

Indian Institute of Technology, Delhi
 Department of Mechanical Engineering
 Major (Jan-May 2008) (Graphics Science (MEL 110))

Max. Marks: 70

Time: 2 Hrs 30 Min

Q1. A circular pipe of 30mm diameter merges into a spherical tank of 100mm diameter as shown in the Figure 1. Draw the curve of intersection between the two surfaces. (15)

Q2. Draw the development of the one-quarter of the sphere (OQAB in figure 1) in Q1, which contains the curve of the intersection. Consider a single sector of 90° . Also draw the development of the cylindrical pipe. (15)

Q3. Draw in the first angle projection the sectional front view (section AA) in the direction of arrow X and the left side view of the object shown in Fig. 3. Also dimension the views according to the unidirectional system of dimensioning. (15)

Q4. A hexagonal oblique pyramid, as shown in figure 4, is cut by a section plane that is normal to the axis OA. The section plane cuts the axis OA at a distance equal to $\frac{1}{3}$ rd of its true length from point A. Draw the FV and TV of the sectioned solid. (10)

Q5. Top and front view of a solid are shown in fig. 5. A hole whose axis is normal to the surface e-f-g is to be made such that the other end of the axis of the hole passes through the center of the rectangular base a-b-c-d. a) Find the true depth of the hole. b) Locate the center of the hole on the surface e-f-g in the TV & FV and specify its distance from the point 'c' in these views. (7+8)

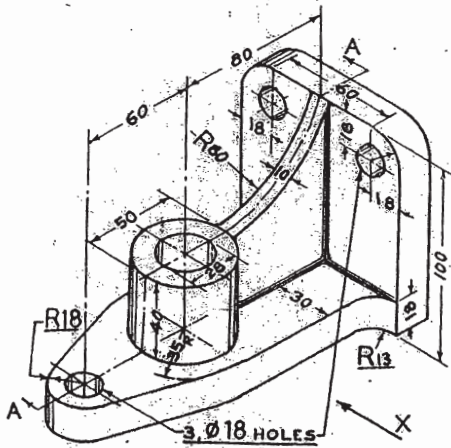


Figure 3

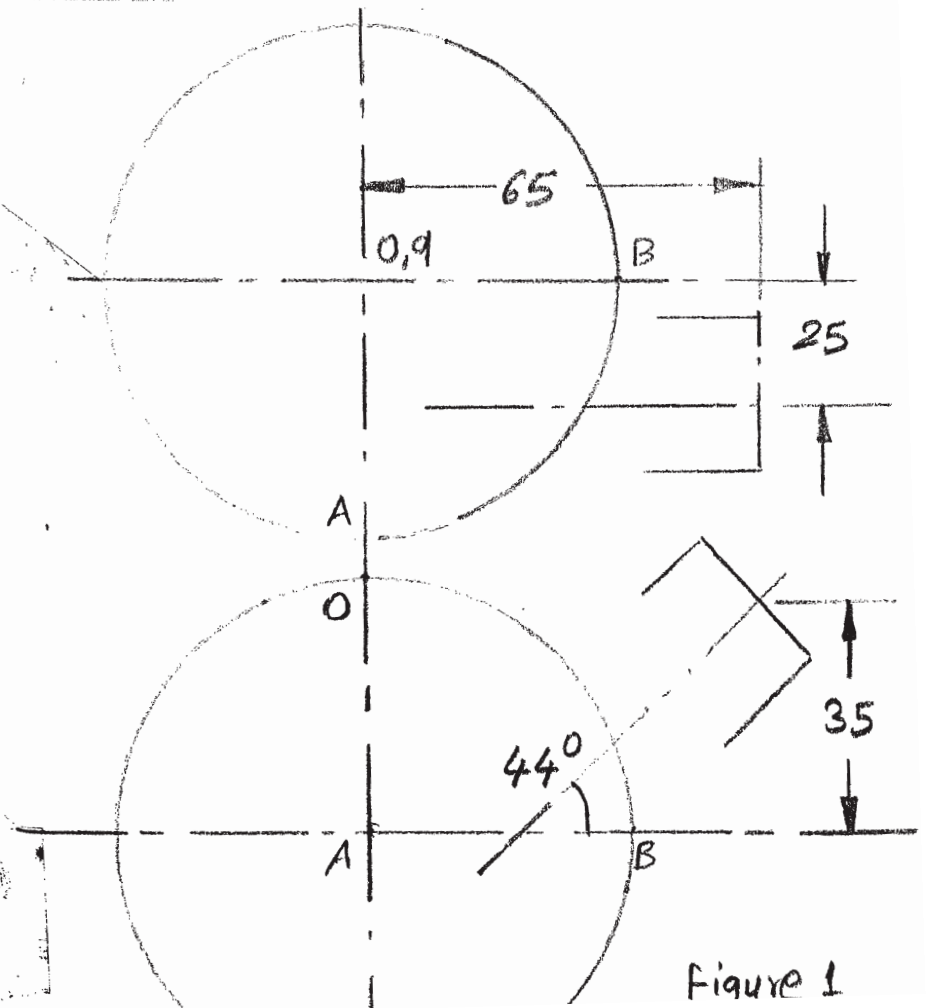


Figure 1

