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 03	**UI21ES030CE :: BASIC ENGINEERING DRAWING** **PROJECTIONS OF STRAIGHT LINES-1**	

OUTCOME: At the end of the **Sheet-3a**, the student will be able to ::

- draw the orthographic projections of straight lines in simple positions
- determine the true lengths and inclinations w.r.t. to principal projection planes HP & VP

3.11 Draw the projections of a *75 mm* long straight line, in the following positions:

(i) (a) *parallel* to both the HP and the VP and *25 mm* from each
(b) *parallel* to and *30 mm above* the HP and in the VP
(c) *parallel* to and *40 mm in-front* of the VP and in the HP

(ii) (a) *perpendicular* to the HP, *20 mm in-front* of the VP and its one end *15 mm above* the HP
(b) *perpendicular* to the VP, *25 mm above* the HP and its one end *in* the VP
(c) *perpendicular* to the HP, *in* the VP and its one end *in* the HP

(iii) (a) inclined at *45º* to the VP, *in* the HP and its one end *in* the VP
(b) inclined at *30º* to the HP, its one end *20 mm above* it; parallel to and *30 mm in-front* of the VP
(c) inclined at *30º* to the VP, its one end *15 mm in-front* it; parallel to and *25 mm above* the HP

3.12 An *80 mm* long line is parallel to and *40 mm above* the HP. Its two ends are *25 mm* and *50 mm in-front* of the VP respectively. Draw its *projections* and find its *inclination* with the VP.

3.13 A *75 mm* long line is parallel to and *25 mm in-front* of the VP. Its one end is *in* the HP while the other is *50 mm above* the HP. Draw its *projections* and find its *inclination* with the HP.

3.14 The top view of a *75 mm* long line measures *55 mm*. The line is *in* the VP and its one end being *25 mm above* the HP. Draw its *projections* and find the *inclination*.

3.15 The front view of a line, inclined at *30º* to the VP is *65 mm* long. Draw the *projections* of the line, when it is *parallel* to and *40 mm above* the HP, its one end being *30 mm in-front* of the VP.

3.16 A *vertical* line **AB**, *75 mm* long, has its end **A** *in* the HP and *25 mm in-front* of the VP. A line **AC**, *100 mm* long, is *in* the HP and *parallel* to the VP. Draw the *projections* of the line joining **B** and **C**, and determine its *inclination* with the HP.

3.17 Two pegs (nails) fixed on a wall are *4.5 metres* apart. The distance between the pegs measured parallel to the floor is *3.6 metres*. If one peg is *1.5 metres above* the floor, find the *height* of the second peg and the *inclination* of the line joining the two pegs, with the floor. (Consider a scale of *1:50*.)

Note: The final solution to be drawn with HB grade pencil
All construction lines to be drawn with 2H grade pencil
Dimensioning to be done using H grade pencil

Source: Engineering Drawing – N. D. Bhatt
Exercise **10a**