Department of Mechanical Engineering, IIT, Delhi

Major (Graphics Science (MEL 110))

Max. Marks: 75 Time: 2 Hrs 30 Min

Q1. A square prism with a base side of 40mm and a height of 70mm stands on the ground with a side of base inclined at 30° to the vertical plane. It is completely penetrated by a cylinder having 40mm diameter and 90mm length. The axis of the cylinder is parallel to both the horizontal and the vertical plane and bisects the axis of the prism. Draw the projections showing the curves of intersection. (15)

Q2. A section of a pipe is composed of truncated half-cylinder and half prism. The top and the front view of the pipe are shown in the figure 2. Draw the development of the pipe. (15)

Q3. Draw in the third angle projection the sectional top view (section AA) and the front view in the direction of arrow F of the object shown in Fig. 1. Also dimension the views according to the unidirectional system of dimensioning. (15)

Q4. A regular triangular prism, with 50mm side and 70mm long axis, lies on the horizontal plane on one of its rectangular faces with its axis inclined at 30° to the vertical plane. It is cut by a horizontal section plane at a distance of 5mm from the axis. Draw the front view and the top view of the sectioned solid. (15)

Q5. The base of a triangular prism is an isosceles triangle (denoted by ABC). The base AC of the isosceles triangle is 60mm long, lies in the horizontal plane and is inclined to the vertical plane at 30°. The corners A and B are in the vertical plane. The altitude of the triangle ABC is 40mm. The length of the prism is 80mm. Draw the projections of the prism. (15)

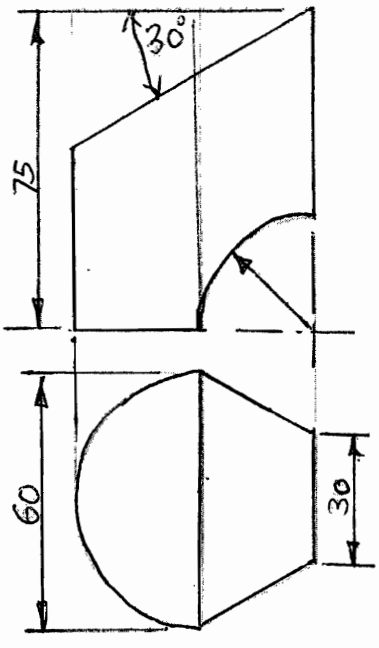
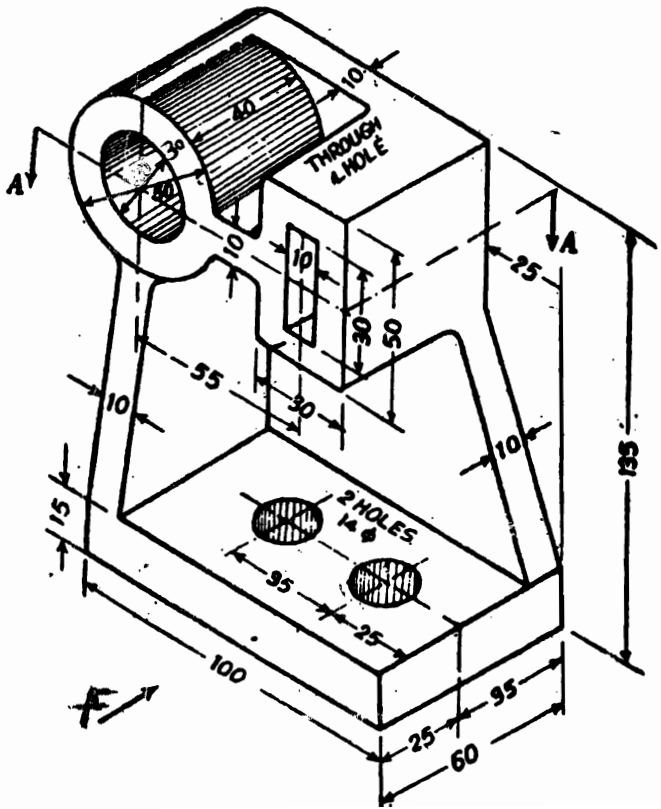


Figure2



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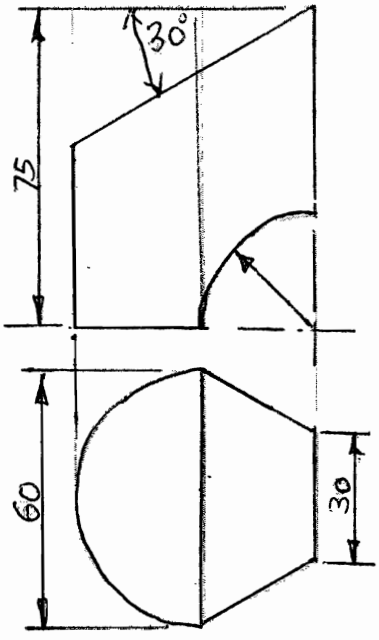

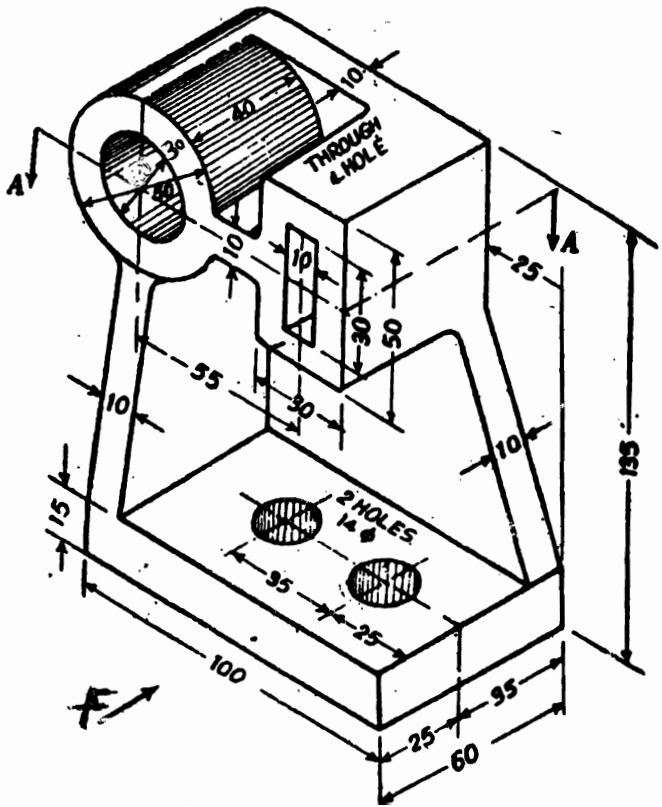

Figure2