Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 171002 **Date: 02/05/2017**

Subject Name: Power Electronics

Time: 02:30 PM to 05:00 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)**	Describe two transistor model of Thyristor.	**07**
	(b)	Explain principle of operation of pulse width modulated inverter.	**07**
Q.2	**(a)**	Write short note on Switched mode Power Supply.	**07**
	(b)	List and describe Turn-on methods of Thyristor.	**07**
		OR	
	(b)	List and describe any two Turn-off methods of Thyristor.	**07**
Q.3	**(a)**	Write short note on single phase controlled rectifier.	**07**
	(b)	Explain principle of operation of step-up DC chopper.	**07**
		OR	
Q.3	**(a)**	Write short note on three phase controlled rectifier.	**07**
	(b)	Explain principle of operation of step-down DC chopper.	**07**
Q.4	**(a)**	Write short note on three phase inverter.	**07**
	(b)	Explain device structure and characteristics of IGBT.	**07**
		OR	
Q.4	**(a)**	Write short note on buck-boost converter.	**07**
	(b)	Write short note on RF heating.	**07**
Q.5	**(a)**	Write short note on performance parameters of inverter.	**07**
	(b)	Write short note on Battery charger.	**07**
		OR	
Q.5	**(a)**	Write short note on single phase inverter.	**07**
	(b)	Write short note on Uninterruptible Power Supply.	**07**

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