B.E. All Branches First Semester (C.B.S.) / B.E. (Fire Engineering) First Semester

Engineering Graphics – I

P. Pages : 3 **NRT/KS/19/3286/3935**

Time : Three Hours * 0 1 2 1 * Max. Marks : 40

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Due credit will be given to neatness and adequate dimensions.
7. Assume suitable data whenever necessary.
8. Illustrate your answers whenever necessary with the help of neat sketches.
9. Use of non programmable calculator is permitted.
10. Retain construction lines.

1. a) A perfect gas follows the law PV = C. At a pressure of $3 kgf / cm^2$ absolute the volume of gas being $2m^3$. Draw the graph P v/s V for pressure range of $1 kgf / cm^2$ 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 H.P. and 25 mm in front of V.P. while the end B is 20 mm above HP and 75 mm in front of V.P. Draw its projections and find its inclinations with H.P. and V.P. **5**

OR

2. a) A coin of 40 mm diameter rolls along a straight line on a flat surface. Draw the curve traced out by a point 'P' on its circumference for on complete revolution. **5**

b) A Line AB 70 mm long is inclined at an angle 30° to the H.P. Its end A is 10 mm above the H.P. and 15 mm in front of the VP, front view length of the line is 50 mm. Draw the projections of Line AB. **5**

3. a) A thin plate, perpendicular to VP and inclined at 45° to HP appears as a regular pentagon of 30 mm side in T.V. considering that the plate is resting on one of its side in HP, draw the projections and determine the true shape of the plate. **5**

b) A regular hexagon of 30 mm side, has a corner on the H.P. It's surface is inclined at 45° to the H.P. and the TV diagonal through the corner which is on H.P. makes angle of 40° with V.P. Draw its projections. **5**

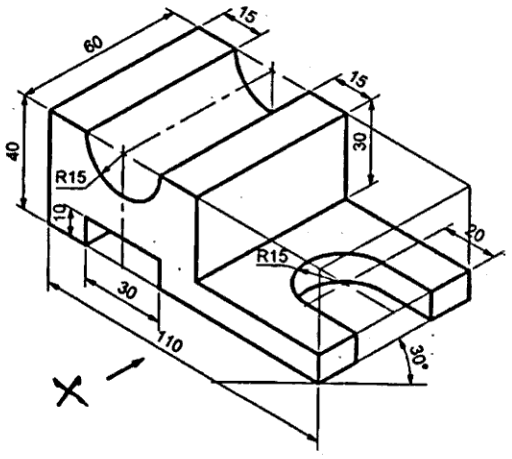
OR

4. A square pyramid of edge of base 40 mm and length of axis 80 mm is resting on a side of base on the H.P. The axis of the pyramid is inclined at 30° to the H.P. and 45° to the V.P. Draw its projections. **10**

5. a) Pictorial view of the object is shown in the figure no. 1 **5**

Draw

i) Front View from X. ii) Top View



b) Pictorial view of the object is shown in figure no. 2 **5**

Draw

i) Front View from X. ii) Side View from the right.

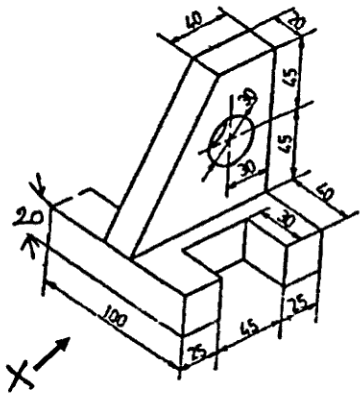


Figure no. 2.

OR

6. Pictorial view of the object is shown in the figure no. 3. **10**

Draw

i) F.V. from X.

ii) Side View from right

iii) Top View

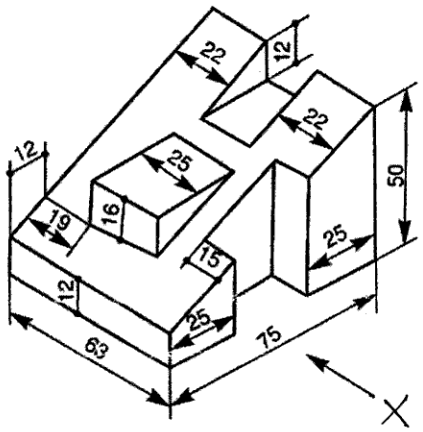


Figure no. 3.

7. A right circular cylinder of base circle diameter 40 mm and axis 60 mm long is kept centrally on the hexagonal, prism, side of base 40 mm and height 50 mm. The hexagonal prism rests on its base on H.P. with one side of base perpendicular to V.P. Draw the isometric projection for the given arrangement keeping their common axis vertical. Show the direction of viewing and also construct the scale used. **10**

OR

8. Draw an isometric view of an object whose projections are shown in fig. 4. **10**

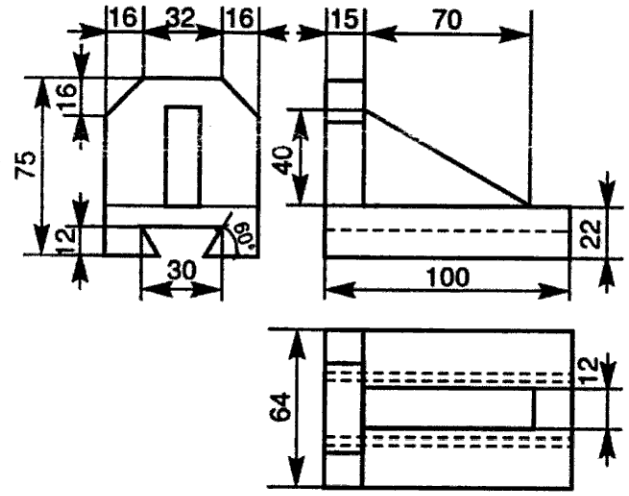


Figure no. 4

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