

**Unit 01****Chapter 1 : Power Semiconductor Devices - Thyristors  
1-1 to 1-45**

**Syllabus** : Construction, Static and dynamic characteristics, Specifications / rating of SCR, Triggering circuits (R, R-C, UJT), Commutation circuits (class C and D), Gate Turn Off (GTO), Thyristor (Construction, Working and Application), TRIAC- four mode operation, Triggering of TRIAC using DIAC, **Application**-light dimmer.

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### Unit 02

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**Unit 03**

**Chapter 5 : Single Phase AC - DC Converter 5-1 to 5-58**

**Syllabus : Single phase Converter :** Fully controlled converter, **Half controlled converter (Semi-converter) :** Operation of all converters with R and RL load, Derivation of Average and RMS output voltage, Power factor, THD, TUF. Numerical based on output voltage and current calculations, Single phase dual converter (Descriptive treatment only), **Application :** Speed control of DC motor.

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**Unit 04**

**Chapter 6 : Three Phase Converter 6-1 to 6-29**

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**Unit 04**

**Chapter 7 : AC Voltage Regulators 7-1 to 7-19**

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**Unit 05**

**Chapter 8 : Single Phase DC - AC Converter 8-1 to 8-40**

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**Unit 06**

**Chapter 9 : Three Phase DC-AC Converter 9-1 to 9-39**

**Syllabus :** Three phase VSI using  $120^\circ$  and  $180^\circ$  mode and their comparison, PWM based VSI, Voltage control and harmonic elimination techniques (Single pulse modulation, Multilevel control), Multilevel converter concept, Its classification (Neutral point clamped converter, Flying capacitor converter, Cascaded multilevel converter) and their Comparison, **Application :** Speed control of 3-phase induction motor.

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