

**Unit – I**

**Chapter 1 : Basics of Electric Drives 1-1 to 1-24**

**Syllabus :** Electric drive, Types and choice of electric drives, Parts of electrical drive-source, Power modulator, Electric motor and control unit, Motor duty class, Classification – Continuous, Short time, Intermittent period, Motor power rating for continuous, Short time and intermittent duty, Equivalent torque current and power methods for fluctuating and intermittent loads (Simple numerical), Speed-torque characteristics of DC motors, Speed-torque characteristics of three phase induction motor.

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**Unit – II**

**Chapter 2 : DC Drives using Converters 2-1 to 2-38**

**Syllabus :** Single phase SCR drives : Half wave converter, Full wave converter, Semiconductor, Dual converter, Three phase SCR drives : Half wave converter, Full wave converter, Semiconductor, Dual converter, Power factor in SCR motor drives, Reversible SCR drives.

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**Unit – III**

**Chapter 3 : DC Drives using Choppers 3-1 to 3-24**

**Syllabus :** Basic chopper circuit using SCR, Classification based on output voltage and quadrant of operation, Chopper controlled DC drives : Class A chopper drive, Class B chopper drive, Class C chopper drive, Class D chopper drive, Class E chopper drive, Application of chopper control drive in solar and battery powered vehicles.

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### Unit – IV

#### Chapter 4 : AC Drives 4-1 to 4-28

**Syllabus :** Stator voltage control method using thyristor circuit, Variable frequency control method using square wave inverter, Constant V/F control method, Rotor resistance control using chopper, Slip power recovery system, Solar powered pump drives, Drives required at each stage for following applications : Textile mills, Steel rolling mills, Paper mills, Sugar mills.

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**Unit – V**

**Chapter 5 : Advanced Techniques of Motor Control**

**5-1 to 5-20**

**Syllabus :** Microcontroller / Microprocessor based control for drives, Phase locked loop control of DC motor, AC /DC drive using Microprocessor control, AC /DC drive using microcontroller control, Synchronous Motor drives, Ratings & specifications of stepper motor, Stepper motor drives employing microcontroller (No programming).

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