Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– V(OLD) EXAMINATION – SUMMER 2019

Subject Code:150901 Date:19/06/2019

Subject Name:Electrical Machine - II

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)**	Explain the Parallel operation of 3-phase transformer.	**07**
	(b)	Discuss different methods of speed control of 3–phase Induction motor.	**07**
Q.2	**(a)**	Explain cogging effect and crawling effect in detail.	**07**
	(b)	Explain the polarity test in 3-phase Transformer.	**07**
		OR	
	(b)	Why we require starters for 3- phase induction motors? Explain Auto-transformer starter with necessary circuit diagram.	**07**
Q.3	**(a)**	Describe the construction and working of a double-cage induction motor.	**07**
	(b)	Explain principle, advantages and applications of Linear Induction Motor.	**07**
		OR	
Q.3	**(a)**	Why a 1-phase induction motor is not self starting? Explain the starting methods for single phase induction motor in brief.	**07**
	(b)	Explain Scott connection for transformer with diagram.	**07**
Q.4	**(a)**	Discuss the doubly fed induction motor with its advantages and disadvantages.	**07**
	(b)	Explain the Sumpner's test in 3-phase transformer.	**07**
		OR	
Q.4	**(a)**	A squirrel cage induction motor when started by means of a star-delta starter takes 180% of full load line current and develops 35% of full load torque at starting. Calculate the starting torque and current in terms of full load values, if an auto transformer with 75% tappings were employed.	**07**
	(b)	Discuss the construction, working principle and applications of shaded pole induction motor.	**07**
Q.5	**(a)**	Explain working principle, construction of Repulsion motor.	**07**
	(b)	Explain construction of welding transformer. How does it differ from power transformer?	**07**
		OR	
Q.5	**(a)**	Explain working principle and construction of scharge motor.	**07**
	(b)	Explain the construction, working principle and applications of induction generator.	**07**

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