Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V- EXAMINATION – SUMMER 2016

Subject Code: 150802 **Date: 06/05/2016**

Subject Name: Electrical Machine

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 difference between simplex lap winding and simplex wave winding in D.C machine.	**07**
	(b)	Explain different parts of D.C.Machine	**07**
Q.2	**(a)**	Explain Scott connection.	**07**
	(b)	Describe the merits and demerits of various connections of three phase transformer	**07**
		OR	
	(b)	Explain different methods to minimize the armature reaction.	**07**
Q.3	**(a)**	What are the various methods for induction motor speed control? Explain any two methods in detail	**07**
	(b)	Why single phase induction motor is not self-starting? Explain Double field revolving theory of single phase induction motor.	**07**
		OR	
Q.3	**(a)**	Explain delta/star and star/star vector group for three phase Transformer.	**07**
	(b)	Explain universal motor and shaded pole induction motor.	**07**
Q.4	**(a)**	Give Comparison between Synchronous motor and induction motor.	**07**
	(b)	Explain No load & Blocked rotor test of 3-phase Induction motor.	**07**
		OR	
Q.4	**(a)**	With neat diagram describe operation of permanent magnet brushless DC motor.	**07**
	(b)	Describe Hopkinson's test in detail with its advantages and disadvantages.	**07**
Q.5	**(a)**	Explain "V curve" and "invert V curve" of synchronous motor.	**07**
	(b)	Explain power developed by synchronous motor.	**07**
		OR	
Q.5	**(a)**	Explain the construction and working of variable reluctance steeper motors	**07**
	(b)	Explain the Double cage induction motor and what is the advantage of Double cage induction motor?	**07**

****