Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

UG/PG DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2026

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)

Q.No	*Questions*	*BTL*	*CO*	*Marks*
1.	What do you mean by controlled switch?	L1	1	2
2.	Recall the terms of resonant converter.	L1	1	2
3.	Compare VSI and CSI.	L2	2	2
4.	What is voltage sources inverter?	L1	2	2
5.	Find the major difference between full bridge rectifier and bridge rectifier.	L1	3	2
6.	Define distortion factor.	L2	3	2
7.	List various applications of phase-controlled converters.	L1	4	2
8.	Tell me the harmonic factor.	L1	4	2
9.	State the demerits of AC voltage controller.	L1	5	2
10.	Outline the AC voltage controller.	L2	5	2

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

Q.No		*Questions*	*BLT*	*CO*	*Marks*
11.	a	Explain the steady State (static) and switching characteristics of MOSFET.	L2	1	16
		Or			
	b	Demonstrate the basic step down (buck) converter with required diagram and waveform.	L2	1	16
12.	a	Build the construction and operation of single-phase half bridge inverter with suitable diagram with help of waveforms.	L3	2	16
		Or			
	b	With neat diagram organize the pulse width modulation method of voltage control inverter.	L3	2	16
13.	a	Determine the construction and working of single-phase full wave rectifier with R load with neat sketch and draw its waveform.	L5	3	16
		Or			
	b	Draw and evaluate the working principle of Voltage Doubler circuit.	L5	3	16
14.	a	Contrast the two-transistor behavioral model of a Thyristor along with thermal protection with suitable sketch.	L4	4	16
		Or			
	b	Simplify the construction and working of single-phase semi converter with the help of waveform for resistive load.	L4	4	16
15.	a	Examine the construction and operation of single-phase AC controller with R load with required sketch.	L4	5	16
		Or			
	b	With sketches survey the structure and operation of TRIAC and also discuss about the VI characteristics of TRIAC.	L2	5	16