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## **GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VI (NEW) - EXAMINATION - SUMMER 2016** 

S	Subject Code:2160910		16
$\mathbf{T}$	ime: struct	to Name: Electrical Drives  10:30 AM to 01:00 PM  Total Marks:  1. Attempt all questions.  2. Make suitable assumptions wherever necessary.  3. Figures to the right indicate full marks.	: 70
Q.1	<ul><li>(a)</li><li>(b)</li></ul>	What are the operating modes of three phase full converter with inductive load and explain any one.  Explain how to obtained a variable average output voltage from a fixed dc voltage with the help of chopper.	07 07
Q.2	(a) (b)		07 07
	<b>(b)</b>	Explain the nature and classification of load torques.	07
Q.3	(a) (b)	Explain the dynamic model of dc motor drive. A 200V dc series motor runs at 800rpm when operating at its full load current of 10A. the motor resistance is $0.5\Omega$ and magnetic circuit can be assumed unsaturated, what will be the speed if (a) the load torque is increase by 50% (b) the motor current is 5A.	07 07
Q.3	(a) (b)	1 1	07 07
Q.4	(a) (b)	Explain the constant flux speed control using voltage source inverter.  State the advantages and applications of synchronous motor drives.  OR	07 07
Q.4	(a) (b)	Explain the principle of vector control model for ac induction motor drives.	07 07
Q.5	(a) (b)	Explain the unipolar and bipolar PWM bridge inverter with necessary waveforms and circuit diagram.	07 07
Q.5	(a) (b)	OR Explain the basic structure of solar drives. Explain the servo motor drive requirement, control and implementation.	07 07
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