

I B.Tech Supplementary Examinations, Aug/Sep 2008
ENGINEERING DRAWING
(Common to Computer Science & Engineering and Computer Science &
Systems Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Draw a straight line AB of any length. Make a point F, 65mm from AB. Trace the paths of a point P moving in such a way that the ratio of its distance from the point F, to its distance from AB is
 - (a) 3:2
 - (b) 1Plot at least 10 points. Name each curve. Draw a normal and a tangent to each curve at a point on it 45mm from F. [8+8]
2. A circle of 115 mm diameter rolls on another circle of 75mm diameter with internal contact. Draw the locus of a point on the circumference of rolling circle for its one complete revolution. [16]
3. (a) Draw the projectors of the following points in different quadrants.
 - i. Point A, 25mm in front of V.P. and 30mm above H.P.
 - ii. Point B, 22mm behind V.P. and 28mm above H.P.
 - iii. Point C, 28mm behind V.P. and 30mm below H.P
 - iv. Point D, 40mm in front of V.P. and 25mm below H.P(b) A point P is 25mm in front of the V.P. and 40 mm above the H.P. Another point Q is 40mm in front of the V.P. and 25mm above the H.P. The distance measured between the projectors is 40mm. Draw the projections and find the distance between P and Q. [8+8]
4. A line AB 120mm long is inclined at 45° to the H.P. and 30° to the V.P. Its mid point C is in V.P. and 20mm above H.P. The end A is in the third quadrant, and B is in the first quadrant Draw the projections of the line. [16]
5. A regular pentagon of 30mm side, is resting on one of its edges on H.P. which is inclined at 45° to V.P. Its surface is inclined at 30° to H.P. Draw its projections. [16]
6. An equilateral triangular prism of side of base 25mm and axis 50mm long, is resting on an edge of its base on H.P. The face containing that edge is inclined at 30° to H.P. Draw the projections of the prism, when the edge on which the prism rests, is inclined at 60° with V.P. [16]
7. A cylindrical block of base, 60mm diameter and height 90mm, standing on the H.P. with its axis perpendicular to the H.P. Draw its isometric view. [16]

8. Draw the following views of the object shown in figure 8. All dimensions are in mm

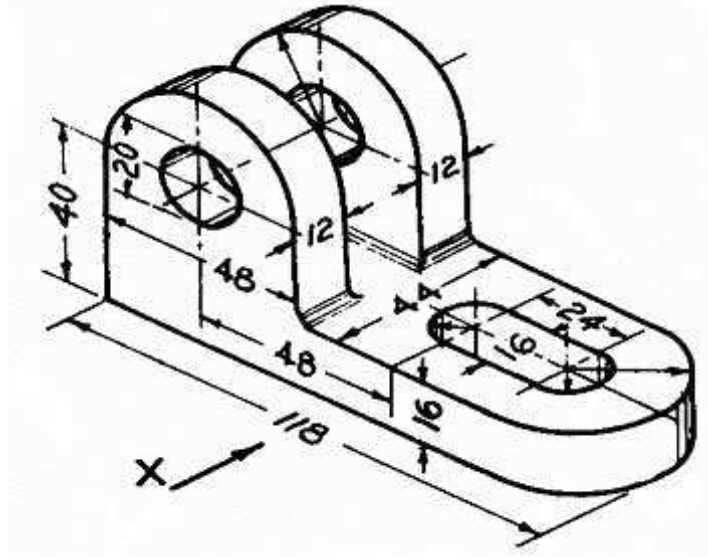


Figure 8

- (a) Front view
- (b) Top view
- (c) Side view from the right.

[16]

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1. (a) A fountain jet discharges water from ground level at an inclination of 50° to the ground. The jet travels a horizontal distance of 9cm from the point of discharge and falls on the ground. Trace the path of the jet.
(b) The distance between two fixed points is 90mm. A point P moves such that the difference of its distance from the two fixed points is always equal to 60mm. Draw the loci of P. [8+8]
2. A circle of 50mm diameter, rolls on a horizontal line for half a revolution clockwise and then on a line inclined at 60° to the horizontal for another half clockwise. Draw the curve traced by a point P on the circumference of the circle, taking the top most point on the rolling circle as the initial position of the generating point. [16]
3. (a) Draw the projectors of the following points in different quadrants.
 - i. Point A, 25mm in front of V.P. and 30mm above H.P.
 - ii. Point B, 22mm behind V.P. and 28mm above H.P.
 - iii. Point C, 28mm behind V.P. and 30mm below H.P.
 - iv. Point D, 40mm in front of V.P. and 25mm below H.P.(b) A point P is 25mm in front of the V.P. and 40 mm above the H.P. Another point Q is 40mm in front of the V.P. and 25mm above the H.P. The distance measured between the projectors is 40mm. Draw the projections and find the distance between P and Q. [8+8]
4. A line AB, 65mm long, has its end A 20mm above the H.P. and 25mm in front of the V.P. The end B is 40mm above the H.P. and 65mm in front of the V.P. Draw the projections of AB and show its inclinations with the H.P. and the V.P. [16]
5. (a) A rectangle ABCD of size 60mm \times 40mm, has a corner on H.P. and 20mm away from V.P. All the sides of the rectangle are equally inclined to H.P. and parallel to V.P. Draw its projections.
(b) Draw the projections of a regular pentagon of 40mm side, having its surface inclined at 30° to V.P. and the side on which it rests on V.P., makes an angle of 60° with H.P. [8+8]
6. Draw the projections of a hexagonal pyramid, with side of base 30mm and axis 70mm long, which is resting with a slant face on H.P. such that, the axis is parallel to V.P. [16]

- 7. A cylindrical block of base, 60mm diameter and height 90mm, standing on the H.P. with its axis perpendicular to the H.P. Draw its isometric view. [16]
- 8. Draw the elevation, plan, left and right side views of the bracket shown in the figure 8. (All dimensions are in mm). [16]

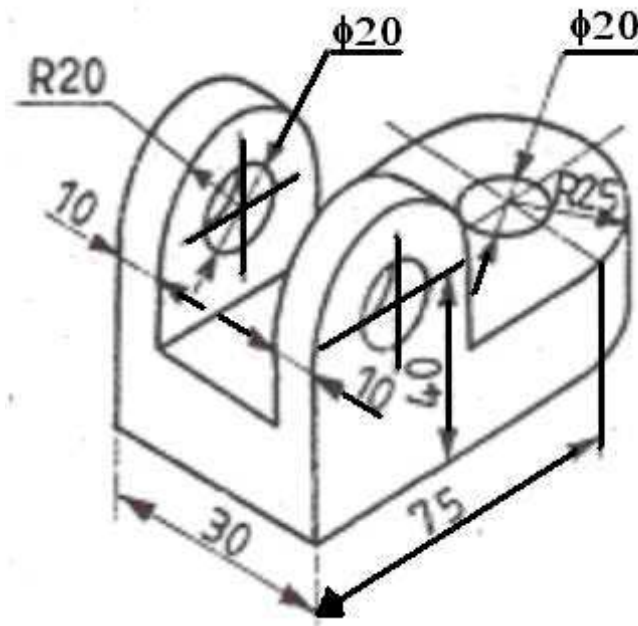


Figure 8

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1. Construct an ellipse when the distance between the locus and the directrix is 30mm and the eccentricity is $\frac{3}{4}$. Draw the tangent and normal at any point P on the curve using directrix. [16]
2. Show by means of a drawing that when the diameter of the directing circle is twice that of the generating circle, the hypocycloid is a straight line. Take the diameter of the generating circle equal to 50mm. [16]
3. (a) Draw the projectors of the following points in different quadrants.
 - i. Point A, 25mm in front of V.P. and 30mm above H.P.
 - ii. Point B, 22mm behind V.P. and 28mm above H.P.
 - iii. Point C, 28mm behind V.P. and 30mm below H.P.
 - iv. Point D, 40mm in front of V.P. and 25mm below H.P.(b) A point P is 25mm in front of the V.P. and 40 mm above the H.P. Another point Q is 40mm in front of the V.P. and 25mm above the H.P. The distance measured between the projectors is 40mm. Draw the projections and find the distance between P and Q. [8+8]
4. A line CD 80mm long is inclined at an angle of 30° to H.P. and 45° to V.P. The point C is 20mm above H.P. and 30mm in front of V.P. Draw the projections of the straight line. [16]
5. Draw the projections of a regular pentagon of 20mm side, with its surface making an angle of 45° with H.P. One of the sides of the pentagon is parallel to H.P. and 15mm away from it. [16]
6. A square prism, base 40mm side and height 65mm, has its axis inclined at 45° to the H.P. and has an edge of its base, on the H.P. and inclined at 30° to the V.P. Draw its projections. [16]
7. A cylindrical block of base, 60mm diameter and height 90mm, standing on the H.P. with its axis perpendicular to the H.P. Draw its isometric view. [16]
8. Draw the elevation, plan, left and right views of the part shown in the figure 8. (All dimensions are in mm). [16]

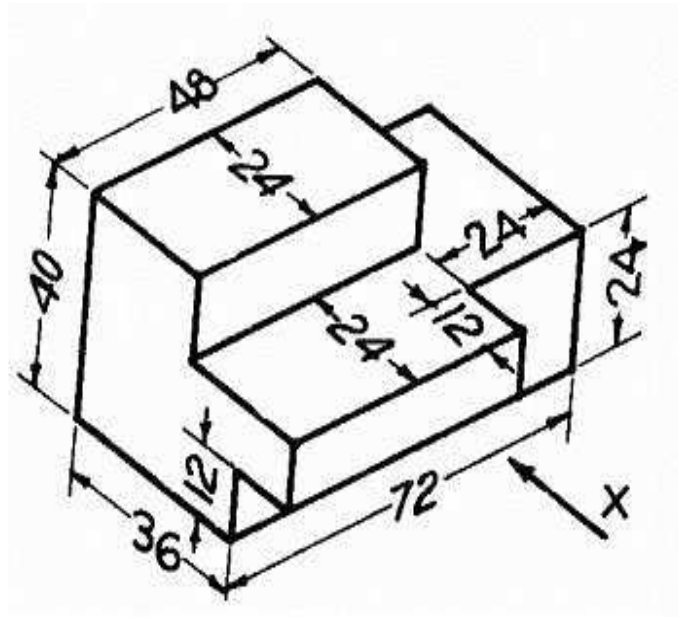


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1. (a) Inscribe an ellipse in a parallelogram having sides 150mm and 100mm long and an inclined angle of 120° .
(b) Draw a rectangle having its sides 125mm and 75mm long. Inscribe two parabolas in it with their axis bisecting each other. [8+8]
2. Construct a cycloid, given the diameter of the generating circle is 40mm. Draw a tangent to the curved at a point on it 30mm from the line. [16]
3. (a) Two points A and B are on H.P; the points A being 30mm in front of V.P., while B is 45mm behind V.P. The line joining their top views makes an angle of 45° with xy. Find the horizontal distance between two points.
(b) Find the distance between two points A and B when B is 40mm in front of V.P. and 25mm above H.P. The point A is 25mm behind the V.P. and 40mm below H.P. The distance between projectors measured along xy line being 40mm. [8+8]
4. Draw the projections of a line AB, 90mm long, its mid point M being 50mm above the H.P. and 40mm in front of the V.P. The end A is 20mm above the H.P. and 10mm in front of the V.P. Show the inclinations of the line with the H.P. and the V.P. [16]
5. A square lamina ABCD of 30mm side, rests on one of its corners on the ground. Its plane is inclined at 35° with H.P. and diagonal DB inclined at 65° to V.P. and parallel to H.P. Draw its projections. [16]
6. Draw the projections of a hexagonal pyramid, with side of base 30mm and axis 70mm long, which is resting with a slant face on H.P. such that, the axis is parallel to V.P. [16]
7. A cylindrical block of base, 60mm diameter and height 90mm, standing on the H.P. with its axis perpendicular to the H.P. Draw its isometric view. [16]
8. Draw the elevation, plan and left and right views of the bracket shown in the figure 8. (All dimensions are in mm). [16]

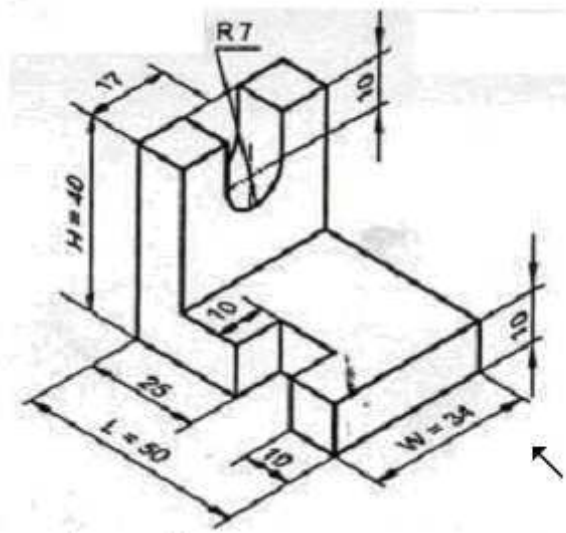


Figure 8
