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

	VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS-CBCS) DEPARTMENT OF MECHANICAL ENGINEERING **B.E. I – SEMESTER, 2021-22**	**CSE-A**
SHEET 04a	**UI21ES030CE :: BASIC ENGINEERING DRAWING** **PROJECTIONS OF STRAIGHT LINES - II**	

OUTCOME: At the end of the **Sheet-4a**, the student will be able to ::

- draw the projections of straight lines inclined to both the reference planes
- determine the true length and inclinations w.r.t. to principal projection planes HP & VP
- locate the traces of straight lines

4.1	A line AB, *75 mm* long, is inclined at *30º* to the HP and *45º* to the VP. Its end A is *20 mm above* the HP and *30 mm in front* of the VP. Draw the *projections* of AB.
4.2	A *75 mm* long straight line AB is inclined at *30º* with the HP and *60º* with the VP. The end A is *20 mm above* the HP and *30 mm in front* of the VP. Draw its *projections*.
4.3	The projectors of a line AB are *55 mm* apart. The end A is *15 mm above* the HP and *25 mm in front* of the VP while the other end B is *45 mm above* the HP and *60 mm in front* of the VP. Draw the *projections* of the line and determine the *true length*, the *true inclinations* with the reference planes.
4.4	The top view of 75 mm long line measures *65 mm* while the front view is 50 mm. One end of the line is on the HP and *10 mm* in front of the VP. Draw the *projections* and determine the *true inclinations* and the *apparent inclinations* of the line.
4.5	The top view of *80 mm* long line is inclined at *60º*. The line makes an angle of 45*º* with the HP. One end of the line is *12 mm in front* of the VP and is *on* the HP. Draw the *projections* of the line and determine the *true inclination* with the VP.
4.6	The end projectors of a line AB are *70 mm* apart. The end A is *on* the HP and *25 mm in front* of the VP while the end B is *on* the VP and *50 mm above* the HP. Draw the *projections* of the line AB and find the *true inclinations* with the principal planes.
4.7	The top view of a *75 mm* long line CD measures *50 mm*. C is *50 mm in front* of the VP and is in the HP. D is *15 mm in front* of the VP and is *above* the HP. Draw the *front view* of CD and find its *inclinations* with the HP and the VP.
4.8	A room is *4.8 m* x *4.2 m* x *3.6 m* high. Determine graphically the *maximum length* of the solid rod which can be fit in the room.
4.9	Two oranges on a tree are respectively *1.8 m* and *3 m* above the ground and *1.2 m* and *2.1 m* from a *0.3 m* thick wall but on the opposite sides of it. The distance between the oranges, measured along the ground and parallel to the wall is *2.7 m*. Determine the *real distance* between the oranges.
4.10	A room measures *8 m* long, *5 m* wide and *4 m* high. An electric point hangs in the centre of the ceiling and *1 m* below it. A thin straight wire connects the point to a switch kept in one of the corners of the room and *2 m above* the floor. Draw the *projections* of the wire, and find the *length* of the wire and its *angle* with the floor.

Source: Engineering Drawing, **N.D. Bhatt** :: Exercise **10(b)**
