

18E11

B. Tech. EXAMINATION, 2020

(Fifth Semester)

(C Scheme) (Main Only)

(EE)

EE301C

POWER ELECTRONICS

Time : 2½ Hours]

[*Maximum Marks : 75*

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Four* questions in all. All questions carry equal marks.

1. (a) Explain construction and characteristics of IGBT.
(b) Explain static characteristics of SCR with proper diagram.
2. (a) Explain three-phase diode rectifier with LC filter in detail.
(b) What is commutation overlap ?
3. Explain single phase-full bridge thyristor rectifier with R-load and highly inductive load in detail.
4. Explain three-phase full bridge thyristor rectifier with R-load and highly inductive load in detail.
5. (a) Explain power circuit of a buck converter.
(b) Explain concept of duty ratio control.

6. Explain relationship between duty ratio and average output voltage of a boost converter.
7. Describe the operating principle of three-phase voltage source inverter.
8. Write short notes on the following :
 - (a) Unipolar sinusoidal modulation
 - (b) Modulation index.