

NTK/KW/15 – 7289

First Semester B. E. (C.B.S.) Examination

ENGINEERING GRAPHICS I

Time : Three Hours]

[Max. Marks : 40

- N. B. :
- (1) All questions carry marks as indicated.
 - (2) Solve four questions as follows:
 - (3) Que No. 1 OR Que No.-2
Que No. 3 OR Que No.-4
Que No. 5 OR Que. No.-6
Que No. 7 OR Que. No.-8
 - (4) Due credit will be given to neatness and adequate dimensions.
 - (5) Retain Construction Lines.
 - (6) Use of Drawing instruments is permitted.
 - (7) Assume suitable data wherever necessary.

1. (a) A perfect gas follows the law $PV = \text{constant}$. At a pressure 3 Kgf/cm^2 absolute, the volume of gas being 2 m^3 . Draw the graph P vs V for pressure range 1 Kgf/cm^2 to 10 kgf/cm^2 absolute. Name the curve. 5
- (b) The projectors of ends of a line AB are 60 mm apart. End A is 50 mm above the HP and 15 mm in front and VP. While the end B is 10 mm above

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Contd.

HP and 60 mm in front of VP. Draw its projections and determine its inclination with HP and VP. 5

OR

2. (a) A link OA of 100 mm long rotates about O in clockwise direction. A point P on the link which is at 15 mm from O moves with uniform velocity and reaches the end A, while the link rotates through one and half revolutions. Trace the path of the point P and name the curve. 5
- (b) A line AB 75 mm long is inclined at 40° to the VP. Its top view measures 60 mm. One end of the line is 15 mm above HP and 25 mm in front of VP. Draw its projections and determine its inclination with HP. 5
3. (a) The one side of a regular hexagon of 30 mm side is in HP, while the opposite side is 45 mm above HP and inclined at 30° to the VP. Draw the projections of plane and find its surface inclination with the HP. 5
- (b) Front view of a plane is square a'b'c'd' having diagonal 50 mm. Diagonal a'c' is parallel to xy. The top view of a plane is rhombus a'b'c'd' having shorter diagonal ac = 50 mm and longest

diagonal $bd=70$ mm perpendicular to xy . Draw the projections and determine the shape of plane.

5

OR

4. Draw the projection of a cube of 40 mm long edges resting on the HP on one of its corner with a solid diagonal perpendicular to the VP. 10
5. (a) Figure 1 shows the pictorial view of an object. Draw its :
- (i) Front view looking in direction x.
 - (ii) Side view looking in direction y.

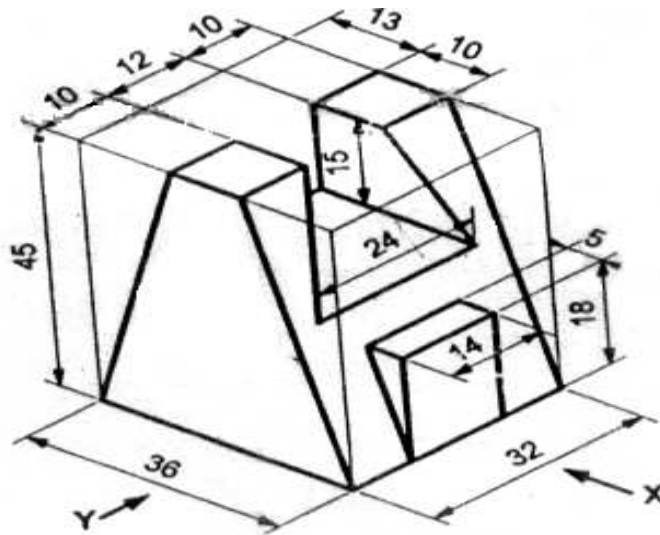


Figure 1

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- (b) Fig. 2 shows pictorial view of an object. Draw :
- Front view looking in direction x.
 - Top view.

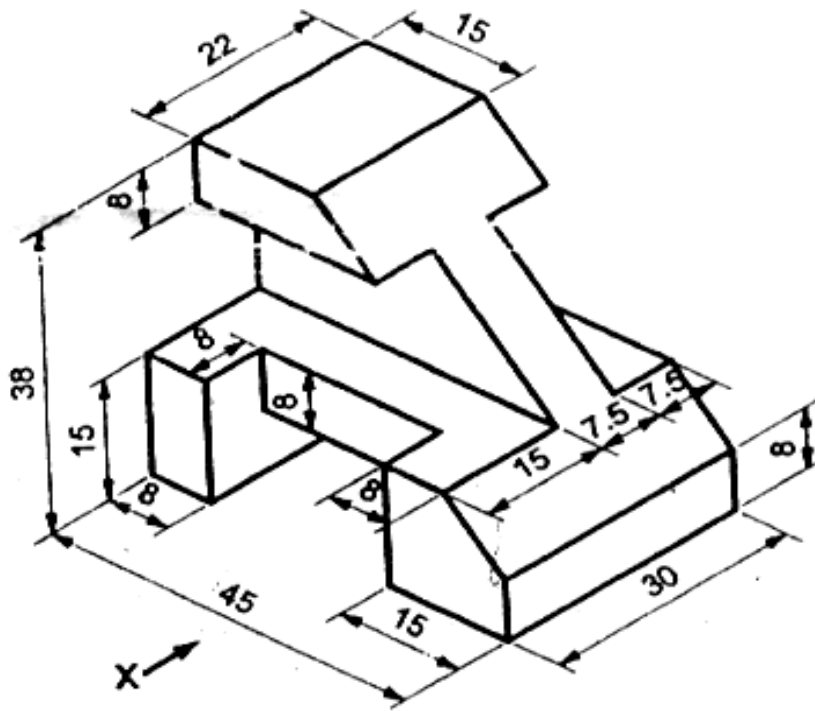


Figure 2 5

OR

6. Fig. 3 shows pictorial view of an object Draw :—
- (i) Front view looking in direction x.
 - (ii) Side view looking in direction y.
 - (iii) Top view.

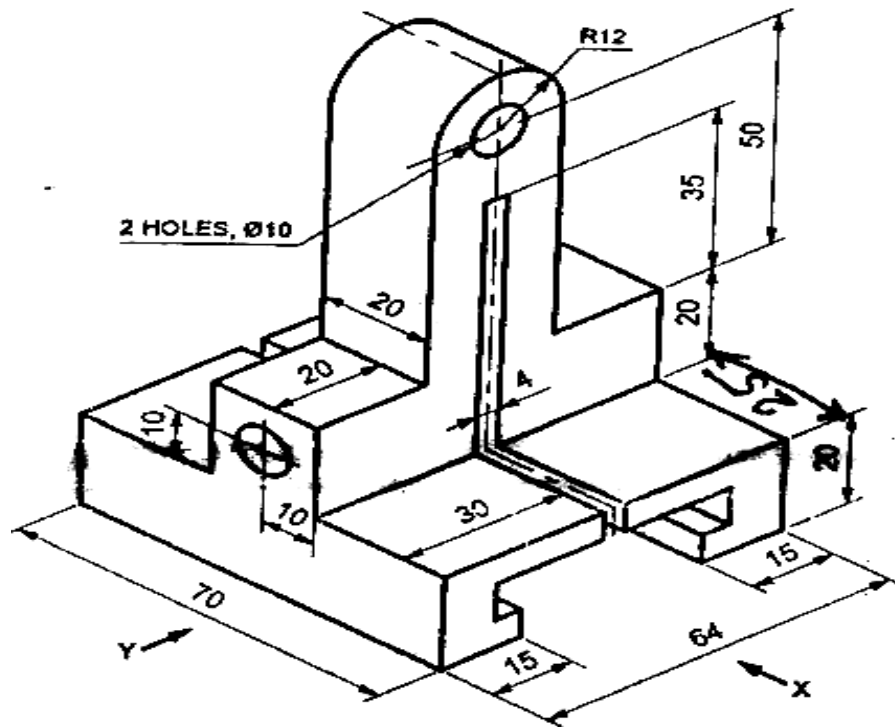


Figure 3.

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7. (a) Construct an isometric scale assuming suitable length. 2
- (b) Draw the isometric projection for a given assembly.
- (i) A circular slab of diameter 80 mm and thickness 30 mm resting on its circular base on HP.
- (ii) A pentagonal prism side of base 30 mm and height 50 mm resting centrally on the top of circular face of circular slab with one of the sides of base of prism is perpendicular to VP. 8

OR

8. Fig. 4 shows the front view and top view of an object. Draw isometric view.

[Fig on Next page]

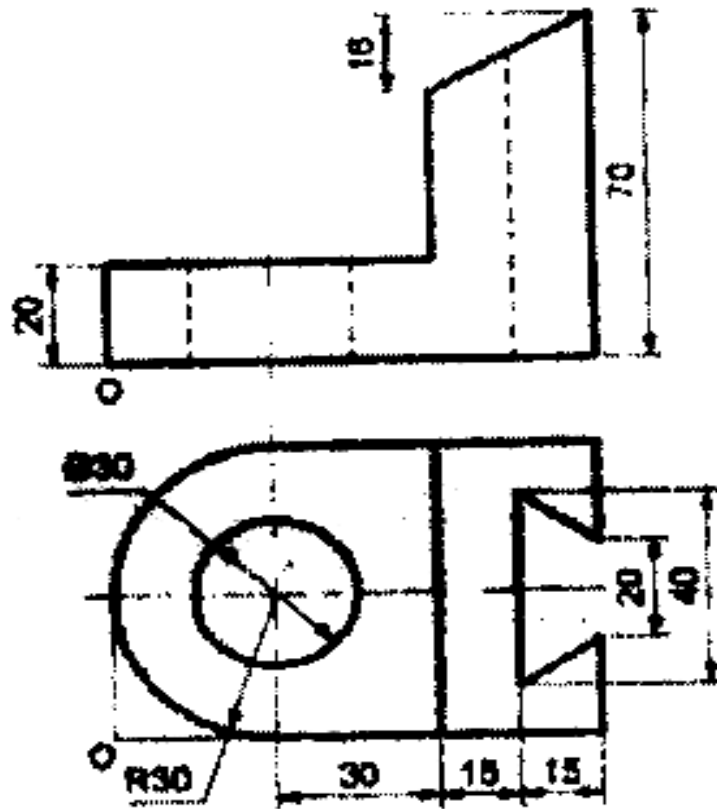


Fig. 4

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