



Regulation R17

Subject code: 1E7BE

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech IV Year I Semester Supplementary Examinations, July 2022

ADVANCED POWER ELECTRONICS

(EEE)

Maximum Marks: 70

Duration: 3 hours

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 What is press-pack diode?
- 2 What are the classifications of GCT device?
- 3 How to reduce total harmonic distortion to below 10%?
- 4 What is a third harmonic injection PWM.
- 5 What is Zero vector ?
- 6 What are the voltage vector ,switching state and dwell time in Seven-Segment Switching Sequence
- 7 Draw the block diagram of PWM?
- 8 What are the various types of dc-dc converters with isolation?
- 9 What are the classifications of dc-to-dc and dc-to-ac converters in load resonant converters?
- 10 What is high-frequency-link integral-half-cycle converters?

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 What are the advantages and disadvantages of GCTs? [10]
OR
- 12 Explain the operation of IGBT? [10]
- 13 Explain in detail with waveforms and harmonic spectrum of Unipolar Pulse-Width Modulation. [10]
OR
- 14 Discuss the Third Harmonic Injection PWM ? [10]
- 15 Discuss about detailed operation of Diode clamped multi level Inverter? [10]
OR
- 16 What are the requirements for switching sequence design in the NPC inverter? [10]
- 17 Explain the operation of buck converter in continuous conduction mode with necessary equations and waveforms? [10]
OR
- 18 Explain the operation of full bridge DC-DC converter. [10]
- 19 Explain Uninterruptible power supplies with block diagram and circuits. [10]
OR
- 20 What are the advantages and disadvantages of resonant power supplier? [10]