

Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025

Fifth Semester

Electrical and Electronics Engineering

EE3591 – Power Electronics

Regulations - 2021

Duration : 3 Hrs

Maximum : 100 Marks

*PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)*

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	Classify the two types of snubber circuits.	L2	1	2
2.	Define switching loss in MOSFETs.	L1	1	2
3.	List out the advantages of IGBT.	L1	2	2
4.	Comparison between VSI and CSI.	L2	2	2
5.	Recall the power diode.	L1	3	2
6.	Tell me the term form factor in rectifiers.	L1	3	2
7.	What is meant by latching current in SCR?	L1	4	2
8.	Why are used thermal protection for power devices?	L1	4	2
9.	Infer the four triggering modes of TRIAC.	L2	5	2
10.	Mention the applications of a TRIAC.	L1	5	2

*PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)*

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Explain the dynamic behavior of MOSFETs with switching waveform analysis.	L2	1	16
	Or			
	b Determine the construction and operation and design aspects of a Buck-Boost converter.	L2	1	16
12.	a Build the static and dynamic characteristics of IGBT with waveforms.	L3	2	16
	Or			
	b Construct the operation of a single-phase full-bridge inverter with load voltage waveforms.	L3	2	16
13.	a Determine the construction and VI characteristics of a power diode.	L5	3	16
	Or			
	b Evaluate the working and advantages of LC filters used in power rectifiers.	L5	3	16

14.	a	Analysis the two-transistor analogy of SCR and how it helps to understand SCR turn-on.	L4	4	16
		Or			
	b	Simplify the construction and operation of a single-phase 1-pulse controlled converter with relevant waveforms.	L4	4	16
15.	a	Organize the operation of TRIAC with positive and negative gate pulse triggering.	L3	5	16
		Or			
	b	Apply the working of a three-phase SCR-based AC voltage controller with neat diagram.	L3	5	16