LAB SESSION V

COMMANDS COVERED THIS WEEK: - COPY, ROTATE, ARRAY, BREAK, PLINE, PEDIT, MIRROR, SCALE, HATCH.

• COPY:
This command is used to create an exact replica of an object at any point on the screen.

→ EXECUTION
- "COPY" icon on the tool bar
- By typing "COPY" in the command line
- Through "MODIFY – COPY"

→ EXECUTION STEPS
- Select object to copy and hit ENTER
- Select a base point
- Select a point on the screen where the object has to be copied.

• ROTATE: This command is used to rotate an object at a given angle.

→ EXECUTION
- Through "ROTATE" icon on the tool bar
- By typing "ROTATE" in the command window
- Through "MODIFY – ROTATE"

→ EXECUTION STEPS
- Select object to rotate
- Specify base point
- Specify angle of rotation

The angle is positive in the counterclockwise direction.

• ARRAY: This command is used to create multiple copies of object in a pattern.

→ EXECUTION
- Typing "ARRAY" in the command line
- Through "MODIFY – ARRAY"
- Through the "ARRAY" icon.

Depending upon the requirement, the object can be replicated in a rectangular array or a polar array. You are required to select one option, either R(rectangle) or P(Polar).

- **RECTANGULAR ARRAY:**

→ EXECUTION
- Enter number of rows
- Enter number of columns
- Enter distance between rows
- Enter distance between columns.
- If you specify one row, then you must specify more than one column and vice versa.
- The specified object is assumed to be in the lower left corner and the array is generated up and towards the right.
- You can specify a negative value to the distance between rows and columns to add them downwards or left wards.

- **POLAR ARRAY:**

→ EXECUTION
- Specify center point of array
- Enter the number of items in the array
- Specify the angle to fill (+=ccw, -=cw)
- Specify whether you want to rotate arrayed objects

You can also select multiple objects.

• BREAK:

This command is used to erase part of an object or to split it into two.

→ EXECUTION
- "BREAK" icon on the toolbar
- By typing "BREAK" in the command line
- Through "MODIFY – BREAK"

→ EXECUTION STEPS
- Select the object
- Specify the two break points
- To split, give second point as the first point.

• PLINE:

Creates a 2D polyline as a single entity.

→ EXECUTION
- Typing "PLINE" in the command line
- Through "POLYLINE" icon
- Through "DRAW – POLYLINE"

→ EXECUTION STEPS

To execute this command, specify the start point and then select out of the various options available:
"Arc/Close/Half width/Length/Undo/Width"

• PEDIT:

This command is used to edit a polyline.

→ EXECUTION

- Typing "PEDIT" in the command line.
- Through "MODIFY – POLYLINE"

The various options available are:
"Close/Join/Width/Edit vertex/Fit/Spline/Decurve/Ltypegen/Undo"

- Edit Vertex: You can break the polyline at a vertex
- Fit: A curve passing through all the vertices is generated
- Spline: A curve that does not go through any of the vertices is generated.
- Decurve: All the curves are converted into straight lines

• MIRROR:

This command can be used to create a mirror image of an object.

→ EXECUTION

- Typing "MIRROR" in the command line
- Through "MODIFY – MIRROR"
- Through "MIRROR" icon

→ EXECUTION STEPS

- Select object to mirror
- Specify the mirror line
- Specify whether original object has to be deleted

• SCALE: This command is used to change the scale of an object.

→ EXECUTION

- Type "SCALE" in command line
- Through "MODIFY – SCALE"
- Through the "SCALE" icon.

→ EXECUTION STEPS

- Select the object to scale
- Select the scale factor (<1 reduces the size; > increases the size)

• HATCH:

This command is used to hatch an object with a pre-defined pattern.

→ EXECUTION

- Typing hatch in the command line
- Through "DRAW – HATCH"
- Through the "HATCH" icon.

→ EXECUTION STEPS

When you use any one of these options, a boundary hatch manager will pop up on your screen. You should first define the type of hatch pattern, then select the objects by either "PICK POINTS" or by "SELECT OBJECT". Then hit OK. This will hatch your object with the required pattern.