

Duration: 3hrs

[Max Marks: 80]

- N.B. :** (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

- 1** Attempt any **FOUR** [20]
- a Explain di/dt protection of SCR. [05]
- b Explain the Safe Operating Area (SOA) of power MOSFET. [05]
- c Draw VI characteristics of SCR and hence explain in brief all conducting states. [05]
- d Explain fly back converter in short. [05]
- e Explain Half Wave Controlled Rectifier for Resistive load. [05]
- 2** a What is commutation of SCR. List the various method and explain one method in brief [10]
- b List the advantages and disadvantages of the Buck and Boost converter. [10]
- 3** a Explain Full Wave Controlled Rectifier for R-L load. [10]
- b Explain synchronized UJT relaxation oscillator circuit to trigger SCR. [10]
- 4** a Describe Buck DC-DC converter with appropriate waveforms. [10]
- b What is the effect of source inductance on a full wave-controlled rectifier for R load [10]
- 5** a Describe the full bridge inverter for inductive load and draw suitable waveforms. [10]
- b Explain the single-phase AC controller for inductive load. [10]
- 6** a Describe the single-phase Cycloconverter for resistive load. [10]
- b Explain in detail the multiple pulse wave modulating (PWM) technique for single-phase inverters. [10]
