GUJARAT TECHNOLOGICAL UNIVERSITY
P.D.D.C. Sem- II Remedial Examination Nov / Dec. 2010

Subject code:X21901
Subject Name: ELECTRICAL MACHINES & ELECTRONICS

Date: 29 / 11/ 2010   **Time: 10.30 am – 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)	Explain construction and different parts of d.c.motor.	**07**
	(b)	Describe principle and working of d.c. motor and d.c.generator.	**07**
Q.2	(a)	Explain basic principle of single phase transformer. Derive e.m.f equation of single phase transformer.	**07**
	(b)	What is the difference between core type and shell type of transformer?	**07**
		OR	
	(b)	Explain different parts of single phase transformer.	**07**
Q.3	(a)	Explain speed-torque characteristics of d.c. shunt and series motor.	**07**
	(b)	Derive the torque equation of d.c.motor. Which type of losses occurs in d.c.motor? Explain with it suitable diagram.	**07**
		OR	
Q.3	(a)	What are the causes of low power factor? What is significance of it.	**07**
	(b)	Explain different method used to improve the power factor.	**07**
Q.4	(a)	Explain torque-slip characteristics of three phase induction motor.	**07**
	(b)	Give comparison between D.C and A.C transmission. What are the advantages of high voltage transmission?	**07**
		OR	
Q. 4	(a)	Explain how rotating magnetic field is produced in three phase induction motor.	**07**
	(b)	Explain different conditions of parallel operation of alternator.	**07**
Q.5	(a)	Explain full wave rectifier with suitable diagram and wave-form.	**07**
	(b)	Explain OR, AND, NOT, NAND and NOR gate with truth table and symbol.	**07**
		OR	
Q.5	(a)	Explain De-Morgan's theorem with equations and diagrams.	**07**
	(b)	Give comparison between indoor and outdoor substation.	**07**

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