Roll No.	1	6	0	1	-	2	1	-	7	3	3	-			

	VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS-CBCS) DEPARTMENT OF MECHANICAL ENGINEERING **B.E. I – SEMESTER, 2021-22**	**CSE-A**
SHEET # 5	**UI21ES030CE :: BASIC ENGINEERING DRAWING** **PROJECTION OF PLANES**	

OUTCOME: At the end of the **Sheet-5**, the student will be able to:

- draw the projections of perpendicular planes
- draw the projections of oblique planes

5.1	A **square** plane of *50 mm* side has one of its sides in the HP and inclined at *30º* to the VP. Draw the *projections* of the plane when its surface makes an angle of *45º* with the HP.
5.2	A **square** *ABCD* of *50 mm* side has its corner *A* on the HP. Its diagonal *AC* is inclined at an angle of *30º* to the HP while the other diagonal *BD* inclined at *45º* to the VP and *parallel* to the HP. Draw the *projections* of the square plane.
5.3	A thin **rectangular plate** of sides *60 mm x 30 mm* having its shorter side in the VP is seen as a square of *30 mm* side in the front view. Draw the *projections* of the plate when the shorter side, in the VP, makes an angle of *45º* with the HP. Also determine the *inclination* of the plate with the VP.
5.4	Draw the *projections* of a **regular hexagon** of *30 mm* side, having one of its sides in the HP and inclined at *40º* to the VP, and its surface making an angle of *45º* with the HP.
5.5	A **regular hexagon** of *40 mm* side has a corner in the HP. Its surface is inclined at *45º* to the HP. Draw the *projections* of the plane when (i) the *top view of the diagonal* through the corner which is in the HP makes an angle of *60º* with the VP, (ii) the *diagonal* through the corner which is in the HP makes an angle of *60º* with the VP.
5.6	Draw the *projections* of a **regular pentagon** of *40 mm* side, having its surface inclined at *30º* to the HP and a side *parallel* to the HP and inclined at an angle of *60º* to the VP.
5.7	Draw the *projections* of a **rhombus** having diagonals *100 mm* and *60 mm* long, the smaller of which is *parallel* to both the principal planes, while the other is inclined at *30º* to the HP.
5.8	Draw the *projections* of a **circle** of *80 mm* diameter having the end *A* of the diameter *AB* in the HP, the end *B* in the VP, and the surface inclined at *30º* to the HP and at *60º* to the VP.
5.9	A **semi-circular plate** of *80 mm* diameter has its straight edge in the VP and inclined at *45º* to the HP. The surface of the plate makes an angle of *30º* with the VP. Draw its *projections*.
5.10	An **isosceles triangle** of base *50 mm* and altitude *70 mm* is seen as an equilateral triangle of *50 mm side* in the front view. Draw the *projections* when one of the sides is inclined at *45º* to the *x-y*.
5.11	A **rhombus** of diagonals *100 mm* and *60 mm* long represents the top view of a *square* of *100 mm* long diagonals, resting on a corner. Draw the *projections* and determine the *angle* which its surface makes with the ground.
5.12	A thin *30º-60º* **set-square** has its longest edge in the VP and inclined at *30º* to the HP. Its surface makes an angle of *45º* with the VP. Draw its *projections*.

Source: Engineering Drawing, **N.D. Bhatt** :: Exercise **12**
