

## **2.10 40102 ELECTRICAL AND ELECTRONICS MEASUREMENT**

### **UNIT-1 D.C.CIRCUITS AND THEOREMS**

- 1.1 Ohm's Law, KVL, KCL & Simple Problems
- 1.2 Series and Parallel Circuits
- 1.3 Thevenin's, Norton's Theorem
- 1.4 Superposition & Maximum power Theorem

### **UNIT-2 A.C.CIRCUITS AND RESONANCE**

- 2.1 Inductance and Capacitance
- 2.2 Reactance, Susceptance, Conductance, Impedance and Admittance
- 2.3 Series and Parallel RL, RC and RLC circuits
- 2.4 Three phase supply & star and delta connection

### **UNIT-3 TRANSFORMERS AND MACHINES**

- 3.1 EMF equation of transformers
- 3.2 Core and Cu losses & OC, SC tests
- 3.3 D.C Generator & Motor working principle & Types
- 3.4 Capacitor start induction motor – stepper motor – uses

### **UNIT-4 MEASURING INSTRUMENTS AND CRO**

- 4.1 Basic force for indicating instrument
- 4.2 Permanent magnet & moving coil Instruments & DC meters
- 4.3 Multi meter for DC & AC Parameters and Bridges
- 4.4 CRO Working Principle, Block Diagram, Types and applications

### **UNIT-5 RECORDERS, TRANSDUCERS & DIGITAL TEST INSTRUMENTS**

- 5.1 X-Y & Strip Chart Recorder Introduction and Classification
- 5.2 Strain Gauge-Construction, Types and Application
- 5.3 Capacitive, Inductive, Displacement Transducers and LVDTs
- 5.4 DVM, Operation, Blocks & Digital Multimeter

#### **Reference Books:**

1. Electric Circuit theory by Dr. M. Arumugam and N. Premkumaran.
2. Modern Electronic Instrumentation and Measurements Techniques by Albert D.Helfrick and William David Cooper-PHI
3. Electronic Devices and Circuit theory by Boylestead and Nashelsley
4. Electronic Instrumentation by G.K.Mithal, Khanna Publishers
5. A Text book of Electrical Technology by B.L. Theraja