

# ENGINEERING GRAPHICS-310

*Note:*

*There will be one Question Paper which will have 50 questions out of which 40 questions need to be attempted.*

## **ISOMETRIC PROJECTION OF SOLIDS**

**Unit 1:** Construction of isometric scale showing main divisions of 10mm and smaller divisions of 1mm, also showing the leading angles.

Isometric projection (drawn to isometric scale) of solids such as cube; regular prisms and pyramids (triangular, square, pentagonal and hexagonal); cone; cylinder; sphere; hemisphere; keeping the base side of the solid parallel or perpendicular to HP/VP. The axis of the solid should be either perpendicular to HP / VP or parallel to HP and VP.

## **ISOMETRIC PROJECTION OF SOLIDS**

**Unit 2:** Combination of any two above-mentioned solids keeping the base side parallel or perpendicular to HP/VP and placed centrally together (Axis of both the solids should not be given parallel to HP).

### **Machine Drawing (Machine Parts)**

**Unit 3:** Drawing to full size scale with instruments.

Introduction of threads: Standard profiles of screw threads - Square, Knuckle, B.S.W., Metric (external and internal); Bolts – Square head, Hexagonal head; Nuts – Square head, Hexagonal head; Plain washer; combination of nut and bolt with or without washer for assembling two parts together.

### **Machine Drawing (Machine Parts)**

**Unit 4: Free-hand sketches**

Conventional representation of external and internal threads; Types of studs – Plain stud, Square-neck stud, Collar stud; Types of rivets – Snap head, Flat head, Pan head (without tapered neck), 60° Counter Sunk Flat head.

### **Machine Drawing (Assembly and Dis-assembly)**

**Unit 5: Bearings**

- (i) Open-Bearing
- (ii) Bush- Bearing

**Unit 6: Rod Joint:**

- (i) Cotter-joints for round-rods (Sleeve and cotter joint)
- (ii) Cotter-joints for square rods (Gib and cotter-joint)

**Unit 7: Tie-rod and Pipe-joint**

- (i) Turnbuckle
- (ii) Flange pipe joints *are to be shown.*