Seat No.: Enrol	ment No
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GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER- II(New course) • EXAMINATION (Remedial) - WINTER- 2015 Subject Code: 2720716 Date: 10/12/2015 Subject Name: FACTS

Total Marks: 70

Subject Name: FACTS Time: 2:30 pm to 5:00 pm

Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

Q.1	(a)	What are the conventional methods of voltage control? Explain any one in detail.	07
	(b)	Explain the working of STATCOM with its V-I characteristics.	07
Q.2	(a)	Explain the working of TCR with neat diagram. Also explain its V-I characteristics & draw the current & voltage waveform for two different firing angles.	07
	(b)	Explain the advantages of FACTS in brief.	07
		OR	
	(b)	Explain the mid- point compensation & also derive the equation of voltage at mid-point.	07
Q.3	(a)	Discuss in brief, about the functioning of SVC as a voltage regulator.	07
	(b)	Explain the working of TSC-TCR along with its operating characteristics.	07
	` /	OR	
Q.3	(a)	Explain the working of FC-TCR along with its V-I characteristics.	07
	(b)	Explain the parallel operation of two SVC's for load sharing for both the conditions i.e. with and without current droop.	07
Q.4	(a)	Explain the working of SSSC. Discuss its basic control scheme and also show different modes of operation.	07
	(b)	Explain in detail, why UPFC is the most versatile FACTs controller.	07
	` /	OR	
Q.4	(a)	Discuss the inductive vernier control mode for a TCSC.	07
	(b)	Explain the basic operating principle and working of TSC with neat circuit diagram and waveform.	07
Q.5	(a)	Discuss how the transient stability is Enhanced using SVC.	07
	(b)	Discuss the improvements in system stability and system damping using TCSC. OR	07
Q.5	(a)	Give the comparison of different FACTS controller.	07
-	(b)	Explain how power transfer capacity is improved using SVC	07
