Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – VI (NEW).EXAMINATION – WINTER 2016

Subject Code: 2160902 Date: 25/10/2016

Subject Name: Power Electronics – II

Time: 10:30 AM to 01:00 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)**	State the merits & demerits of current source inverter & voltage source inverter.	**07**
	(b)	What are the methods of speed control of induction motor? Explain any one method in detail.	**07**
Q.2	**(a)**	Explain 1-Ø full-wave AC controller with circuit diagram and wave form.	**07**
	(b)	Distinguish series inverter and parallel inverter.	**07**
		OR	
	(b)	Explain Sine wave PWM technique. What is the effect of modulation index on output? Explain its merit and demerit.	**07**
Q.3	**(a)**	Explain the working principle of 1-Ø cycloconverter.	**07**
	(b)	Explain 120 degree mode of 3-Ø bridge inverter with resistive load.	**07**
		OR	
Q.3	**(a)**	Explain 180 degree mode of operation for 3-Ø bridge inverter with resistive load.	**07**
	(b)	Explain 3-Ø Cycloconverter.	**07**
Q.4	**(a)**	Explain full bridge topology of 1-Ø bridge inverter with resistive load.	**07**
	(b)	Explain 3-Ø Synchronous Motor Drives using variable frequency control technique.	**07**
		OR	
Q.4	**(a)**	Explain rotor resistive control for induction motor using power electronics device.	**07**
	(b)	Explain constant V/F control with the help of block diagram for Induction motor.	**07**
Q.5	**(a)**	Explain Stator voltage control with AC voltage controller for 3-Ø Induction Motor drive.	**07**
	(b)	Give classification of different techniques for voltage control of inverter. Explain any one.	**07**
		OR	
Q.5	**(a)**	Explain working of Matrix AC to AC converter.	**07**
	(b)	Comparison of ac & dc drive and their selection for particular application.	**07**

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