Seat No.: _____ EnrolmentNo._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER–II • EXAMINATION – SUMMER • 2015

Subject Code: X21101 **Date:01/06/2015**

Subject Name: Electrical Engineering

Time: 10.30am-01.00pm **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 construction and working of Schrage motor.	**07**
	(b)	Classify different type of DC generator. Derive EMF equation of DC generator.	**07**
Q.2	**(a)**	Explain speed torque characteristics of all types of DC Motors.	**07**
	(b)	What are the methods of starting of DC Motor? Explain any one in detail.	**07**
		OR	
	(b)	State different methods of speed control of DC Shunt Motor. Explain Ward Leonard method.	**07**
Q.3	**(a)**	Explain the procedure to obtain efficiency and regulation using the direct loading test.	**07**
	(b)	Explain working principle of single phase transformer.Also derive emf equation.	**07**
		OR	
Q.3	**(a)**	Explain Transformer ON load. Draw its vector diagram at unity Power factor and at lagging power factor.	**07**
	(b)	The core of a three phase, 50 Hz, 11000/550 V delta/star, 300 KVA, core type transformer operate with a flux of 0.05 Wb. Find (1) Number of H.V and L.V turns per phase (2) e.m.f per turns (3) full load H.V and L.V phase current.	**07**
Q.4	**(a)**	Explain why single phase induction motor is not self starting? Explain the starting method for single phase induction motor in brief.	**07**
	(b)	State the various types of single phase AC motors. Explain Capacitor start and induction run type 1 phase induction motor.	**07**
		OR	
Q.4	**(a)**	Explain double field revolving theory.	**07**
	(b)	State different application and types of servomotor.	**07**
Q.5	**(a)**	Why synchronous motor is not self starting? Explain its principle Of operation and methods of starting.	**07**
	(b)	Explain the difference between cylindrical and salient pole rotors used in large alternator. Define (1) pitch factor (2) Distribution factor (3) Form factor.	**07**
		OR	
Q.5	**(a)**	Define Voltage regulation of alternator. State various methods to find voltage regulation and Explain any one method in detail.	**07**
	(b)	Explain the operating principle of synchronous motor. Draw the vector diagrams when the synchronous motor	**07**

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