INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY
Department of Mechanical Engineering

ME119 – Engineering Drawing and Graphics 2017-18 Semester II

Sheet 3: Projection of Points and Lines

Instruction:

- Practice all problems in rough before coming to the Drawing Session.
- For more details of the exercises in this sheet, refer Chapters 1 to 5 of the text book (N. D. Bhatt, Engineering Drawing, 50th Ed.).
- Scale, dimension the drawings suitably. Label the important nodes/points on the drawings. Mention the scale if it is not 1:1
- You may use the MIRROR command to reflect points around lines of symmetry
- Make the title block and name plate before starting the drawing
- Use 1st angle projection unless mentioned otherwise

1. Figure 1 below shows the projections of an object using first angle projection. Draw all three views of the object using third angle projection.

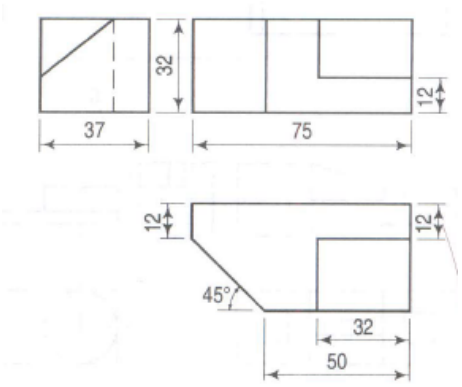

Figure 1: 1st angle projection of object

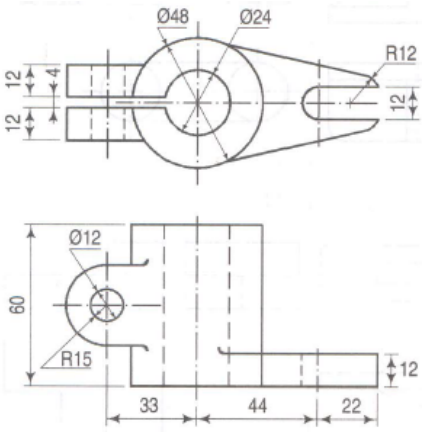

Figure 2: 3rd angle projection of object

2. In Figure 2 above, an object has been drawn using 3rd angle projection. Draw both views of the object using 1st angle projection

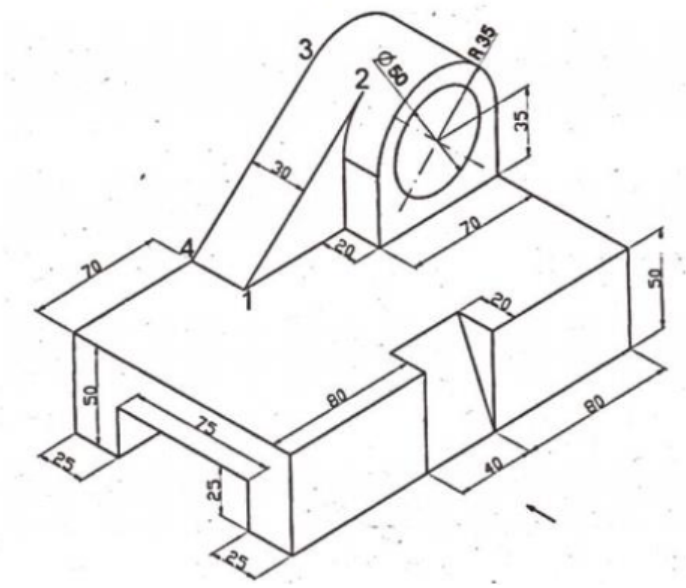

Figure 3: Pictorial view of object

3. Figure 3 shows pictorial view of an object, with dimensions. Arrow indicates the viewing direction. Draw the Front View (FV), Top View (TV) and Right Hand Side View (RHSV) of the object using 1st angle projection. Indicate hidden lines and center lines clearly. (Note: Ignore the labeling 1-2-3-4 on the drawing.)

4. A 90 mm long line AB is inclined at 40 deg to the HP. The end A is 12 mm above HP and end B is 52 mm in front of VP. The FV of the line is 76 mm. Draw the FV and TV projections of the line.

5. For a given line AB (lying in the first quadrant), the distance of point A from HP and VP are 60 mm and 15 mm respectively, while the distance of point B from HP and VP are 20 mm and 35 mm respectively. The length of the line joining AB is 80 mm. Draw the FV and TV projections of the line.

6. An 85 mm line makes an angle of 20 deg w.r.t. H.P. and 40 deg angle to the V.P. Its midpoint is located 15 mm from both the H.P. and V.P. Draw FV and TV projections of the line.