

B.E SEM-III C-scheme Summer 2025

2/6/25

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 What are the different triggering methods and explain any one. [5]
- b Differentiate between TRIAC and DIAC. [5]
- c Explain the effect of freewheeling diode in details. [5]
- d Summarize the advantages of PWM technique used in inverter. [5]
- e Explain the block diagram of SMPS. [5]
- 2 a Explain Half Wave Controlled Rectifier for inductive load. [10]
- b Explain latch-up phenomenon in IGBT. How it can be overcome? [10]
- 3 a Explain Synchronized UJT triggering circuit with waveform. [10]
- b Explain class C commutation method of SCR with waveforms [10]
- 4 a Describe Buck DC-DC converter with appropriate waveforms. [10]
- b Write short note on Principle of operation single-phase bridge inverter. [10]
- 5 a Explain continuous mode fly-back converter with appropriate waveform. [10]
- b Discuss the significance of, various performance parameters for DC-AC converters. Derive the formula for Harmonic Factor, THD and Displacement Factor. [10]
- 6 a Describe the single-phase Cycloconverter for resistive load [10]
- b Explain the single-phase AC controller for inductive load. [10]