MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

SEVENTH SEMESTER B. TECH (ELECTRONICS AND INSTRUMENTATION)
PROCTORED ONLINE END SEMESTER EXAMINATION Dec. 21/Jan. 22
SUBJECT: Power Electronics (ICE 4067)

TIME: 2.20-3:45 PM **DATE: 20/12/2021** **MAX MARKS 20**

Note: Answer All questions.

1	A	With the help of circuit diagram and necessary waveforms, discuss the working of a three-phase M-3 converter feeding a resistive load.	4M
	B	With the help of circuit diagram and waveforms, discuss the working of a single-phase-to-single-phase step down cycloconverter.	3M
	C	A single-phase full wave AC voltage controller feeds a load of R=20Ω with an input voltage of 230V, 50 hz. Compute the rms value of load current and load power for SCR firing angle of (a) 45° and (b) 60°.	3M
2	A	With the help of circuit diagram and waveforms, explain the working of a single-phase parallel inverter.	4M
	B	Explain the working of a Morgan chopper with necessary circuit diagram and waveforms.	4M
	C	A single-phase full converter bridge is connected to a RLE load configuration. For a source voltage of 230 volts, 50 hz, the average load current of 15 A is constant over the working range. For a load of R=2 Ω, compute the firing angle delay for a) E = -80 V and b) E = 100 V.	2M