Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VI Examination-Nov/Dec-2011

Subject code: 162405 **Date: 30/11/2011**

Subject Name: Power Processing Circuits-I

Time: 10.30 am -1.00 pm **Total marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Notations used have usual meaning.**

Q.1	**(a)**	Explain operation of single phase semi converter with R-L load. Also draw necessary waveforms.	**07**
	(b)	Compare single phase and three phase rectifier circuits.	**07**
Q.2	**(a)**	Explain single phase full bridge uncontrolled rectifier with neat sketch. Draw appropriate waveforms.	**07**
	(b)	Discuss the effect of source inductance on converter operation.	**07**
		OR	
	(b)	Explain inverter mode control of controlled rectifier.	**07**
Q.3	**(a)**	Draw and explain basic block diagram of linear regulated power supply.	**07**
	(b)	Explain class A chopper circuit and deduce an expression for output voltage of chopper circuit.	**07**
		OR	
Q.3	**(a)**	Discuss IC based 78xx positive voltage regulator.	**07**
	(b)	Draw and explain jone's chopper circuit with neat diagram.	**07**
Q.4	**(a)**	Explain working of class B chopper circuit neat diagram.	**07**
	(b)	A step down chopper is supplied through Vdc feeding to resistive load. Find an expression for (i) average output voltage (ii) rms output voltage (iii) input resistance to chopper circuit.	**07**
		OR	
Q.4	**(a)**	A resistive load R is fed through single phase half wave controlled rectifier. Find an expression for (i) average output voltage (ii) rms output voltage	**07**
	(b)	Explain concept of resonant based ZCS converter in brief.	**07**
Q.5	**(a)**	Draw and explain three phase half wave rectifier circuit with neat diagram.	**07**
	(b)	Explain working of SEPIC DC to DC converter circuit.	**07**
		OR	
Q.5	**(a)**	Discuss fly-back DC to DC converter.	**07**
	(b)	Explain multi phase chopper circuit with necessary waveforms.	**07**

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