Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III EXAMINATION – SUMMER 2016

Subject Code:133402 **Date:31/05/2016**

Subject Name:Electrical Drives and Controls

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)**	Explain types of electric drives and factor affecting selection of electric drive.	**07**
	(b)	Explain motors used for steel rolling mills and hoists.	**07**
Q.2	**(a)**	Explain types of DC motors with equation.	**07**
	(b)	A 4 pole, 3 phase, 50 Hz star connected induction motor has a full load slip of 4%. Calculate full load speed of the motor.	**07**
		OR	
	(b)	A DC shunt motor runs at a speed of 1000 rpm on no load taking a current of 6 ampere from the supply, when connected to 220 volts dc supply. Its full load current is 50 ampere. Calculate its speed on full load. Assume Ra= 0.3 ohms and Rsh= 110 ohms.	**07**
Q.3	**(a)**	Explain construction of 1 Phase Squirrel Cage induction motor and double revolving field theory.	**07**
	(b)	Explain characteristics of DC series motor.	**07**
		OR	
Q.3	**(a)**	Explain plugging and regenerative braking for induction motor.	**07**
	(b)	Explain shaded pole induction motor.	**07**
Q.4	**(a)**	Explain necessity of starter for dc motor with equations.	**07**
	(b)	Explain speed control for DC shunt drives.	**07**
		OR	
Q.4	**(a)**	Explain stator resistance starter.	**07**
	(b)	Explain starter used for DC series motor with neat diagram.	**07**
Q.5	**(a)**	Explain single phase half wave controlled rectifier with resistive load.	**07**
	(b)	Explain classification of Choppers with neat diagram.	**07**
		OR	
Q.5	**(a)**	Compare Half controlled & full controlled rectifiers.	**07**
	(b)	Explain Ward-Leonard system of speed control.	**07**

****