Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III(OLD) • EXAMINATION – WINTER 2016

Subject Code:133402 **Date:04/01/2017**

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)**	Compare AC & Drives.	**07**
	(b)	Explain types of Electric Drives.	**07**
Q.2	**(a)**	Derive Torque equation of DC motor.	**07**
	(b)	A 250 volt DC shunt motor takes a line current of 20 amps. Resistance of Shunt field winding is 200 Ohms and resistance of the armature is 0.3 ohms. Find the armature current and Back emf.	**07**
		OR	
	(b)	A 4 pole 250v DC series motor has a wave connected armature with 200 conductors. The flux per pole is 25mWb when motor is drawing 60 amps from the supply. Armature resistance is 0.15 ohms while series field winding resistance is 0.2 ohms. Calculate the speed under this condition.	**07**
Q.3	**(a)**	Explain 3 Phase Squirrel Cage and Slip ring induction motor.	**07**
	(b)	Explain braking of DC shunt motor.	**07**
		OR	
Q.3	**(a)**	Explain Torque slip Characteristics of 3 Phase induction motor.	**07**
	(b)	Explain Shaded pole Induction motor.	**07**
Q.4	**(a)**	Explain necessity of starter for DC motors and basic arrangement of starter.	**07**
	(b)	Explain frequency control for AC drives.	**07**
		OR	
Q.4	**(a)**	Explain DOL starter.	**07**
	(b)	Explain 3 Point starter with neat diagram.	**07**
Q.5	**(a)**	Explain Slip power recovery scheme for AC drives.	**07**
	(b)	Compare Half controlled & full controlled rectifiers.	**07**
		OR	
Q.5	**(a)**	Explain classification of Choppers with neat diagram.	**07**
	(b)	Explain Ward-Leonard system of speed control.	**07**

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