**Round 1**

**Experiment Design**

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### Department: Mechanical Engineering

### Discipline: Civil, Applied Mech & Hydraulics, Mechanical

### Name of the Lab: Engineering Drawing Lab

### Name of experiment: Projection of Points

### FOCUS AREA: Instrumental and Practical Skills

**1. Learning Objectives and Cognitive Level:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr. No** | **Learning Objectives** | **Cognitive level** | **Action Verb** |
| 1. | Student first Learn about the different lines | Understand | Combine |
| 2. | The student should go through the instruction and apply it | Apply | Apply |
| 3. | As the student proceeds to compare the steps involved | Evaluate | Compare |
| 4. | And at last combine and observe all steps of construction for the Projection of lines | Create | Combine |

**2. Instructional Strategy:**

**2. 1 Instructional Strategy:** Expository

**2.2 Assessment Method:** Formative Assignment

**2.3 Description of the section:**

• Detailed theory is provided by considering all the aspects which develop an understanding of concepts, also reference will be provided for further information.

• To understand the process followed in simulation a complete set of procedures will be provided which helps the students to perform the simulation.

• Step by step procedure which is carried out in the lab manually is being simulated which gives independent learning.

• Pre-quiz and post-quiz will be provided to test the understanding of the students before and after performing the experiments.

• Once the students go through the virtual lab experiments, they can perform those drawing in real effectively

**3.Task & Assessment Questions:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr. No.** | **Instructions given by the Teacher** | **Tasks to be done by the Students** | **Assessment questions aligned to the task** |
| 1. | Put the x-coordinate of the point | Set it from the slider present on the right side | Q1,Q3,Q2 |
| 2. | Put the y-coordinate of the point | Set it from the slider present on the right side | Q2,Q4,Q3 |
| 3. | Use the Cursor to determine the position of every point | Set the cursor to any point they want to know the coordinate of | Q5 |

**Pre-test:**

1. . If the point lies in the fourth quadrant it’s front view will lie \_\_\_\_\_\_ XY line.
2. . Above
3. .Below
4. .On the
5. .None

Ans: B

1. .If a point P is placed in between the projection planes. The distance from side view to reference line towards front view and the distance between top view and reference line towards top view will be same.
2. . True
3. .False

Ans: A

1. . A point in 2nd quadrant is 15cm away from both the horizontal and vertical plane and orthographic projection are drawn. The distance between the points formed by front view and top view is\_\_\_\_
2. .0
3. .30
4. .15
5. .15+ from profile plane

Ans: A

4). Projection of a point in the third quadrant will be

(a) Front view in VP

(b) Front view in HP

(c) Front view in PP

(d)None

Ans: A

4). Projection of a point in the first quadrant will be

(a) Front view in VP

(b) Front view in HP

(c) Front view in PP

(d)None

Ans: B

**Post-test:**

1. .Two points are placed in 1st quadrant of projection planes such that the line joining the points is perpendicular to profile plane the side view and top view will be \_\_\_\_\_\_\_\_
2. . Single point ,Two-point
3. .Two point, Single point
4. .Single point, Single point
5. .Two-point,Two-point

Ans: A

1. .A point is 5m away from the VP and 4m away from PP and 3m away from the HP in 1st quadrant then projections are drawn on paper the distance between the front view and top view is \_\_\_\_\_\_
2. .7m
3. .8m
4. .9m
5. .5m

Ans: B

1. .If the point lies on XY line then it lies \_\_\_\_\_
2. .First quadrant
3. .Second quadrant
4. .Third quadrant
5. .Lies on the origin

Ans: D

1. . If the point is 4m in front of VP and 3m above HP then in XY line divided the distance between the front view and top view in \_\_\_\_\_ ratio.
2. .4:3
3. .3:4
4. .7:4
5. .7:3

Ans: B

5). Front view and top view projection of point lies in above XY line in orthographic projection, then its X and Y coordinates are

A). Positive and Negative

B). Positive and Positive

C). Negative and Positive

D). Negative and Negative

Ans: C

### 4. Simulator Interactions:

|  |  |  |  |
| --- | --- | --- | --- |
| Sr. No | What students will do? | What Simulator will do? | Purpose of the task |
| 1. | Put details of point | Point details will be saved and point d | That point will be considered for further steps. |
| 2. | Click the button on the bottom left. | The front and the top view will appear | The final result of drawing |
| 3. | Click on PLAY button | The point on XY axis will appear | To understand the position of any point |