------|
| (a) | Redraw the given views  | [05] |
| (b) | Complete the Elevation  | [08] |
| (c) | Show all the dimensions | [02] |

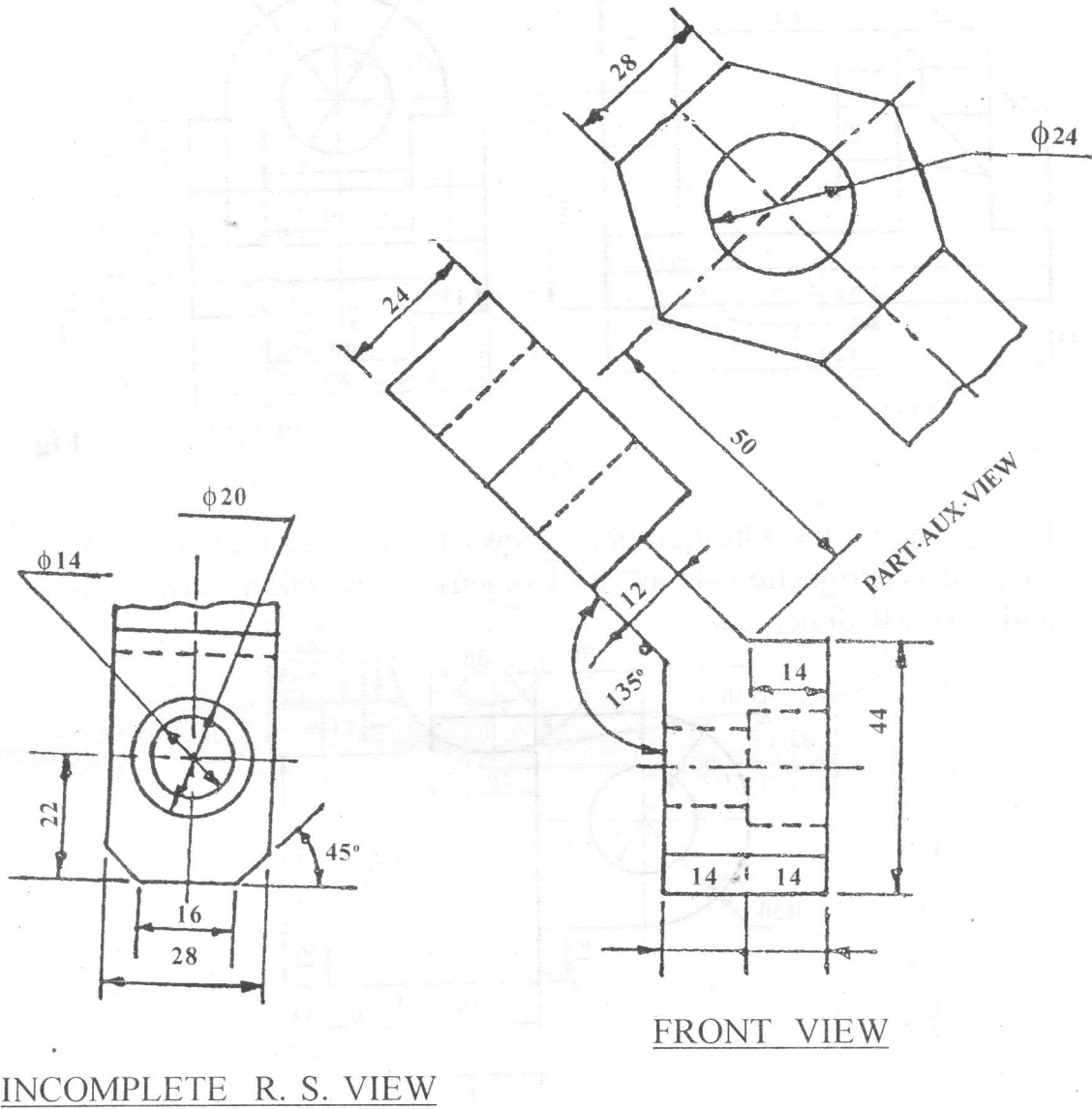


OR

Fig. 3

**Q.6)** Fig. 4 shows elevation, incomplete right hand side view and partial auxiliary view of an object :

- |     |                                   |      |
|-----|-----------------------------------|------|
| (a) | Redraw the given views            | [05] |
| (b) | Complete the Right Hand Side View | [08] |
| (c) | Show all dimensions               | [02] |



**Fig. 4**

## SECTION - II

### UNIT - V : ISOMETRIC

- Q.7)** Fig. 5 shows the Elevation and Left Hand Side View of an object by First Angle method of Projection. Draw an isometric projection taking origin at 'O' and give all dimensions : [17+3]

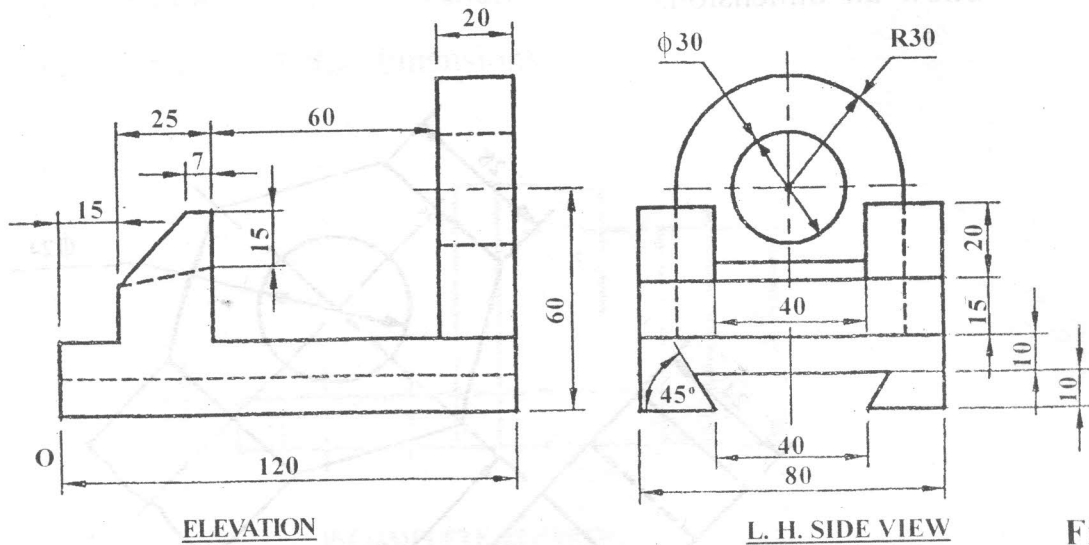


Fig. 5

OR

- Q.8)** Fig. 6 shows the Orthographic Views of an object by First Angle Method of Projection. Draw its Isometric View taking origin at 'O' and give all dimensions : [17+3]

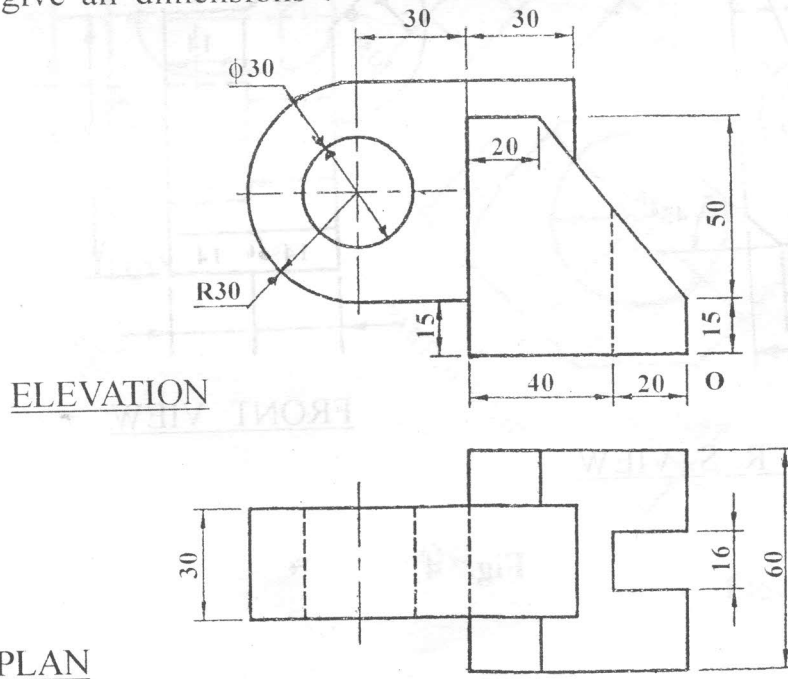


Fig. 6

# UNIT - VI : MISSING VIEWS

**Q.9)** Fig. 7 shows Elevation and Plan of an Object. Draw the following view by First Angle Method of Projection :

- (a) Sectional Elevation (section along A-A) [07]
- (b) Plan [03]
- (c) Left Hand Side View [08]
- (d) Give all dimensions. [02]

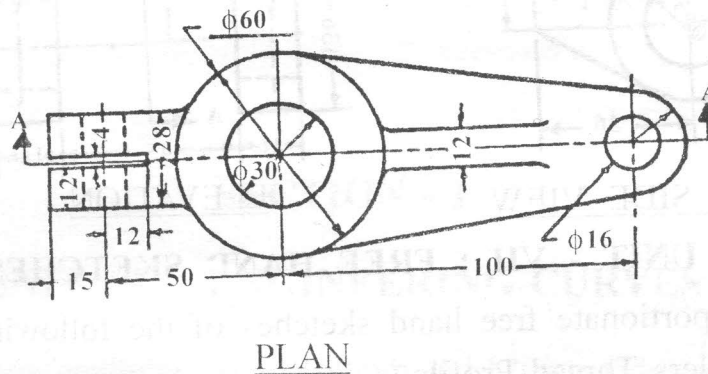
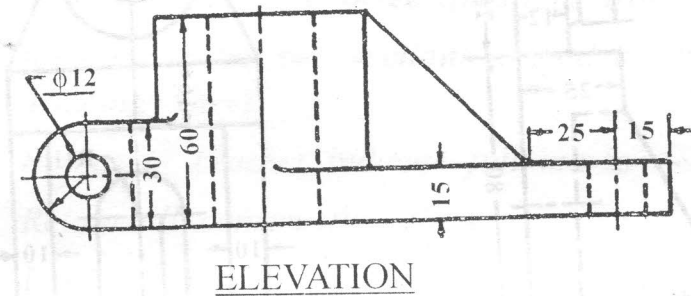
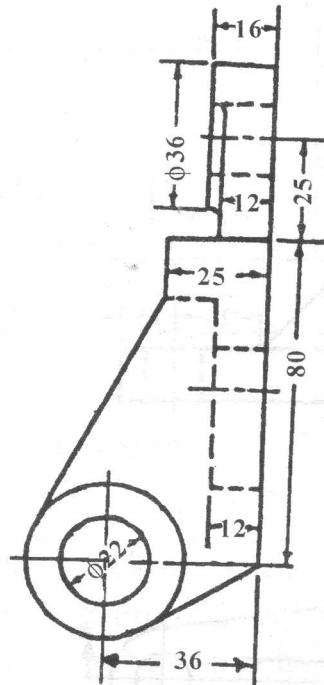


Fig. 7

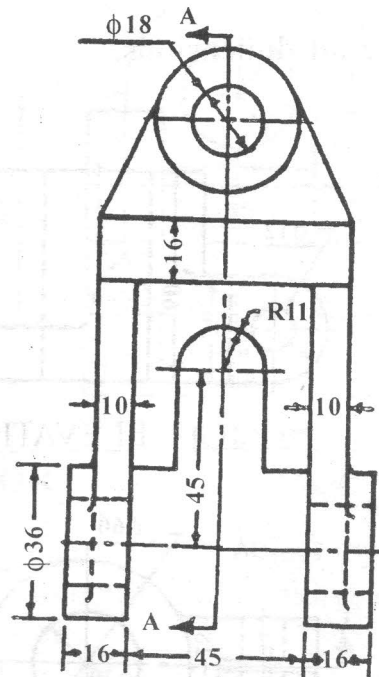
OR

**Q.10)** Fig. 8 shows Elevation and Right Hand Side View of an object. Draw the following views by First Angle Method of Projection :

- |     |   |      |
|-----|---|------|
| (a) | Elevation   | [03] |
| (b) | Plan  | [07] |
| (c) | Sectional Left Hand Side View (section along A-A) | [08] |
| (d) | Give all dimensions.                              | [02] |



R. H. SIDE VIEW



ELEVATION

**Fig. No. 8**

### UNIT - VII : FREE HAND SKETCHES

**Q.11)** Draw proportionate free hand sketches of the following :

- |     |                        |      |
|-----|------------------------|------|
| (a) | Sellers Thread Profile | [03] |
| (b) | Half-lap Muff Coupling | [03] |
| (c) | Lewis Foundation Bolt  | [04] |

**OR**

**Q.12)** Draw proportionate free hand sketches of the following :

- |     |  |      |
|-----|--|------|
| (a) | Gib Headed Key                           | [03] |
| (b) | Semi-elliptical Leaf Spring with eyelets | [03] |
| (c) | Double riveted (zigzag) Lap Joint        | [04] |