

Department of Mechanical Engineering

ASSIGNMENT – 3

Projection of Planes

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|------------------------|------------------------------------|-------------------------|------------------------------------|
| Department | : Mechanical Engineering | Semester | : 1st Semester A |
| Subject Name | : Engineering Visualization | Subject code: | : 21EV15 |
| Maximum marks | : 10 | Publication Date | : 01/02/2022 |
| Staff In-charge | : Dr. Raghavendra Reddy N V | Submission Date | : 10/02/2022 |

Instructions

- Write your Name, Class, Section, USN/Roll number and assignment number in the all the sheets.
- Answer neatly and legibly in A4 size grid sheets / white sheets
- An incomplete assignment is NOT acceptable for submission.

| Sl. No | Assignment Questions |
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| 1 | A square lamina of 40 mm side rests on one of its sides on HP. The lamina makes 30° to HP and the side on which it rests makes 45° to VP. Draw its projections. |
| 2 | A pentagonal lamina of edges 25 mm resting on HP with one of its sides such that the surface makes an angle of 60° with HP. The edge on which it rests is inclined at 45° to VP. Draw its Projections. |
| 3 | The distance between the end projectors through the end points of a line AB is 40 mm. The end A is 20 mm above HP and 15 mm in front of VP. The end B is 45 mm in front of VP and 65mm above HP. The line AB appears 50 mm long in the top view. Complete the projections. Find the true length of the line and its inclination with HP and VP. |
| 4 | A hexagonal lamina of sides 25 mm rests on one of its sides on HP. The lamina makes 45° to HP and the side on which it rests makes 30° to VP. Draw its Projections. |
| 5 | A rectangular lamina of 40 x 70 mm rests on HP on one of its shorter edges. The lamina is rotated about the edge on which it rests till it appears as a square in the top view. The edge on which the lamina is inclined at 30° to VP. Draw its projections and find its inclination to HP. Also, determine the inclinations of the lamina with the HP. |
| 6 | The top view of a square plate is a rhombus of diagonals 25 mm and 50 mm lengths with the shorter diagonal parallel to XY line. The front view of it is a straight line inclined at 60° to XY line. Draw its projections and determine the true size of the lamina. |
| 7 | A $30^\circ - 60^\circ$ set square of longest side 100 mm long, is in VP and 30° inclined to HP while its surface is 45° inclined to VP. Draw its projections |
| 8 | A rhombus of diagonals 40 mm and 70 mm long respectively has one end of it's longer diagonal in HP while that diagonal is 35° inclined to HP. If the top-view of the same diagonal makes 40° inclination with VP, draw its projections. |