

Code No: 155CU**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, September - 2021****POWER ELECTRONICS****(Electrical and Electronics Engineering)****Time: 3 hours****Max. Marks: 75****Answer any five questions****All questions carry equal marks**

- 1.a) Describe any two methods of turn on mechanism of SCR.
- b) Explain the turnoff characteristics of SCR. [8+7]
2. Discuss the transfer, output and switching characteristic of power IGBT. [15]
3. Explain the operation of single phase semi converter with R-L load and derive the expressions for its average and rms output voltage. [15]
4. Explain the working of single phase full converter with R-L load and derive the expression for the average and rms value. [15]
5. Discuss the principle of operation of DC-DC step down chopper with suitable waveforms. Derive the expression for its average dc voltage. [15]
6. Explain the operation of Buck-Boost convertor with a neat circuit diagram. Draw the relevant waveforms. [15]
7. Explain the operation of single phase bridge inverter with a neat sketch. [15]
8. Explain the operation of single phase AC voltage controller with RL load. [15]

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