Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– VIII• EXAMINATION – SUMMER 2015

Subject Code: 182401 **Date:15/05/2015**

Subject Name: Power Electronics & Application in Power System

Time:10.30AM-01.00PM **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 power quality standards. Explain IEEE 519 standard in brief.	**07**
	(b)	What is optimization? State the requirements for improvement in utility interface.	**07**
Q.2	**(a)**	Classify static relay. Explain any one in detail.	**07**
	(b)	Explain Energy storage systems to utility grid & their interconnection with suitable example.	**07**
		OR	
	(b)	Draw block diagram of renewable energy utilization system. Explain each block in details.	**07**
Q.3	**(a)**	Discuss the effect of series compensation on power transfer capability.	**07**
	(b)	With the use of neat diagram explain the concept of UPFC.	**07**
		OR	
Q.3	**(a)**	Enlist first generation FACTS controller. Explain working of SVC in brief.	**07**
	(b)	Describe principle of operation & power exchange diagram for STATCOM.	**07**
Q.4	**(a)**	Compare HVDC with EHVAC system.	**07**
	(b)	Explain extinction angle control for 3-Phase full wave rectifier with necessary diagrams.	**07**
		OR	
Q.4	**(a)**	Explain basic 12 pulse converter used in high voltage DC system.	**07**
	(b)	Enlist & Explain various possible configuration of HVDC system.	**07**
Q.5	**(a)**	Discuss various factors requirements for limiting loading capability issue.	**07**
	(b)	Explain the basic operating principle, characteristics and application of TCSC.	**07**
		OR	
Q.5	**(a)**	Write a short note on: SSSC	**07**
	(b)	What is harmonic? Describe method of elimination of harmonics in HVDC system.	**07**

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