Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 2160910 **Date: 26/10/2016**

Subject Name: Electrical Drives

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)**	What is electric drive? Advantages of electrical drive.	**07**
	(b)	Explain drive parameter, 1) Loads with rotational motion. 2) Loads with translational motion.	**07**
Q.2	**(a)**	Explain type-A and type-B chopper.	**07**
	(b)	Explain the analysis of the PWM half bridge inverter.	**07**
		OR	
	(b)	Explain the sliding mode control method.	**07**
Q.3	**(a)**	Explain the model referencing adaptive control (MARC) method.	**07**
	(b)	Explain the torque equation for D.C motor.	**07**
		OR	
Q.3	**(a)**	Explain the Dynamic model of DC motor drive.	**07**
	(b)	Explain speed torque characteristics of DC series motor, DC shunt motor ,and PMDC motor.	**07**
Q.4	**(a)**	Different between VSI & CSI induction motor drives.	**07**
	(b)	Explain d-q model of induction motor.	**07**
		OR	
Q.4	**(a)**	Explain advantages & disadvantages of traction drives.	**07**
	(b)	Explain basic structure of solar and battery powered drives.	**07**
Q.5	**(a)**	Explain speed torque conventions and multi quadrant operation of drives.	**07**
	(b)	Explain steady-state and transient stability of an electric drive.	**07**
		OR	
Q.5	**(a)**	Explain four quadrant chopper (Type-E chopper).	**07**
	(b)	Explain single phase semiconductor & half controlled converter.	**07**

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