Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER V • EXAMINATION – WINTER - 2012

Subject code: 150802 **Date: 16-01-2013**

Subject Name: Electrical Machines- 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 difference between simplex wave winding and simplex wave winding in D.C machine.	**07**
	(b)	What is the armature reaction? What is the effect of armature reaction on performance of D.C.Machine?	**07**
Q.2	**(a)**	Explain the Scott connection with vector diagram for transformer.	**07**
	(b)	Explain Hopkinson Test for D.C.Machine.	**07**
		OR	
	(b)	Explain different methods to minimize the armature reaction.	**07**
Q.3	**(a)**	What are different conditions for parallel operation of transformer? If turn ratio and the polarity is not same than what is the effect of its on parallel operation of transformer.	**07**
	(b)	Explain the star/delta and delta/star connection for three phase transformer.	**07**
		OR	
Q.3	**(a)**	What is mean by tertiary winding? What are the applications of tertiary winding?	**07**
	(b)	Draw the equivalent circuit for induction motor.	**07**
Q.4	**(a)**	What are the advantages of double cage induction motor on squirrel cage induction motor? Explain the construction of double cage induction motor.	**07**
	(b)	What is the procedure to draw the circle diagram for induction motor?	**07**
		OR	
Q.4	**(a)**	How can you perform blocked rotor and open circuit test on induction motor? Which parameter can we obtain form this data?	**07**
	(b)	Explain double field revolving theory for single phase induction motor.	**07**
Q.5	**(a)**	Explain capacitor start and capacitor run single phase induction motor.	**07**
	(b)	Explain the effect of over excitation and under excitation on power factor on synchronous motor.	**07**
		OR	
Q.5	**(a)**	Explain the working and construction of Permanent Magnet Brushless D.C.Machine.	**07**
	(b)	Explain different method of speed control of induction motor.	**07**

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