12223

4 Hours / 70 Marks   Seat No.

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

(2)   Figures to the right indicate full marks.

(3)   Assume suitable data, if necessary.

Marks

1.   **Solve any FIVE :**   **10**

(a)   Draw the conventional representation of following materials :

(i)   Wood

(ii)   Rubber

(b)   Draw the conventional representation of following welded joints :

(i)   Double V-Butt

(ii)   Single J-Butt

(c)   Draw the cross sections of the following :

(i)   V Belt

(ii)   V-Belt Pulley

(d)   Draw neat & proportionate free hand sketch of Rag Foundation bolt.

(e)   Draw neat & proportionate free hand sketch of Muff-coupling.

(f) If cutting plane is inclined at mid-point of axis of cone, then answer the following :

    (i) T.V. of section will be ?

    (ii) True shape of section will be ?

(g) Define the following :

    (i) Tetrahedron

    (ii) Frustum of a cone

2. **Solve any THREE :** **12**

(a) A line CD, 70 mm long has its one end C in the V.P. & other end D 15 mm above H.P. 50 mm in front of V.P. Draw the projections of lines when the sum of its inclination with H.P. & V.P. is 90°.

(b) A regular pentagonal plate has 25 mm side, has a central hole of 20 mm diameter. The plate is resting on its corners in H.P. with its surface perpendicular to V.P. & inclined at 45° to H.P. Draw its projections.

(c) A rectangular plate of sides 50 mm & 25 mm is hung from one of its corners. Draw the projections of plane.

(d) An isosceles triangle ABC having its base AB = 40 mm & altitude 60 mm is hung from one of the corner of its base. Draw the projections of triangle.

(e) A circular plate of 60 mm diameter has a hexagonal hole of 20 mm side, centrally punched. The plate is resting on the V.P. on a point of its circumference such that diameter passing through that point is making an angle of 45° the V.P. Draw the elevation & plan of the plate when it is normal to H.P.

3. **Solve any TWO :** 16

(a) A right circular cone of 40 mm base diameter & 75 mm long is resting on its base on H.P. The position of cutting plane line is such that it is inclined at 50° to H.P. & perpendicular to V.P. bisecting the axil.

Draw :

(i) Front View

(ii) Sectional Top View

(iii) True shape of section

(b) Cone base 50 mm diameter & Axis 55 mm long is resting on H.P. on a point of its base. Draw its projections, if base makes an angle of 30° to the H.P. & axis parallel to V.P.

(c) A pentagonal prism side of base 30 mm & axis length 60 mm is kept on H.P. on one of its base edges in such way that its base makes an angle of 60° to H.P. & axis is parallel to V.P. Draw the projections.

4. **Solve any TWO :** 16

(a) Fig. 4.1 shows isometric view of a machine component. Draw the following views :

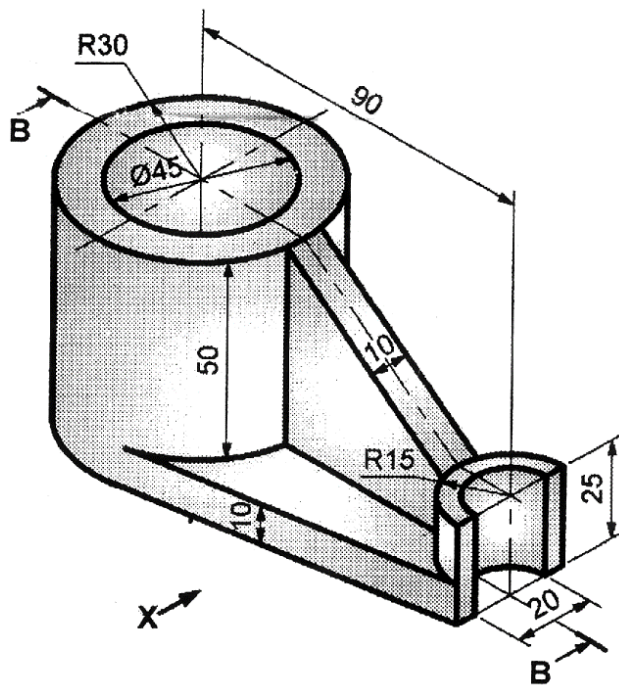(i) Sectional F.V. looking in the direction of X (Section B – B)

(ii) T.V.

Fig. 4.1

(b) Fig. 4.2 shows pictorial view of an object. Draw the following views :
(i) Sectional F.V. looking in the direction of X (Section B-B).
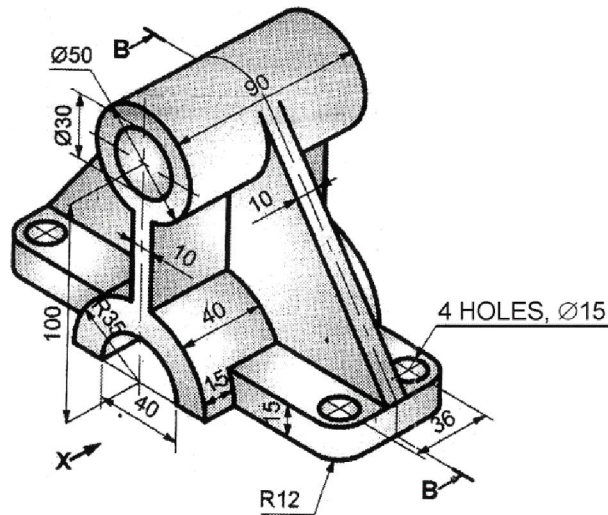(ii) R.H.S.V.

Fig. 4.2

(c) Fig. 4.3 shows T.V. & F.V. of an object, draw the missing view, By First Angle method of projection.
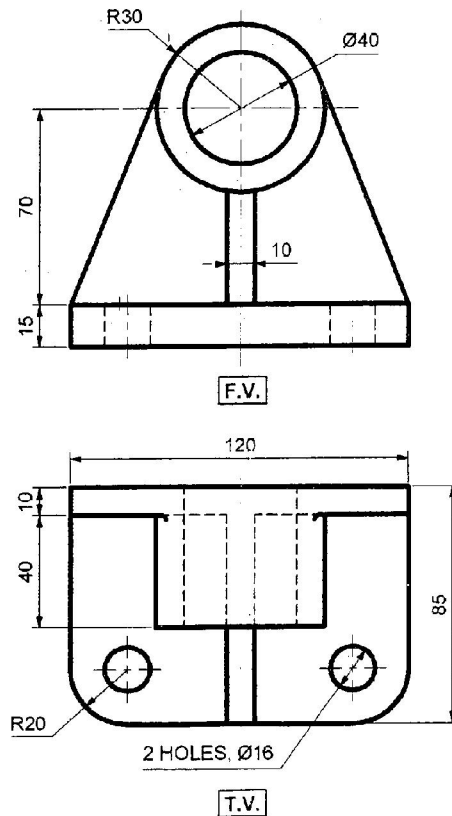

Fig. 4.3

5. **Solve any TWO :** 16

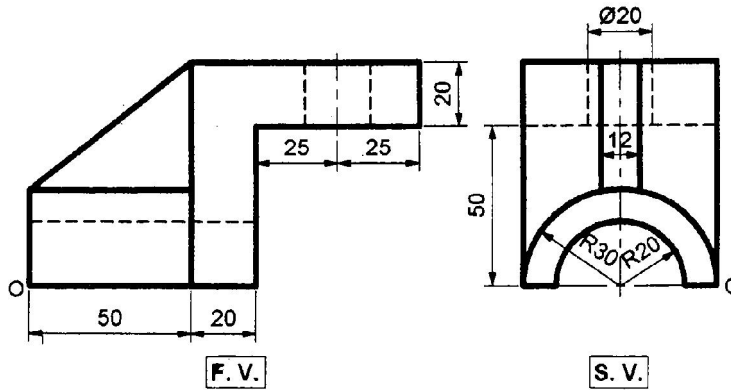   (a)   Fig. 5.1 shows two views of an object. Draw its Top View.

Fig. 5.1

    (b)   Fig. 5.2 shows Front View, Auxiliary Top View & Incomplete side view.
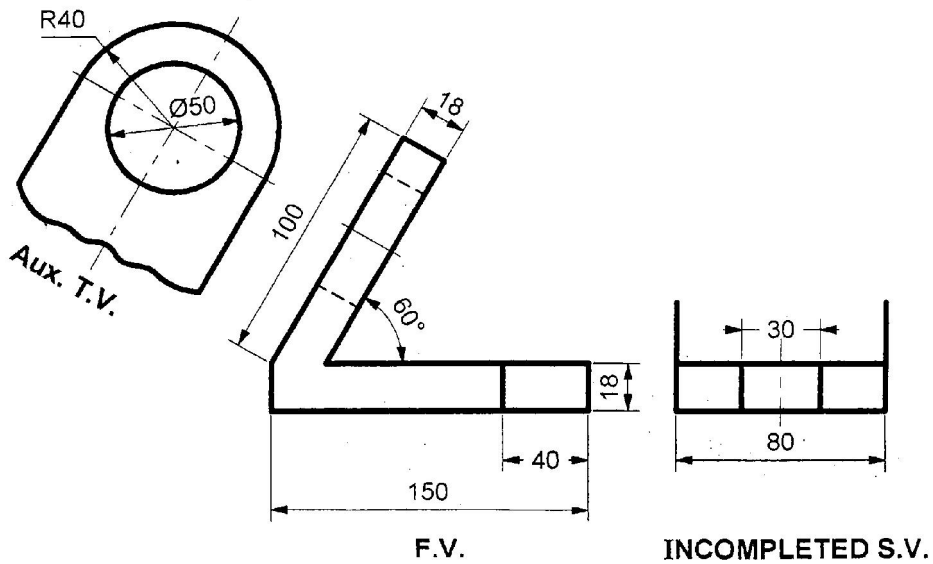
    Complete the side view.

Fig. 5.2

(c) F.V., partial right hand side view & partial auxiliary view shown in fig. 5.3
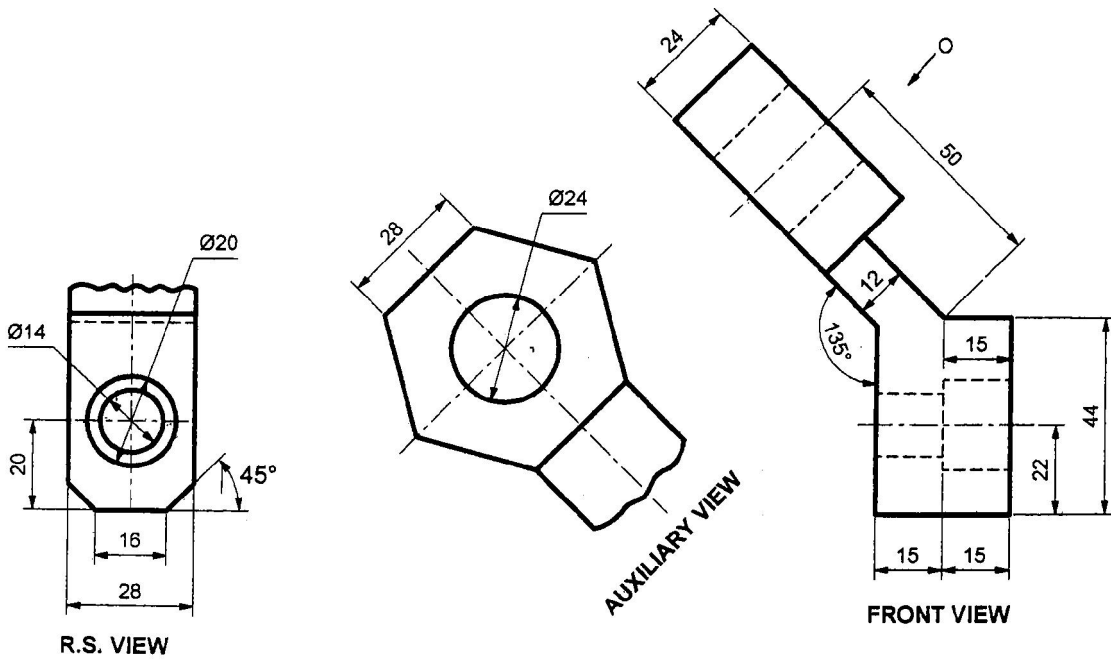Draw the given views & complete the R.H.S.V.

Ø20

Ø14

Ø24

28

24

50

12

135°

15

44

22

15

15

45°

20

16

28

R.S. VIEW

AUXILIARY VIEW

FRONT VIEW

Fig. 5.3