GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VIII (old) - EXAMINATION – SUMMER 2018

Subject Code:181702   **Date:30/04/2018**
Subject Name:Motion Control
Time:10:30 AM to 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)**	Discuss various selection criteria for the DC motors for incremental motion control application.	**07**
	(b)	Enumerate applications of step motor and mention advantages and disadvantages of step motor.	**07**
Q.2	**(a)**	Describe the Magnetic pickup as encoder with necessary diagram.	**07**
	(b)	Write a short note on bidirectional servo amplifiers.	**07**
		OR	
	(b)	Explain torsional resonance in two body structure.	**07**
Q.3	**(a)**	Explain unipolar PWM amplifier.	**07**
	(b)	Classify DC motor and explain any one DC motor in detail.	**07**
		OR	
Q.3	**(a)**	Explain position control system with tachometer feedback.	**07**
	(b)	Write a short note on Phase locked servo systems.	**07**
Q.4	**(a)**	Explain velocity control system with voltage amplifier.	**07**
	(b)	List the various selection points of step motors and explain any two in detail.	**07**
		OR	
Q.4	**(a)**	Explain the role of speedup capacitor in active suppression controller	**07**
	(b)	Draw and describe bidirectional three phase logic sequencer drive circuit for step motor with its timing diagram.	**07**
Q.5	**(a)**	Draw and describe operation of linear variable reluctance step motor with necessary diagram.	**07**
	(b)	Explain closed loop control of step motor by current sensing.	**07**
		OR	
Q.5	**(a)**	Explain permanent magnet stator type of step motor.	**07**
	(b)	Explain any one application of step motor in detail.	**07**

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