GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2018

Subject Code: 2172402   **Date: 15/11/2018**

Subject Name: Industrial Drives & Control-II

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.

			MARKS
Q.1	(a)	Discuss advantages of stator voltage control method for Constant load –torque.	03
	(b)	Explain the any one application of AC Drives.	04
	(c)	Explain the Operation of induction motor on unbalanced source voltage.	07
Q.2	(a)	Enlist the application AC Drives & draw the block diagram of AC Drives.	03
	(b)	Describe the analysis of Induction Motor with Unbalanced rotor impedances.	04
	(c)	Draw and explain the thyristor configuration for a stator voltage controlled reversible-speed Induction Motor Drive. Also draw the speed-torque characteristics for a reversible induction motor drive.	07

OR

	(c)	Analyze the Induction Motor with Non Sinusoidal source Voltages in brief.	07
Q.3	(a)	Explain the principle behind the variation of the speed of a 3-Φ IM by v/f method for Operation below rated frequency.	03
	(b)	Describe the limitation of sub synchronous speed operation in AC Drives.	04
	(c)	Explain the concept of direct vector control of Induction Motor Drive.	07

OR

Q.3	(a)	Explain the Effect of harmonics and control of harmonics on induction motor.	03
	(b)	Explain the Transient analysis of Drives.	04
	(c)	Discuss Principle of indirect vector control with necessary diagram.	07
Q.4	(a)	Explain the torque slip characteristics for induction motor.	03
	(b)	Explain the Principle of Vector control.	04
	(c)	Explain the basic principle of DTFC for Voltage fed PWM inverter drives.	07

OR

Q.4	(a)	Explain the concept of SRM Motor.	03
	(b)	Compare CSI with VSI.	04
	(c)	Discuss on Permanent Magnet AC Motor Drive.	07
Q.5	(a)	Explain the Sensor less methods for scalar control AC motor drives.	03
	(b)	Explain VSI control for IM.	04
	(c)	Discuss reference frame theory for induction motor in brief.	07

OR

Q.5 **(a)** Explain the in details of introduction to observer based Techniques in Induction Motor Drives.   **03**

(b) Explain the Sinusoidal PMAC motor drives.   **04**

(c) Explain block diagram of feed-forward vector control for IM.   **07**

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