Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC– SEMESTER V– • EXAMINATION – SUMMER - 2016

Subject Code: X50903 **Date:17/11/2016**

Subject Name: Power Electronics-II

Time:10:30 AM to 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.**

Q.1	**(a)**	List the commonly used PWM technique for voltage control of inverter. Explain any one in details with neat waveform.	**07**
	(b)	Explain working of three phase voltage source inverter with 120 degree conduction. Draw Waveforms.	**07**
Q.2	**(a)**	Draw different configurations of three phase AC-AC Voltage controller. Write the difference between them.	**07**
	(b)	Explain single phase AC-AC Controller (Regulator) with R-L Load. Derive equation for Average and RMS output voltage.	**07**
		OR	
	(b)	Explain Third harmonic PWM in detail with output waveforms.	**07**
Q.3	**(a)**	Explain effect of non sinusoidal supply voltage on AC motor operation. Also discuss principle of variable frequency control.	**07**
	(b)	Distinguish VSI and CSI and specify their applications.	**07**
		OR	
Q.3	**(a)**	Compare on-off control & phase angle control of AC voltage controller.	**07**
	(b)	Discuss Matrix converter in detail.	**07**
Q.4	**(a)**	Explain v/f control of three phase induction motor.	**07**
	(b)	State the various points of comparisons and their choice/criterion for selection between AC and DC drives.	**07**
		OR	
Q.4	**(a)**	Discuss closed loop control of induction motor.	**07**
	(b)	Explain self controlled synchronous motor drive. How it can be implemented?	**07**
Q.5	**(a)**	Explain Self controlled synchronous motor drive employing a Cycloconverter.	**07**
	(b)	Describe application of AC voltage controller as Transformer tape changer.	**07**
		OR	
Q.5	**(a)**	Explain Induction and RF heating in details.	**07**
	(b)	Write a note in static VAR Compensators.	**07**

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