Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER–V. EXAMINATION – SUMMER 2016

Subject Code:X50903 **Date:06/05/2016**

Subject Name:Power Electronics-II

Time:02:30 PM to 05:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Compare voltage source inverters with current source inverters.	**07**
	(b)	Discuss selected harmonic elimination PWM technique.	**07**
Q.2	**(a)**	Discuss three phase bridge inverters with 120^0 conduction. Draw waveforms of line voltage and phase voltage.	**07**
	(b)	Discuss principle of voltage control of three phase inverter.	**07**
		OR	
	(b)	Explain current source inverter and its applications.	**07**
Q.3	**(a)**	Discuss operation of three phase full wave controllers with Y connected load.	**07**
	(b)	Discuss basic principle of matrix converter.	**07**
		OR	
Q.3	**(a)**	Explain operation of single phase electronic transformer connection changers.	**07**
	(b)	Explain single phase full wave controllers with R-L load.	**07**
Q.4	**(a)**	Discuss operation of load commutated cyclo converter.	**07**
	(b)	Discuss sine PWM technique. For carrier to modulation frequency ratio of 15, draw harmonic spectrum.	**07**
		OR	
Q.4	**(a)**	Explain working principle of three phase cyclo converter. Mention its applications.	**07**
	(b)	Explain SVPWM technique. Mention its advantages over other PWM technique.	**07**
Q.5	**(a)**	Discuss V/f control of induction motor drive.	**07**
	(b)	Explain use of AC converter in static VAR compensator.	**07**
		OR	
Q.5	**(a)**	Explain AC motor operation with non sinusoidal supply waveform.	**07**
	(b)	Explain synchronous motor drive with load commutated thyristor inverter.	**07**

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