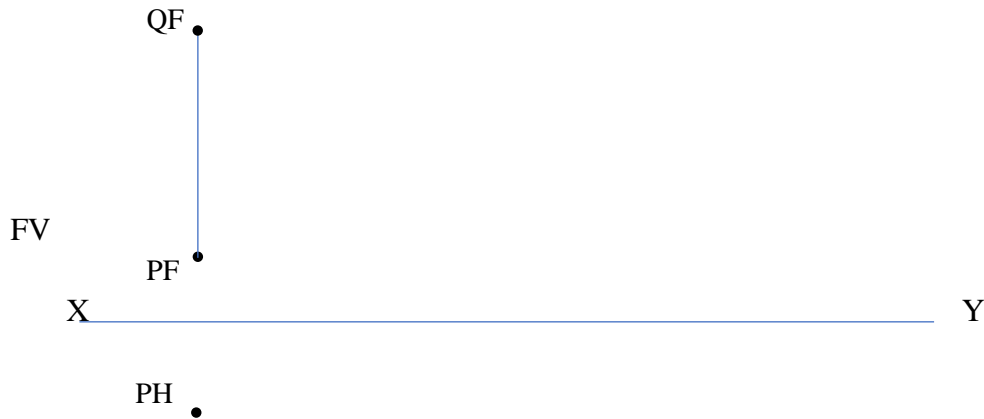


Shivaji University, Kolhapur
Question Bank for Mar 2022 (Summer) Examination

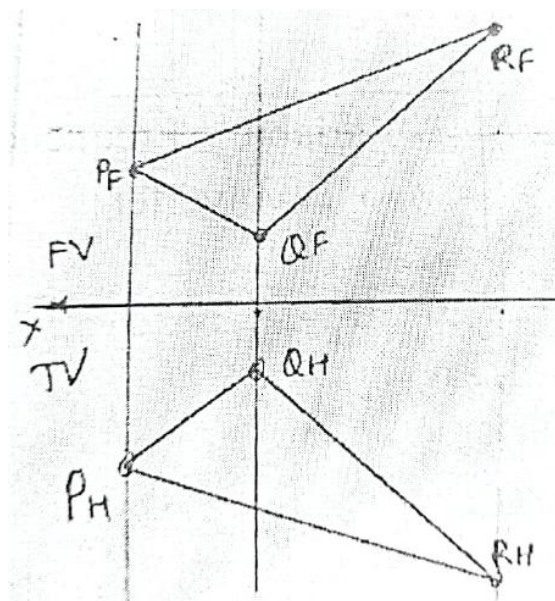
Subject Code: 71814 Subject Name: Engineering Graphics
Common subject Code (if any)

Sr. No.	Question	Marks
1	<p>Complete the projections of line PQ of 75 mm. Top view makes an angle of 45° with FRP and end Q is 65 mm above HRP Ref. Fig</p> <p style="margin-left: 20px;">FV PF •</p> <p style="margin-left: 40px;">X _____</p> <p style="margin-left: 20px;">Y</p> <p style="margin-left: 100px;">PH •</p> <p style="margin-left: 20px;">TV</p>	05
2	<p>Complete the projections of line AB if Grade is 75%, bearing is S45W and true length is 80 mm Ref. Fig</p> <p style="margin-left: 20px;">FV</p> <p style="margin-left: 150px;">• AF</p> <p style="margin-left: 40px;">X _____</p> <p style="margin-left: 20px;">Y</p> <p style="margin-left: 150px;">• AH</p> <p style="margin-left: 20px;">TV</p>	05
3	<p>The top view of 75 mm long line AB measures 65 mm, while the length of its front view is 50 mm. It's one end A is 10 mm above HP and 12 mm Infront of VP. Draw the projections of AB and determine its inclinations with HP and VP</p>	05
4	<p>The TV of 75 mm long line CD measures 50 mm. End C is in HP and 50 mm Infront of VP and it is above HP. Draw the projections of CD and find angles with HP & VP</p>	05
5	<p>Line AB is 75 mm long. Its FV and TV measures 50 mm and 60 mm. End A is 10 mm above HP and 15 mm Infront of VP. Draw projections of line AB and find angles with HP and VP</p>	05

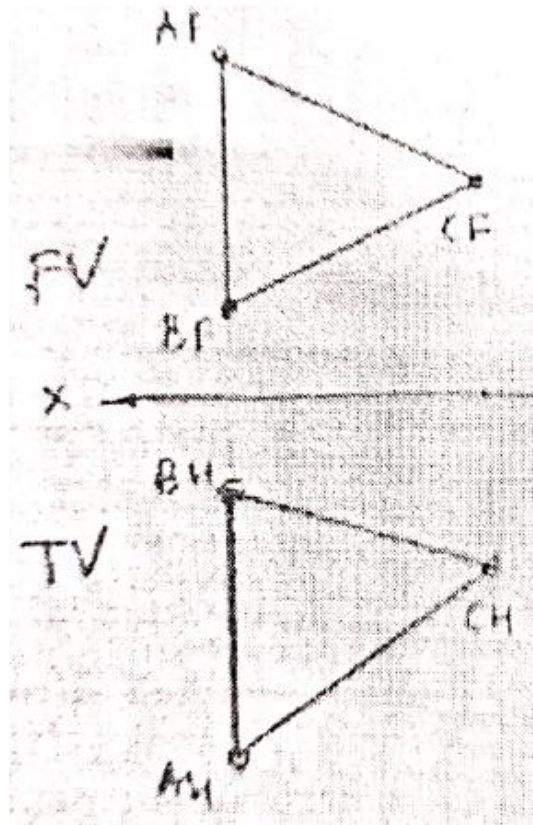
- 6 An end A of line AB is 16 mm above HP and 20 mm Infront of VP, while the end B is 60 mm above HP and 50 mm Infront of VP. If the end projectors are 50 mm apart, find the true length and true inclinations. 05
- 7 Draw the projections of line AB if its bearing is S45E at A. Its grade is 70 % and its length in front view is 70 mm. Assume point A to be 10 mm above HP and 15 mm Infront of VP. 05
- 8 Complete the projections of line PQ and find its true length if it bears due south at P having grade 75% at P 05



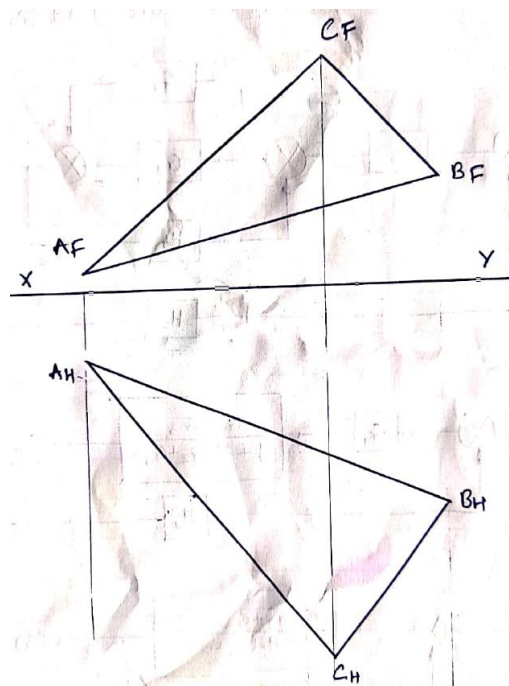
- 9 The TV of line MR has points Mf and Rf 12 mm and 60 mm below XY line and the FV has Mh and Fh above XY line. Determine true length and true inclinations of line MR with HP and VP, if the end projectors are 70 mm apart. 05
- 10 A line MN has end M on HP and 50 mm Infront of VP, while the end N is on VP and 40 mm above HP. If the inclination in TV is 35° , draw the projections and find True length and true inclinations. 05
- 11 Find the angle made by plane PQR with HP and perimeter of plane PQR. Ref fig. 05



- 12 Find the angle made by plane ABC with VP and perimeter of plane ABC. Ref. fig. 05

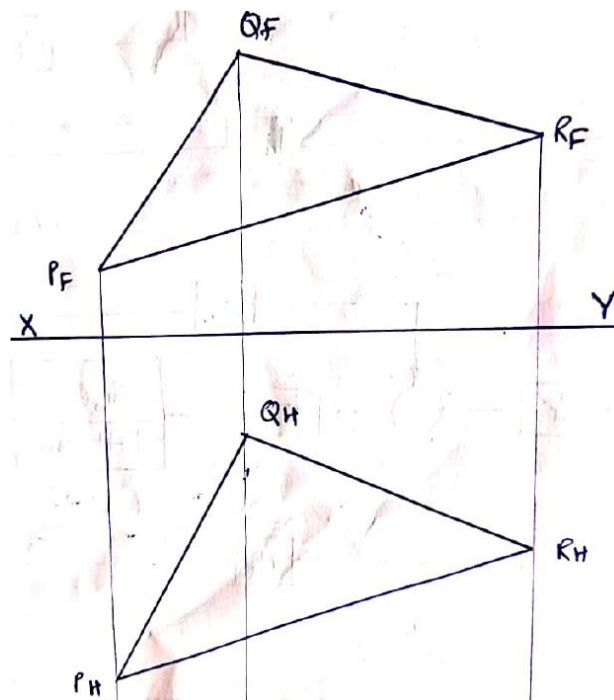


- 13 Draw the FV and TV of a regular pentagon of 50 mm sides when the surface of the plane is kept on VP having one of its side perpendicular to HP. 05
- 14 Find the angle made by plane ABC with HP and its perimeter 05



15 Draw the true shape of the plane PQR

05

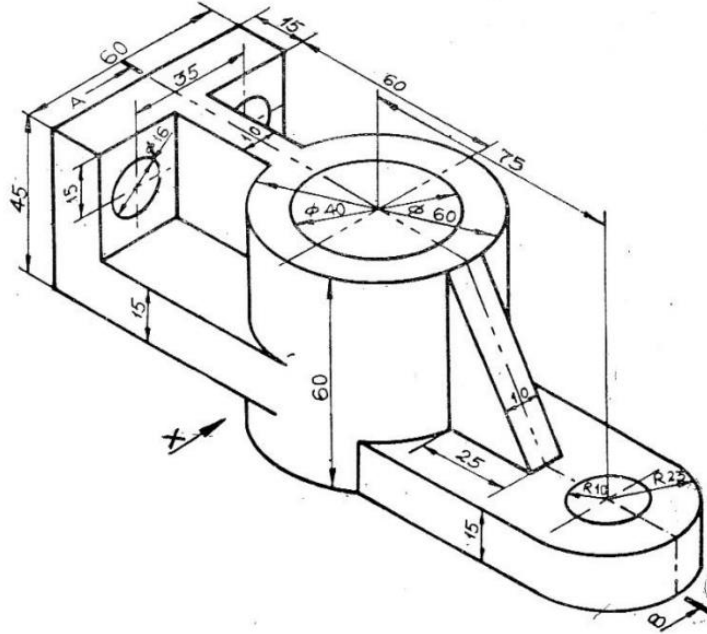


- 16 A hexagonal lamina of side 35 mm rests on one of its sides in the VP and parallel to HP. Draw its projections if the surface of the lamina is inclined at 45° to the VP. 10
- 17 A pentagonal plate of side 30 mm has one of the sides in the VP and parallel to HP. The surface of the plate makes an angle of 30° with the VP. Draw its projections. 10
- 18 A pentagonal plane lamina of sides 30 mm is resting on the HP on one of its corners so that the surface makes an angle of 60° with the HP. If the side opposite to this corner makes an angle of 30° with VP and is parallel to HP, draw FV and TV of the pentagon. 10
- 19 A semi-circular disc plate of diameter 65 mm has its straight edge in the VP and inclined at 45° to HP. Draw its projections if the surface of the plate makes an angle of 30° with the VP. 10
- 20 An isosceles triangular plate of 50 mm base and 75 mm altitude appears as an equilateral triangle of 50 mm in TV. Draw the projections of a plate if its 50 mm long edge is on the HP and inclined 45° to the VP. 10
- 21 Construct an ellipse when the distance of a fixed point from a fixed vertical line is 70 mm and its eccentricity is 75%. 05
- 22 Construct an ellipse when the length of major axis is 100 mm and length of minor axis is 70 mm 05
- 23 Construct an ellipse when the length of major axis is 100 mm and the distance between foci is 64 mm. 05
- 24 Construct a parabola when the distance of focus from directrix is 50 mm. 05
- 25 A aeroplane takes off from the ground, attains a maximum height of 120 m and crashes at 160 m from the point of take-off. Draw the path of crash aeroplane. 05

- 26 A ball is thrown from the top of the building 10 m in height crosses above the top of the pole 15 m tall and situated 5 m from the building or from the point of projection. Draw the path traced by the ball until it reaches the ground. 05
- 27 Construct a hyperbola when the distance of focus from the directrix is 65 mm and eccentricity is 1.5. 05
- 28 Construct a hyperbola when the distance of a fixed point from fixed vertical line is 70 mm and eccentricity is $\frac{3}{2}$ 05
- 29 A circle of 50 mm diameter rolls on a horizontal line without slipping for one and half revolutions. Trace the path of point P initially at the base of circumference of circle. 05
- 30 A wheel of diameter 60 mm having four spokes OA, OB, OC and OD rolls on a horizontal ground without slipping. The spoke OA is horizontal in its initial position with A to the left of O. After some moment once again, OA becomes horizontal with A to the right of O. Draw the path traced out by the point B which is initially at the top of wheel when it starts rolling. 05
- 31 Trace the path of point P for a circle of diameter 56 mm. The initial position of point P is at the top of wheel. Draw the cycloid for one complete revolution of a circle. 05
- 32 Draw the curve traced by end P of straight stick AP of 115 mm long when it rolls without slipping on a semicircle having its diameter AB=80 mm. Assume the stick AP to be vertical and tangential to the semicircle initially. 05
- 33 Draw the involute of a circle of 40 mm. 05
- 34 A wheel of 140 mm diameter has four spokes connecting the rim and hub. The hub diameter is 20 mm and wheel is rotating at 90 rpm. The particle of dust starts from the hub and travels along the spoke with a uniform angular velocity and reaches the rim after one second. Trace the path of particle. 05
- 35 A link 100 mm long, swings on a pivot O from its vertical position of rest to the right through an angle 60° and return to its initial position at uniform velocity. During that period point P moving at uniform speed along the link from a point at a distance of 12 mm from O, reaches to the end of link. Trace the path of point P 05
- 36 A right circular cylinder with 50 mm diameter and height 70 mm rest on HP such that the base is inclined at 60° to HP and top view of axis is inclined 45° to VP 10
- 37 A regular cone of 40 mm base diameter and 65 mm axis height is resting on HP on its apex, it is tilted to have its slant edge perpendicular to HP and it is further tilted to have its top view of the axis 45° to VP. Complete the projections of it. 10
- 38 A square pyramid side of base 40 mm and axis height 60 mm has one of the side of base in the HP. The axis of solid is inclined to HP at an angle of 30° and top view of axis is inclined at an angle 45° with the VP. Draw its projections by keeping apex nearer to the observer. 10
- 39 A Hexagonal prism, side of base 35 mm and axis length 60 mm has one of the side of its base in HP which makes an angle of 30° with VP and axis inclined at an angle 45° with HP. Draw its projections. 10
- 40 A pentagonal pyramid of 50 mm base sides and height 90 mm is lying on one of its triangular surface on the ground, such that the top view of the axis is inclined at an angle of 45° to the VP. Draw its front view and top view when apex is nearer to VP. 10

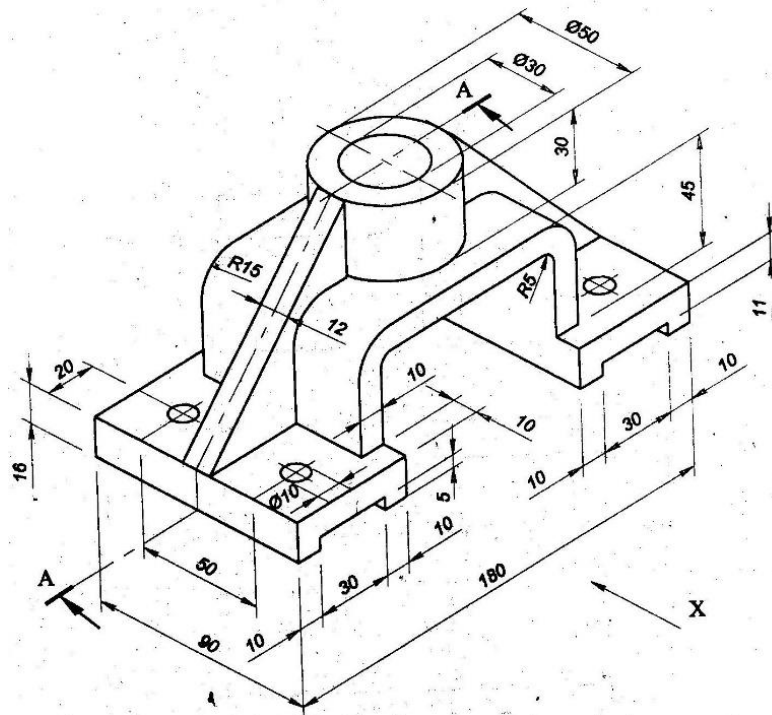
- 41 From the following figure draw,
- i) Sectional front view along A-B in the direction X
 - ii) Top view
 - iii) Show important dimensions

15



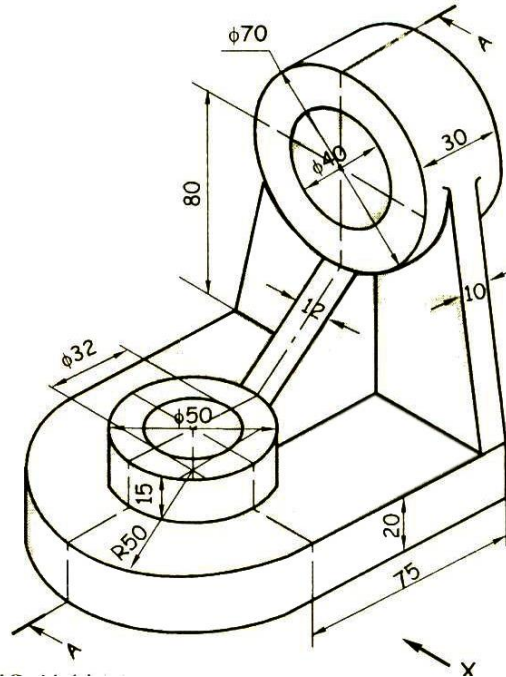
- 42 From the following figure draw,
- i) Sectional front view along A-A in the direction X
 - ii) Left hand side view
 - iii) Show important dimensions

15



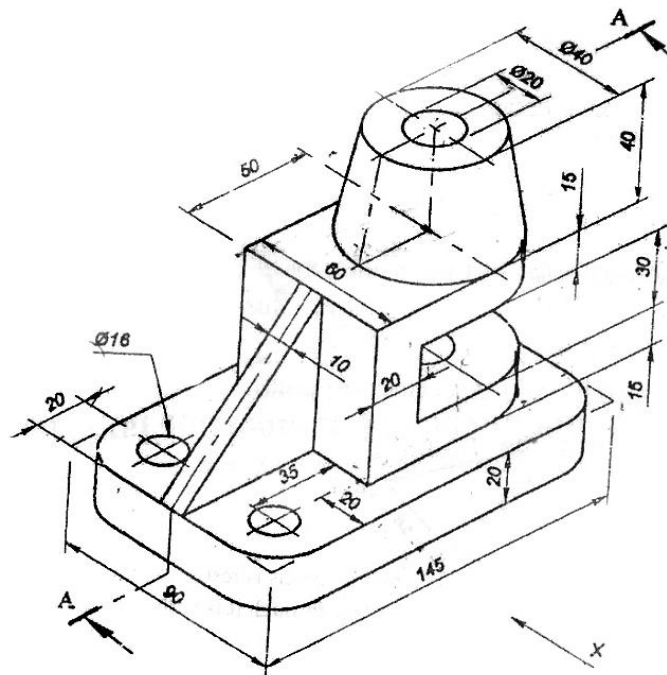
- 43 From the following figure draw,
- Sectional front view along A-A in the direction X
 - Left hand side view
 - Show important dimensions

15



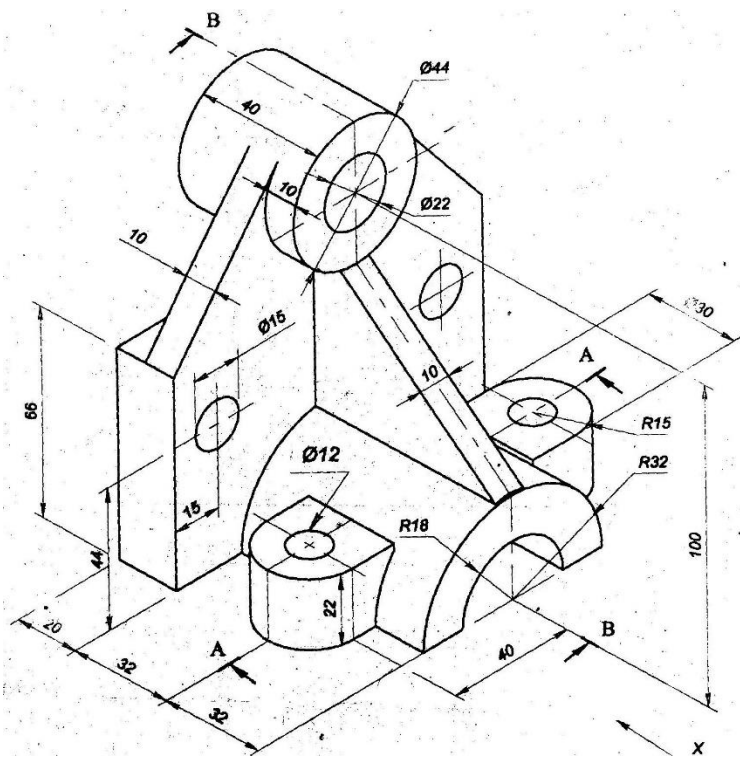
- 44 From the following figure draw,
- Sectional front view along A-A in the direction X
 - Top view.
 - Show important dimensions

15



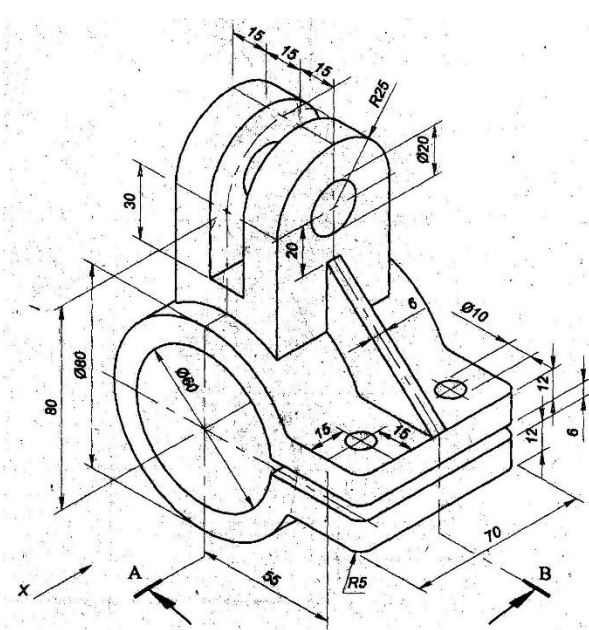
- 45 From the following figure draw,
- Front view in the direction X.
 - Sectional side view along plane B-B.
 - Show important dimensions

15



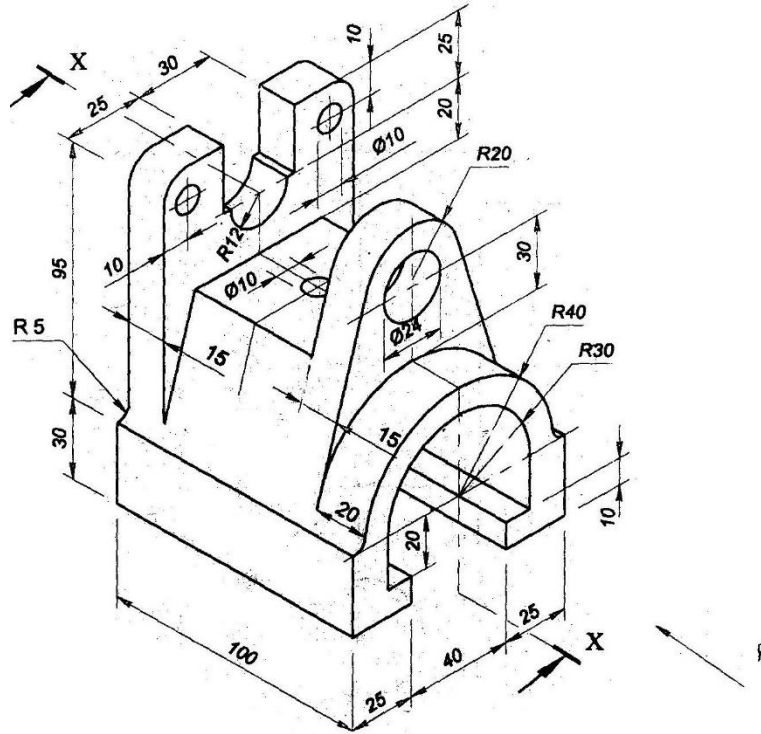
- 46 From the following figure draw,
- Sectional front view along B-B in the direction X
 - Right hand side view
 - Show important dimensions

15



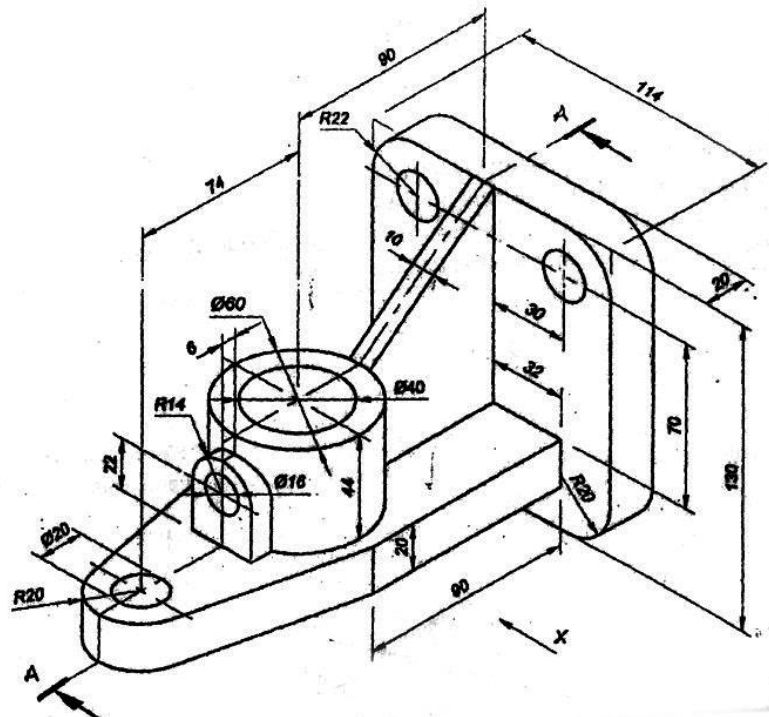
- 47 From the following figure draw,
- Front view in the direction F
 - Sectional Left hand side view along X-X
 - Show important dimensions

15



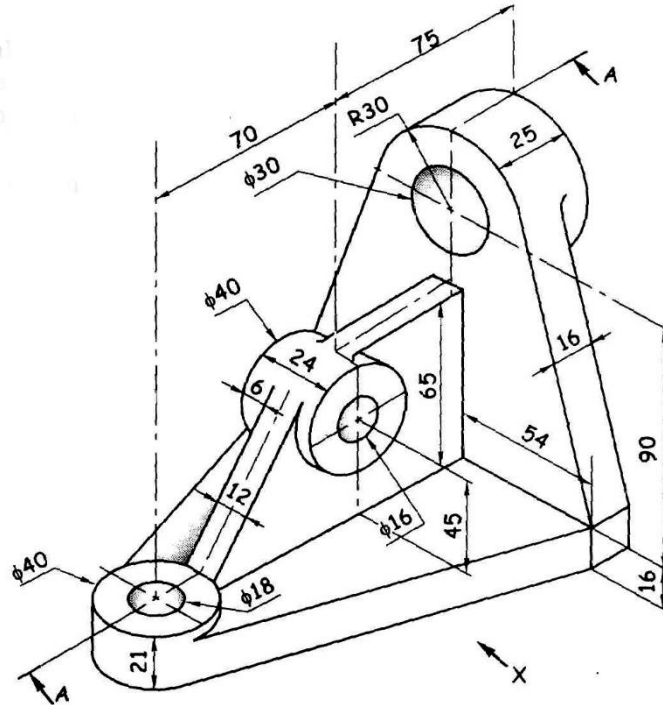
- 48 From the following figure draw,
- Sectional front view along A-A in the direction X
 - Left hand side view
 - Show important dimensions

15



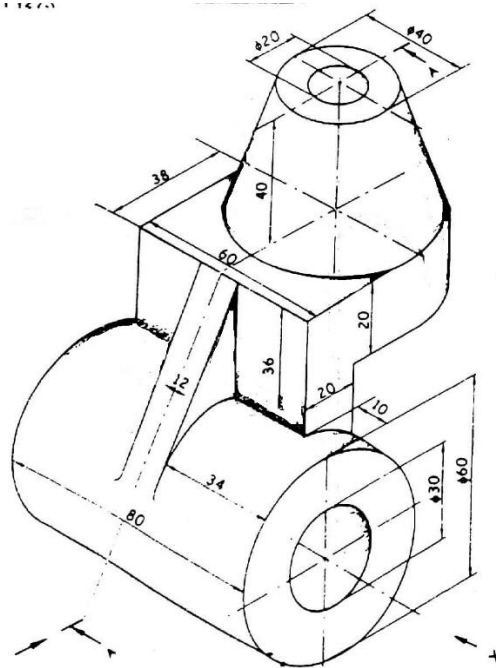
- 49 From the following figure draw,
- Sectional front view along A-A in the direction X
 - Left hand side view
 - Show important dimensions

15



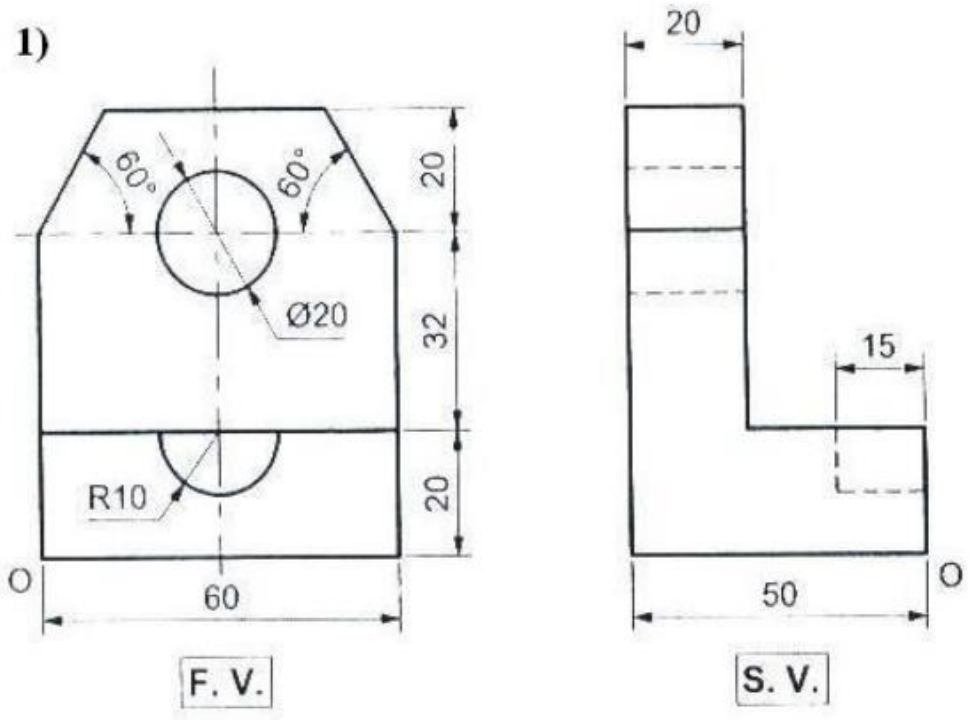
- 50 From the following figure draw,
- Sectional front view along A-A in the direction X
 - Left hand side view
 - Show important dimensions

15



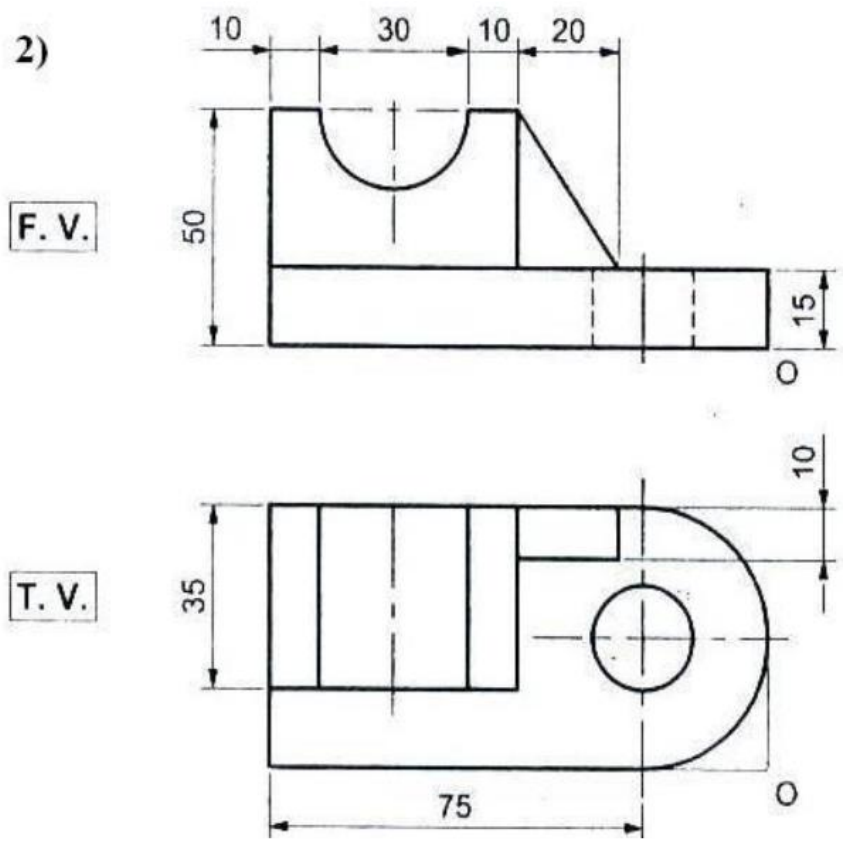
51 Figure shows the views, Draw its isometric view

10



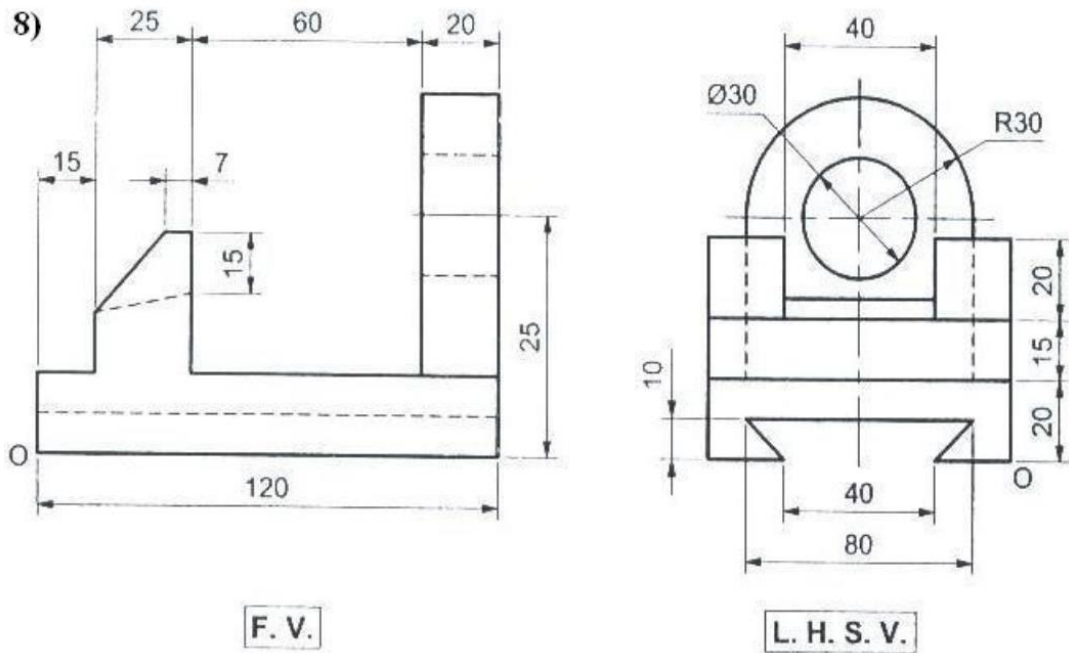
52 Figure shows the views, Draw its isometric view

10



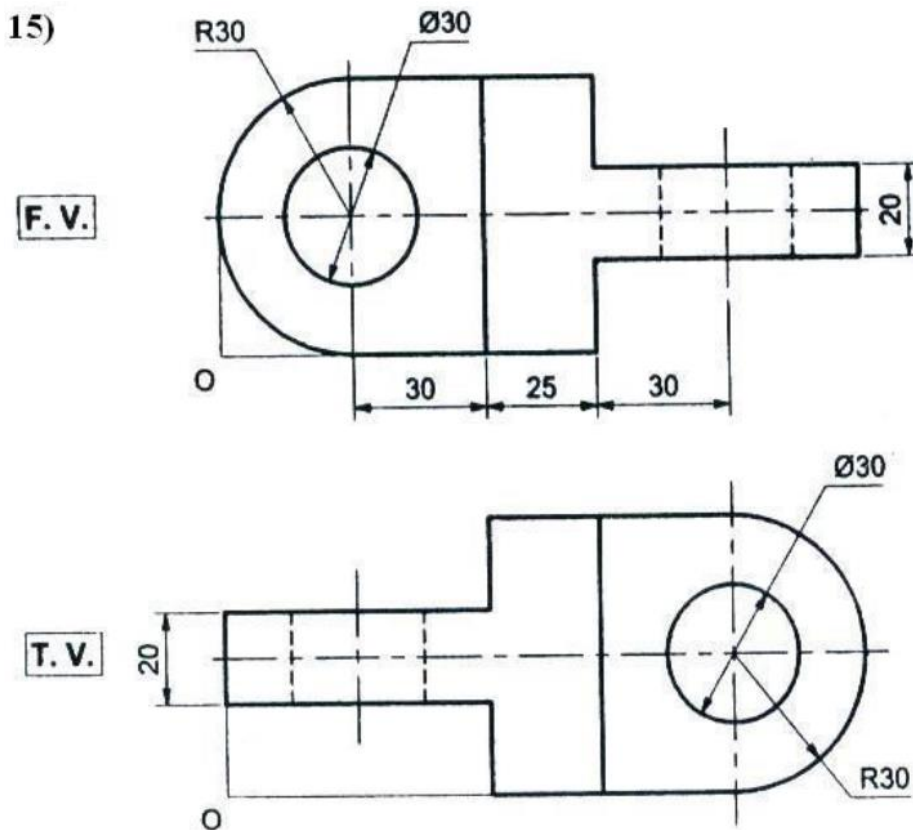
53 Figure shows the views, Draw its isometric view

10



54 Figure shows the views, Draw its isometric projection

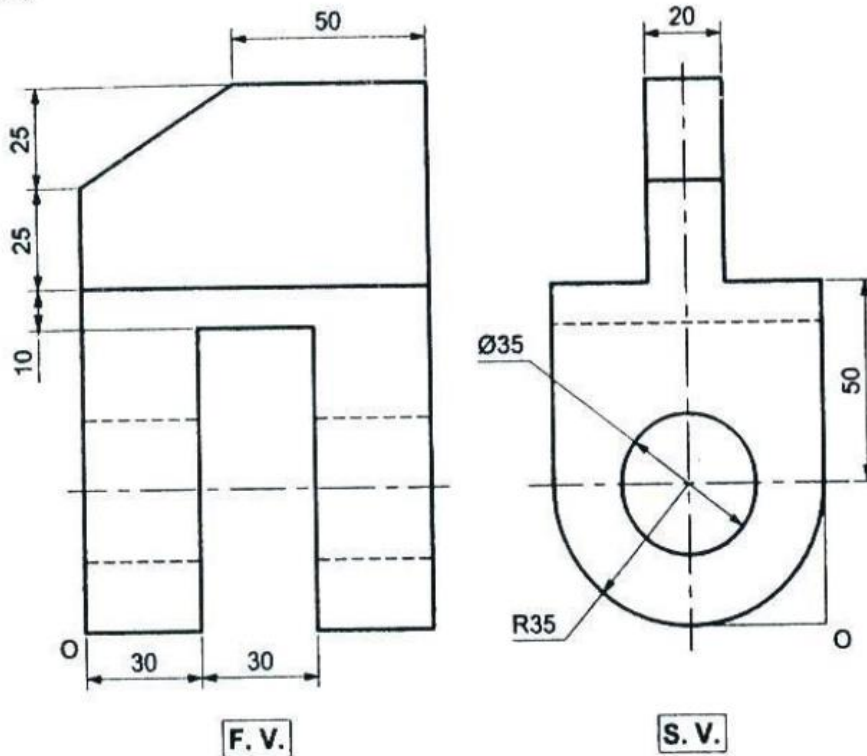
10



55 Figure shows the views, Draw its isometric view

10

16)



- 56 A hexagonal based pyramid with base side 25 mm and height 50 mm rests on HP with two opposite base edges parallel to VP, the pyramid is cut by section plane which is perpendicular to VP and inclined 45° to HP and passing through its extreme left hand side corner. Draw the F.V., sectional T.V., and development of remaining part of pyramid 10
- 57 A square prism base 45 mm and 90 mm long axis, has its base on the ground and faces equally inclined to VP. It is cut by a plane inclined 60° to HP and passing through a point on axis 65 mm above the ground. Draw its F.V., sectional T.V. and develop the remaining part of prism after taking the section. 10
- 58 A cone with 60 mm diameter and 70 mm height rests on HP on its base. It is cut by an auxiliary vertical plane with 60° to VP and 10 mm away from axis of cone. Draw sectional F.V., T.V., and develop the remaining part of cone after taking the section. 10
- 59 A cylinder with 50 mm base diameter and 68 mm height of axis is cut by a section plane passing through the midpoint of axis of cylinder making an angle of 25° to the H.P. Draw the F.V., sectional T.V. and develop the remaining part of cylinder after taking the section. 10
- 60 A hexagonal pyramid of 25 mm base edge and 56 mm axis height, resting on HP on its base with two of its opposite base edges perpendicular to VP. The pyramid is cut by a section plane making 30° to HP and passing through a point on the axis 20 mm below the apex point. Draw its F.V., sectional T.V., and develop the remaining part of pyramid after taking the section. 10