21222

4 Hours / 70 Marks

15 minutes extra for each hour

Seat No.

Instructions : (1) All Questions are *compulsory.*

(2) Answer each next main Question on a new page.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

(5) Retain all construction lines.

Marks

1. Solve any FIVE : **10**

(a) Draw a proportionate free hand sketch of Muff Coupling.

(b) Sketch two views of single rivetted lap joint.

(c) Draw a proportionate free hand sketch of cup head rivet.

(d) Draw free hand sketch of cone pully drive.

(e) Draw neat, proportionate free hand sketch of eye foundation bolt.

(f) Draw conventional presentation of following material :

(i) Bronze

(ii) Concrete

(g) Draw the conventional presentation of following welded joint :

(i) Double bevel butt joint

(ii) Spot joint

2. **Solve any THREE :** 12

   (a) A line AB, 65 mm long is inclined to HP at an angle of 45°. Its end A is 15 mm above HP and 25 mm infront of VP. Line AB is contained by a vertical plane making an angle of 45° to VP. Draw the projections of line and find inclinations of the line with VP.

   (b) An ellipse of major axis 70 mm is seen as a circle of 50 mm diameter in the top view. Find out its inclination with HP and also draw its side view.

   (c) A pentagonal plate 40 mm side has its corner on the VP. The plate is inclined to VP in such a way that the elevation length of two sides is each 35 mm. One side is perpendicular to HP. Draw three views of the plate and find its inclination with VP.

   (d) A square pyramid of 40 mm side of base and axis length 60 mm is kept on HP on a corner of its base such that its axis makes an angle of 30° to HP and parallel to VP. Draw the projections.

   (e) A tetrahedron of 60 mm length of edge is kept on HP on one of its edges in such a way that its axis makes an angle of 45° with HP and parallel to VP. Draw its projection.

3. **Solve any TWO :** 16

   (a) A cone diameter of base 60 mm and height 70 mm is suspended by a string attached to the mid point of any one of its generators. Draw the projections of the solid and find the inclination of the axis with HP. Consider axis parallel to VP.

(b) A hexagonal pyramid, base 25 mm and axis 65 mm long is resting on its base on HP with two sides of base parallel to VP. It is cut by a section plane, perpendicular to VP and inclined at 45° to HP and intersecting the axis at a point 22 mm above base.

Draw :

(i) F.V.

(ii) Sectional T.V. and

(iii) True shape of section

(c) A cone base 50 mm diameter, axis 60 mm long and resting on its base on HP. It is cut by vertical section plane parallel to VP and 10 mm away from the top view of the axis. Draw top view and sectional front view.

4. **Solve any TWO :** 16

(a) Fig.-1 shows the pictorial view of an object.

Draw :

(i) Sectional front view in the X-direction
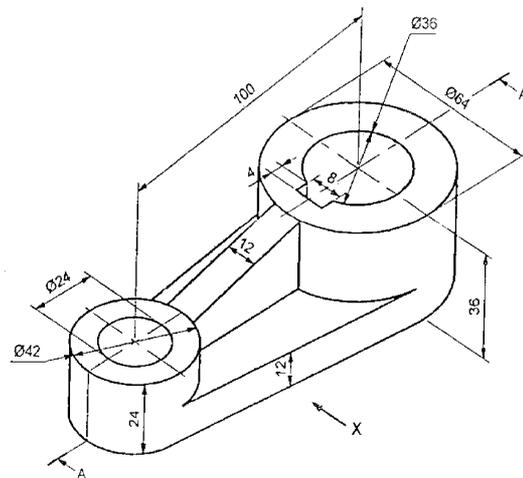
(ii) Side view

Use first angle method.

Fig.-1

(b) Fig.-2 shows isometric view of a CI block.

Draw :

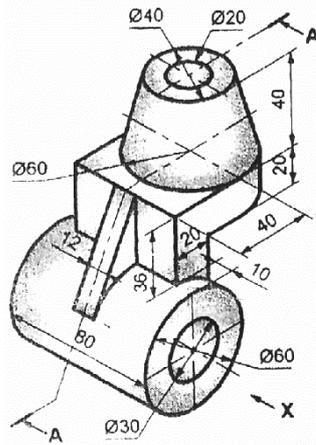(i) Sectional F.V. in the X-direction

(ii) T.V.

(iii) L.H.S.V.

Fig.-2

(c) Fig.-3 shows F.V. and R.H.S.V. of an object. Draw its T.V. and also re-draw the given views.
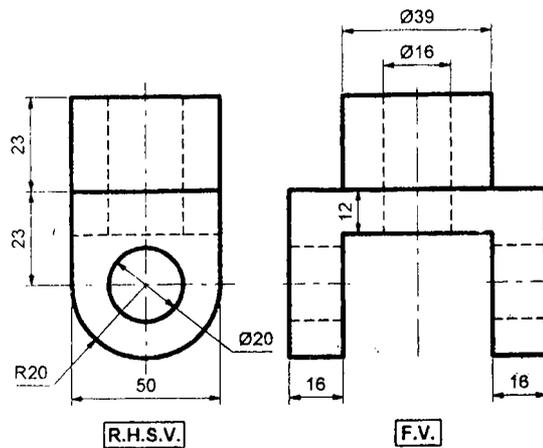

Fig.-3

5. **Solve any TWO :** 16

   (a) Fig.-4 shows plan and elevation of an object.
       Draw :
       (i) End view from left
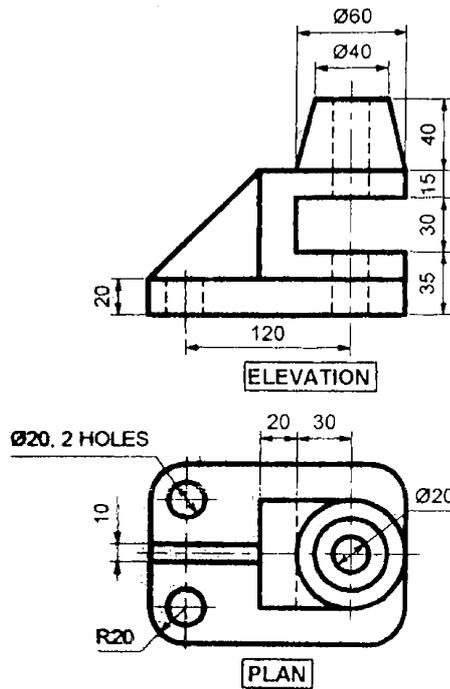   (ii) Sectional elevation
       Use first angle method.

Fig.-4

   (b) Fig.-5 shows the incomplete F.V., T.V. and partially auxiliary F.V. Draw the
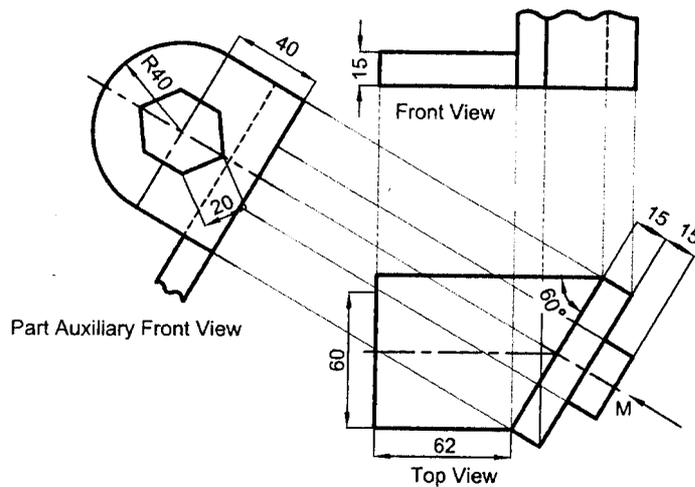   given views and complete the F.V.

Fig.-5

(c)　Fig.-6 shows the F.V. and S.V. of a block. Draw the given views and project an auxiliary view in the direction of arrow A.
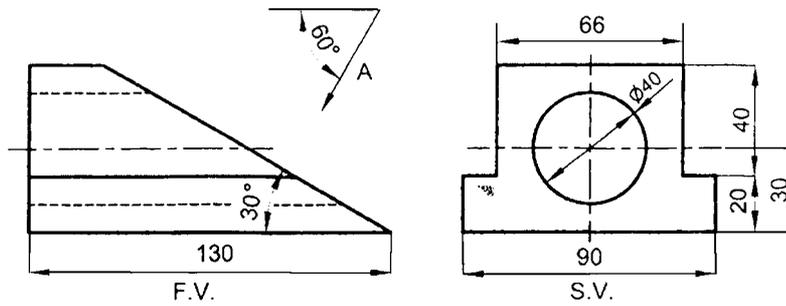

Fig-6