Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

BE - SEMESTER-VI (OLD) - EXAMINATION – SUMMER 2017				
Su	bject	Code: 162405 Date: 10/05	5/2017	
Su	bject	Name: Power Processing Circuits - I		
Ti	me: 1	0:30 AM to 01:00 PM Total Mar	ks: 70	
Ins	tructio	ns:		
	1.	Attempt all questions.		
	2.	Make suitable assumptions wherever necessary.		
	3.	Figures to the right indicate full marks.		
Q.1	a	Discuss 3-phase controlled rectifier with resistive load with necessary waveforms.	08	
	b	Compare:	06	
		<ul><li>(i) Controlled and un-controlled rectifier</li><li>(ii) ZVS and ZCS.</li></ul>		
Q.2	a	Describe modeling of a controlled rectifier.	07	
	b	Discuss current mode control of power supply in detail.  OR	07	
	b	Explain working of input and output filter for a linear regulated power supply.	07	
Q.3	a	Analyze the operation of Morgan's Chopper with necessary wave forms.	07	
	b	Draw and explain a type –A chopper circuit. Also explain how chopping period & duty cycle is determined.	07	
		OR		
Q.3	a	Describe various control strategies for chopper circuit.	07	
	b	Derive an expression for (i) average load voltage and (ii) rms load voltage for a single-phase diode rectifier feeding inductive load.	07	
Q.4	a	Write short note on: Multi quadrant converter.	07	
	b	Discuss with the help of power circuit operation of a full bridge converter.  OR	07	
Q.4	a	Write short note on: Fly back converter.	07	
	b	Classify non-isolated DC-DC converter and explain any one.	07	
Q.5	a	Write short note on: ZVS clamped voltage DC-DC converter	07	
	b	Write short note on: Load resonant converter  OR	07	
Q.5	a	Discuss any one three terminal IC based voltage regulator.	07	
	b	Write short note on: Resonant DC-DC converter	07	

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