GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII EXAMINATION – WINTER 2015

	-	Code:181702 Date:04/12/201 Name: Motion Control	Date:04/12/2015	
•		:30pm to 5:00pm Total Marks:	Marks: 70	
		Attempt all questions. Make suitable assumptions wherever necessary.		
Q.1	(a) (b)	List out the performance characteristics of stepper motor and explain all of them. List out different classes of DC Motors. Explain all of them.	07 07	
Q.2	(a)	With suitable waveform and figure explain Unidirectional and Bi directional logic sequencer for stepper motor.	07	
	(b)	List out different type of Encoders for Motor speed measurement. Explain one of them	07	
		OR		
	(b)	Explain the application of transconductance power amplifier in DC motor speed control	07	
Q.3	(a)	List out and explain all the modes of PWM amplifier and derive speed control of DC motor using it.	14	
		OR		
Q.3	(a)	What are the selection criteria for stepper motor? Explain step angle resolution and torque requirements.	07	
	(b)	Explain the working of brushless DC motor with figure	07	
Q.4	(a) (b)	List the stepper motor applications. Explain any two of them in detail. Explain any one current limitation circuit for DC motor control with diagrams and calculation of it. OR	07 07	
Q.4	(a)	List out all methods for DC motor speed control. Explain any two of them	14	
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Q.5	(a)	Explain any one suppression circuit for DC motor control with diagrams and calculation of it.	07	
	(b)	List out the types of stepper motor. Explain any one of them with diagram. OR	07	
Q.5	(a)	Explain the Input and Output relationship in linear DC servo amplifier, with the help of schematic and mathematical model	14	
