Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII EXAMINATION - SUMMER 2016

Subject Code:170906 Date		t Code:170906 Date:05/05/201	:05/05/2016	
Ti	me:0	t Name: Advanced Power Electronics - I (Department Elective - I) 2:30 PM to 05:00 PM Total Marks:	70	
ins	2.	ons: Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	Explain the operation of Two quadrant ZVS resonant converter with	07	
	(b)	appropriate waveforms. Explain operation of Series resonant inverter with appropriate waveforms, mentioning necessary design equations.	07	
Q.2	(a) (b)	Write a short note on Resonant dc link inverter. Draw and explain three phase Cascaded multilevel inverter. OR	07 07	
	(b)	Give Comparison between ZCS and ZVS resonant converters.	07	
Q.3	(a) (b)	Explain construction and working of Flying capacitor type multi level inverter. Figure out the specifications/properties of a good power supply. Explain construction and working of Fly back converter type switched mode dc power supply.	07 07	
~ ~		OR		
Q.3	(a) (b)	Explain 12-pulse converter with a note on its transformer connection and Harmonics propagation, along with its merits over 6-pulse converter. Compare various configurations of dc power supply.	07 07	
Q.4	(a)	Draw and explain Push pull converter type switched mode dc power supply along with its applications.	07	
	(b)	Describe construction and working of full bridge converter type switched mode dc power supply along with its applications and relative merits.	07	
Q.4	(a)	OR List type of Switch Mode AC Power supplies and explain any one in brief.	07	
7.7	` '	Write a short note on Switched reluctance motor drive.	07	
Q.5	(a)	Compare on line and off line UPS and explain any one in brief along with explanation of all its building blocks.	07	
	(b)	Explain construction and working of permanent magnet brush less DC machines.	07	
Q.5	(a)	OR Write a short note on Switched reluctance motor drive.	07	
~	(b)	List the types of Stepper motors. Explain construction of any one in brief along with the micro stepping operation.	07	
