Engineering Graphics Module-03 Notes

MODULE-03 TOPICS

• Projections of Regular Solids
• Solids inclined to both HP and VP
• Auxiliary Views
• Simple Annotation
• Dimensioning
• Scale in Drawing
• Floor Plans
• Symbols of Windows, Doors and Fixtures

1. PROJECTIONS OF REGULAR SOLIDS

Regular solids are 3D objects having regular shape and equal dimensions.

Types of Regular Solids

1. Prism
2. Pyramid
3. Cylinder
4. Cone
5. Sphere

Important Terms

• Axis – Imaginary line passing through center of solid.
• Base – Bottom surface of solid.
• Generators – Lines generating curved surfaces.

Projection Principles

1. First draw simple position of solid.
2. Draw front view and top view.
3. Incline solid according to given conditions.
4. Obtain final projections carefully.

2. SOLIDS INCLINED TO BOTH HP AND VP

When axis of solid is inclined to both Horizontal Plane (HP) and Vertical Plane (VP), projections are drawn using change of position method and auxiliary view method.

Procedure

1. Draw projections in simple position.
2. Incline axis to HP.
3. Incline axis to VP.
4. Obtain final projections.

3. AUXILIARY VIEWS

Auxiliary views are additional views used to show true shape and true size of inclined surfaces.

Types of Auxiliary Views

1. Auxiliary Front View

2. Auxiliary Top View

Applications

• Determining true shape
• Determining true length
• Solving inclined surface problems

4. ANNOTATION

Annotation means writing notes, labels and symbols on engineering drawings.

Importance of Annotation

1. Improves understanding of drawing.
2. Gives additional information.
3. Makes drawing easy to read.

5. DIMENSIONING

Dimensioning means indicating sizes and measurements on engineering drawings.

Elements of Dimensioning

1. Dimension Line
2. Extension Line
3. Arrow Heads
4. Dimension Figures

Rules of Dimensioning

• Dimensions should be clear and neat.
• Avoid repetition of dimensions.
• Use standard symbols and arrows.

6. SCALE

Scale is used to represent actual dimensions in reduced or enlarged form.

Representative Fraction (R.F.)

R.F. = Drawing Length / Actual Length

7. FLOOR PLANS

Floor plan is the top view of a building showing arrangement of rooms, walls, doors, windows and fixtures.

Components of Floor Plan

1. Walls
2. Doors
3. Windows
4. Staircases
5. Fixtures

8. BUILDING FIXTURES

Common Symbols Used

• WC – Water Closet
• Bath – Bathroom area
• Sink – Kitchen sink
• Shower – Shower unit

9. IMPORTANT DRAWING SYMBOLS

1. Door Symbol
2. Window Symbol
3. Ventilator Symbol
4. Sink Symbol
5. WC Symbol

MOST IMPORTANT 14 MARK QUESTIONS

1. Draw projections of prism inclined to HP and VP.

2. Draw projections of pyramid inclined to HP and VP.

3. Draw projections of cylinder inclined to HP and VP.

4. Explain auxiliary view method with neat sketch.

5. Explain annotation and dimensioning rules.

6. Draw floor plan showing doors, windows and fixtures.

7. Explain symbols used in floor plans.

8. Explain projection procedure for solids inclined to both planes.

IMPORTANT 7 MARK QUESTIONS

1. Define regular solid.

2. Define auxiliary view.

3. Define annotation.

4. Define dimensioning.

5. Define floor plan.

6. Explain rules of dimensioning.

7. Define representative fraction.

8. Explain building fixture symbols.

EXAM PREPARATION TIPS

• Practice projections of solids daily.
• Learn standard symbols carefully.
• Use proper dimensioning methods.
• Practice neat floor plans.
• Revise auxiliary view construction regularly.

Topic Weightage Analysis

Topic	Importance
Projection of Solids	★★★★★
Auxiliary Views	★★★★★
Floor Plans	★★★★
Dimensioning	★★★★
Annotation	★★★
Building Symbols	★★★