

Code No: 137EV

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, March - 2021

MODERN POWER ELECTRONICS

(Electrical and Electronics Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks

- 1.a) Explain VI characteristics of SCR.
b) Enumerate Voltage Equalization for GCTs. [7+8]
- 2.a) Discuss Third Harmonic Injection PWM.
b) State and describe Even-Order Harmonic Elimination in cascaded H bridge multilevel inverter. [8+7]
- 3.a) With neat sketch explain operation of Three-Level Inverter.
b) Discuss Feedback Control of Neutral-Point Voltage. [8+7]
- 4.a) Discuss operation of Buck converter and boost converter.
b) Discuss dc-dc converters with electrical isolation. [8+7]
- 5.a) Explain resonant-dc-link inverters with zero-voltage switching's.
b) Discuss Load-resonant converters with circuit and operation. [8+7]
- 6.a) Enumerate Space Vector Modulation.
b) Explain the operation of Bipolar Pulse-Width Modulation. [8+7]
- 7.a) Explain Main Causes of Voltage Unbalance in series connected devices.
b) Explain different characteristics of IGBT. [8+7]
8. Explain the even order harmonic elimination in diode changed multilevel inverters. [15]

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