

Engineering Graphics Module-07 Notes

MODULE-07 TOPICS

- Customisation & CAD Drawing
- Setup of Drawing Page and Printer
- Scale Settings
- Units and Drawing Limits
- ISO and ANSI Standards
- Coordinate Dimensioning and Tolerancing
- Orthographic Constraints
- Snap to Objects (Manual & Automatic)
- Coordinate Input Entry Methods
- Drawing Straight Lines
- Methods of Drawing Circles

1. CUSTOMISATION IN CAD

Customization means changing CAD settings according to drawing requirements.

Purpose of Customisation

1. Improves drawing efficiency
2. Maintains drawing accuracy
3. Provides standard formatting
4. Simplifies drafting work

2. SETUP OF DRAWING PAGE

Before starting drawing, drawing page is configured according to required sheet size and scale.

Important Settings

- Paper size
- Orientation (Portrait/Landscape)
- Margins
- Plot area
- Scale settings

3. PRINTER SETUP IN CAD

Printer setup is used for printing engineering drawings correctly.

Printer Setup Includes

1. Printer selection
2. Paper size selection
3. Plot style settings
4. Print scale settings

4. SCALE SETTINGS

Scale is used to represent actual object dimensions proportionally.

Types of Scale

1. Full Scale (1:1)

2. Reducing Scale (1:2, 1:5)
3. Enlarging Scale (2:1, 5:1)

5. UNITS AND DRAWING LIMITS

Units define measurement system used in CAD drawing.

Common Units

- Millimeters (mm)
- Centimeters (cm)
- Inches (in)

Drawing Limits

Drawing limits define working area of drawing.

Advantages

1. Better drawing management
2. Proper scaling
3. Improved accuracy

6. ISO & ANSI STANDARDS

Engineering drawings follow standard rules for dimensioning and tolerancing.

ISO Standards

International Organization for Standardization standards used worldwide.

ANSI Standards

American National Standards Institute standards used mainly in USA.

7. COORDINATE DIMENSIONING

Coordinate dimensioning specifies locations of features using coordinate values.

Advantages

1. High accuracy
2. Easy interpretation
3. Suitable for CNC machining

8. TOLERANCING

Tolerance is permissible variation in dimensions.

Types of Tolerances

1. Unilateral Tolerance
2. Bilateral Tolerance
3. Limit Dimensioning

9. ORTHOGRAPHIC CONSTRAINTS

Orthographic constraints restrict movement or drawing direction.

Common Constraints

1. Horizontal constraint
2. Vertical constraint
3. Parallel constraint
4. Perpendicular constraint

10. SNAP TO OBJECTS

Snap helps in selecting exact points automatically or manually.

Types of Snap

1. Endpoint Snap
2. Midpoint Snap
3. Center Snap
4. Intersection Snap

Advantages

- Improves accuracy
- Saves time
- Reduces errors

11. COORDINATE INPUT METHODS

Coordinate input methods are used to specify point locations.

Methods

1. Absolute Coordinate System
2. Relative Coordinate System
3. Polar Coordinate System

12. DRAWING STRAIGHT LINES

Straight lines are drawn using LINE command and coordinate entry methods.

Applications

1. Engineering drafting
2. Building plans
3. Mechanical components

13. METHODS OF DRAWING CIRCLES

Circles can be drawn using different CAD methods.

Methods

1. Center-Radius Method
2. Center-Diameter Method
3. Two-Point Method
4. Three-Point Method
5. Tangent-Tangent-Radius Method

14. ADVANTAGES OF CAD CUSTOMISATION

1. Faster drafting

2. Better accuracy
3. Standardized drawings
4. Easy editing and modification

MOST IMPORTANT 14 MARK QUESTIONS

1. Explain setup of drawing page and printer in CAD.
2. Explain scale settings and drawing limits in CAD.
3. Explain ISO and ANSI standards for dimensioning and tolerancing.
4. Explain coordinate dimensioning and tolerancing methods.
5. Explain orthographic constraints in CAD.
6. Explain snap to object methods in CAD.
7. Explain coordinate input methods with examples.
8. Explain different methods of drawing circles in CAD.
9. Explain customization techniques in CAD software.
10. Explain applications of CAD standards in engineering drawing.

IMPORTANT 7 MARK QUESTIONS

1. Define customization in CAD.
2. Define drawing limits.
3. Define coordinate dimensioning.
4. Define tolerancing.
5. Explain snap methods.
6. Define orthographic constraints.
7. Explain coordinate input methods.
8. Explain methods of drawing circles.
9. Define ISO and ANSI standards.
10. Explain advantages of CAD customization.

EXAM PREPARATION TIPS

- Practice coordinate input methods daily.
- Learn snap and constraint tools carefully.
- Revise drawing setup and scale settings.
- Practice circle drawing commands.
- Learn ISO and ANSI standards properly.

Topic Weightage Analysis

Topic	Importance
Coordinate Input Methods	★★★★★
CAD Customisation	★★★★
Snap & Constraints	★★★★
Scale & Drawing Limits	★★★★
Circle Drawing Methods	★★★
ISO & ANSI Standards	★★★