GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER- II(New course) • EXAMINATION (Remedial) - WINTER- 2015

Sul Sul	bject biect	Code: 2724504 Date: 10/12/20 Name: Advance Electrical Machines	ate: 10/12/2015	
Time:2:30 pm to 5:00 pm Total Marks			: 70	
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a) (b)	Explain construction and working principle of B.L.D.C. Machine. Explain micro stepping control of stepper motor.	07 07	
Q.2	(a)	Explain electromechanical conversion in Switched Reluctance Motor (S.R.M.) with equation.	07	
	(b)	Discuss unipolar type converters used to control BLDC motor. OR	07	
	(b)	Explain in brief construction and working of hybrid stepper motor.	07	
Q.3	(a) (b)	Give the comparison between Brushless DC motor and induction motor. Compare between outer rotor and inner rotor BLDC motor.	07 07	
Q.3	(a)	Define following terms for stepper motor: Step angle, Response range, Holding torque, Detent torque, Pulls in torque, Pull out torque, Slew rate.	07	
	(b)	Compare VR, Permanent magnet and Hybrid stepper motor.	07	
Q.4	(a)	With proper diagram explains the working of C-dump converter used for Switched Reluctance Motor (S.R.M.).	07	
	(b)	Explain construction and working principle of Switched Reluctance Motor (S.R.M.).	07	
• •		OR	07	
Q.4	(a)	Switched Reluctance Motor (S.R.M.).	0/	
	(b)	Explain relationship between inductance and rotor position in Switched Reluctance Motor (S.R.M.).	07	
Q.5	(a)	Explain working of variable slip wind turbine Generator with diagram.	07	
	(b)	Discuss the construction and working of a Permanent magnet DC motor. OR	07	
Q.5	(a)	Discuss the construction and working of a Linear induction motor and its applications.	07	
	(b)	Discuss the construction and working of an AC series motor.	07	
