Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VI • EXAMINATION – SUMMER • 2015

Subject Code: 162003 Date: 08/05/2 Subject Name: Control of Electric Drives			015	
Tir	Fime:10.30am-01.00pm Total Marks: 7		70	
IIIS	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	Explain the basic block diagram of Electric Drive. Give difference between AC and DC drive	07	
	(b)	State and explain the factors affecting the choice of Electric drive.	07	
Q.2	(a) (b)	Explain the four quadrant operation of electric Drive. Explain the Torque-speed characteristics of DC motor.	07 07	
	(b)	Explain the Power control of DC series motor. Support the answers with waveforms.	07	
Q.3	(a) (b)	Explain the dynamic (switch on and off) characteristics of SCR. Draw and explain waveforms of output voltage, output current and voltage across thyristor for single phase half wave controlled rectifier with R, L and E load and without freewheeling diode.	07 07	
		OR		
Q.3	(a)	Explain armature control method for speed control in dc motor. State the merits and demerits of armature control method.	07	
	(b)	Explain the regenerative braking of separately excited DC motor with chopper drive.	07	
Q.4	(a)	Explain single phase semi-converter with circuit diagram and relevant Waveforms.	07	
	(b)	Explain the type B chopper with	07	
0.4	(a)	Explain the single phase full-wave converter with RLE load and expain the	07	
<u>ر</u>	(b)	operation for the firing angle beyond 90 degree. Describe the starting methods of Induction motor in detail.	07	
Q.5	(a) (b)	Explain the construction and working of universal motor in detail. Explain the single phase induction motor control with TRIAC control. Support answers with waveforms.	07 07	
05	(a)	OR Explain the construction and control of variable reluctance steeper motor in	07	
V ••	(a)	detail.	07	
	(b)	Explain the control of servo motor.	07	
