Seat No.:	Enrolment No.
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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII (OLD) - EXAMINATION - SUMMER 2017

Subject Code: 172402 Da		Code: 172402 Date: 02/05/2017	ate: 02/05/2017	
_		Name: Industrial Drives and Control - II 2:30 PM to 05:00 PM Total Marks: 70	D	
Instru			o .	
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	Draw and explain various connections used for stator voltage control of 3-phase Induction Motor.	07	
	(b)	Discuss Induction Motor speed control by variation of stator voltage. Also specify the applications.	07	
Q.2	(a) (b)	Discuss Vector Control of IM Drive. Discuss Modelling of Induction Machine. OR	07 07	
	(b)	Discuss Sensor less control of IM Drive.	07	
Q.3	(a) (b)	Explain Permanent Magnet AC Motor Drive. Explain CSI control for IM and compare it with VSI. OR	07 07	
Q.3	(a)	Draw and explain open loop Volts / Hertz control of Synchronous Machine Drive.	07	
	(b)	Explain Static Scherbius Drive and also derive the speed – torque relation for it.	07	
Q.4	(a)	Explain self – controlled synchronous motor drive using load commutated Thyristor inverter.	07	
	(b)	Discuss various control methods for speed control of SRM. Explain any one in brief.	07	
0.4	(-)	OR	07	
Q.4	(a) (b)	Discuss PWM Inverter Drive. Also specify the applications. Discuss dynamic breaking of IM.	07 07	
Q.5	(a)	Explain sub-synchronous static converter operation of IM under slip-power recovery scheme.	07	
	(b)	Discuss IM speed control by static variation of external rotor resistance. Where such drives are used?	07	
0.5		OR	^=	
Q.5	(a) (b)	Discuss the operation of 3-phase IM with single phasing. Discuss the effect of non-sinusoidal sources on IM.	07 07	
