Indian Institute of Space Science & Technology

Thiruvananthapuram

B.Tech. Second Semester (Jan- June 2023)

AE 141: Engineering Graphics

Tutorial-2

Topic: Projection of lines

Note: Draw these questions on the back side of the notebook, and bring the notebook while coming to the Engineering graphics lab sessions.

1. Draw the projections of line AB of length 80mm, inclined at an angle 30^0 with HP and 45^0 to the VP. A point M on AB, 30mm from A is at a distance of 35mm above HP and 40 mm in front of VP.

2. An electric lamp is hung vertically from the centre of the roof of a room 4m x 5m and height 4 m at a height of 3m above the floor. Find graphically the distance between the lamp and any one of the corners below.

3. A line AB is 75 mm long. A is 50 mm in front of VP and 15 mm above HP. B is 15 mm in front of VP and is above HP. Top view of AB is 50 mm long. Find the front view length and true inclinations

4. Draw the projections of a straight line PQ ,100mm long inclined at angle 45^0 to the ground (HP) and 30^0 to the VP, the end P is on the ground and the end Q is in the VP. What is the height of the point Q above HP?

5. A picture frame 2 m wide and 1 m tall is resting on horizontal wall railing (Fig. A), makes 35^0 inclinations with wall. It is attached to a hook in the wall by two strings. The hook is 1.5 m above wall railing. Determine length of each chain and true angle between them.

6. Two objects, a flower (A) and an orange (B) are within a rectangular compound wall, (Fig.B) whose P & Q are walls meeting at 90^0. Flower A is 1.5m & 1m from walls P & Q respectively. Orange B is 3.5m & 5.5m from walls P & Q respectively. Find graphically distance between them, if flower is 1.5m and orange is 3.5m above the ground.

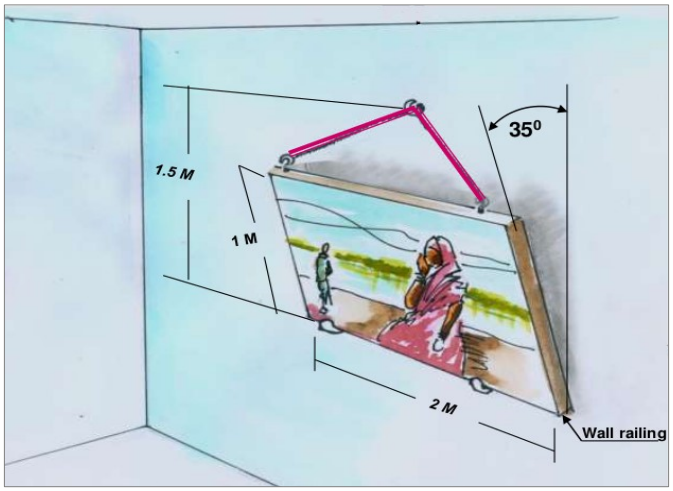

Fig. A

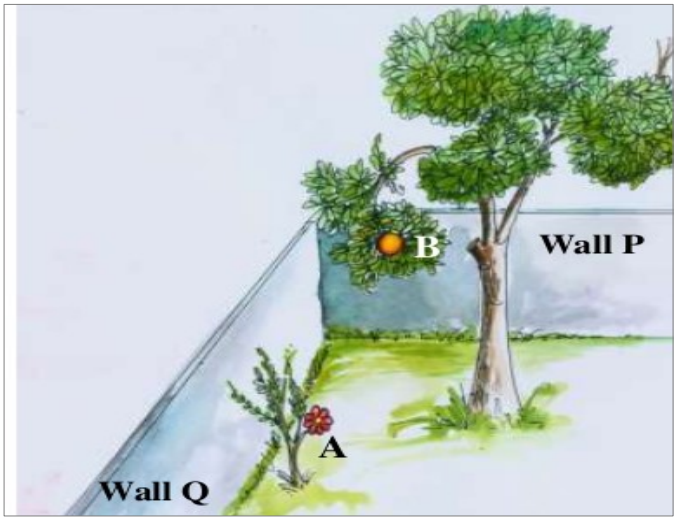

Fig.B