

SRM Institute of Science and Technology
College of Engineering and Technology
Department of Mechanical Engineering

18MES101L - Engineering Graphics and Design

Reg. No		Ex. No	3
Name of the student		Week. No	3
Department		Title of the exercise	Fundamentals of Projection (Orthographic projection of points, Straight lines inclined to one plane and free hand sketching)
Section		Date	

Note:

- **4 Questions each answer 2 marks (4 x 2 = 8 Marks)**
- **Record 2 Marks**

1. Draw the projections of the following points on the same reference line, keeping the projectors 25 mm apart from each other.

a). A point 10mm above HP 10mm in front of V.P

b). A point 10mm above HP 10mm below V.P

c). A point 10mm below HP 10mm in front of V.P

d). A point 10mm below HP 10mm behind V.P

(10 min.

level 1

2. Draw the orthographic multi-view projections of the following points. Choose appropriate *Scale* if required.

a) A toy boat (idealized as a point R) is floating inside a square well 3 m below H.P

(floor) and 1 m behind V.P (wall).

(10 min.

level 2/ -)

b) A box (idealized as a point S) is kept in the steps, which is 5 meter below H.P (floor)

and 4 meter in front of V.P (wall) from the observer.

(10 min.

level 2/ -)

3. Draw the multi-view projection of **straight lines inclined to only one plane.**

- a) The length of the top view of a line, AB parallel to the V.P. and inclined at 45° to the H.P. is 50 mm. One end of the line A, is 12 mm above the H.P and 25 mm in front of the V.P. Draw the projections of the line and determine its true length.

(25 min. level 1/ -)

- b) The front view of a 7.5 m long lamp post (idealized as a line AB) lying on the ground measures 5.5 m. One of its end A is in the wall .Draw the projections of the line and determine it's inclination with the wall (V.P.)

(25 min. level 2/ Gen.)

4. Draw a free-hand (manual/ CAD) **CREATIVE** conceptual drawing of a **PROPOSED** (Modify the existing product like pen, sharpener, micro tip pencil, stapler, car, airplane, etc., (**new, presently not-existing features must be added to existing product**). Label the parts and list out the special features of the product, an example shown below.

(60 min. level 3/ General consumer applications)