Seat No.:	Enrolment No.

		GUJARAT TECHNOLOGICAL UNIVERSITY	
Su	hiec	BE - SEMESTER-VII (OLD) - EXAMINATION – SUMMER 2017 t Code: 170906 Date: 29/04/20	17
	U	t Name: Advanced Power Electronics - I (Department Elective - I)	1,
	•	02:30 PM to 05:00 PM Total Marks:	70
Ins	tructi		
	2	Attempt all questions.Make suitable assumptions wherever necessary.Figures to the right indicate full marks.	
Q.1	(a)	Explain operation of 12-pulse converter with circuit diagram and input-output voltage waveforms.	07
	(b)	Discuss Full bridge dc-dc converter with necessary diagram and waveforms.	07
Q.2	(a)	Discuss basic concept of multilevel inverter. Write advantages and disadvantages of multilevel inverter.	07
	(b)	Give the comparison between ZCS & ZVS inverter. OR	07
	(b)	Draw block diagram of UPS and discuss each block in detailed.	07
Q.3	(a) (b)	Discuss operation of flying capacitor multilevel inverter. Discuss series resonant inverter with neat circuit diagram and waveform.	07 07
		OR	
Q.3	(a) (b)	Explain working of fly-back type switch mode power supply. With neat circuit diagram and waveform discuss class E resonant inverter.	07 07
Q.4	(a)	Discuss operation of one basic unit of cascaded multilevel inverter. Derive phase and line voltage waveforms for Five level Cascaded multilevel inverter.	07
	(b)	Write a short note on Variable reluctance Stepper Motor. OR	07
Q.4	(a) (b)	Discuss L type ZCS resonant inverter with neat circuit diagram and waveform. State the difference between isolated and non-isolated dc power supply.	
Q.5	(a)	Discuss working and operation of Brushless dc motor. Show derivation of switching pulses using Hall sensor signals.	07
	(b)	Compare multipulse converter with multilevel inverter. OR	07
Q.5	(a)	Discuss working principle of SRM. Explain block diagram of SRM drive.	07
	(h)	Describe various transformer connections used for multipulse converter	07
