Enrol	lment	No.
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GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-IV EXAMINATION – SUMMER 2016

Subject Code:142402 Subject Name:Fundamentals of Power Electronics		ect Name:Fundamentals of Power Electronics		
	Time Instru	:10:30 AM to 01:00 PM Total Marks: 70		
		 Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 		
Q.1	(a) (b)	Write a technical note on:- TURN ON methods of SCR. List the characteristics of an ideal switch.	07 07	
Q.2	(a)	Describe different region of operation of an SCR with the help of V-I Characteristics.	07	
	(b)	Define DIAC. Draw & Explain schematic diagram, symbol and V-I Characteristic of DIAC.	07	
	(b)	OR	07	
01	(b)	Explain working of IGBT with neat and clean diagram.		
Q.3	(a)	Draw & Explain equivalent circuit and transient response of Fast Recovery Diode.	07	
	(b)	Draw and Explain the schematic diagram, symbol and V-I characteristic of LASCR in detail.	07	
	OR O.3 (a) Explain UJT characteristics. How UJT works as relaxation oscillator? 07			
Q.3	(a) (b)	Explain UJT characteristics. How UJT works as relaxation oscillator? Enlist all triggering modes of TRIAC. Explain most sensitive mode.		
Q.4	(a) (b)	Compare 1-phase & 3-phase uncontrolled rectifier. Define Chopper. Enlist and Explain the control strategies employed in DC Chopper for operating the switches.	07 07	
0.4		OR Discuss causes and effect of di/dt and dv/dt problem for Thyristor and Explain	07	
Q.4	(a)	its remedies.	U/	
	(b)	Draw and explain STEP-UP Chopper with necessary equation.	07	
Q.5	(a)	Explain the basic principle and working of single-phase step down cycloconverter.	07	
	(b)	Define Commutation. Enlist the different types of commutation methods and explain any two in detail.	07	
		OR		
Q.5	(a)	Draw & Explain single phase MC-MURRAY Inverter circuit with voltage and current waveforms.	07	
	(b)	Define and classify a.c. voltage controllers. Explain in Detail single phase a.c. Regulators.	07	
