

GUJARAT TECHNOLOGICAL UNIVERSITY**ME - SEMESTER– II (Old course)• REMEDIAL EXAMINATION – SUMMER 2015****Subject Code: 1720707****Date:15/05/2015****Subject Name: Flexible AC Transmission System****Time: 02:30 pm to 5:00 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) Which are the conventional voltage control mechanisms? Explain Excitation control method in detail. **07**
- (b) What are the advantages offered by FACTS devices? **07**
- Q.2** (a) Explain midpoint compensation & prove that by mid point compensation the power transfer capability of a transmission line can be doubled. **07**
- (b) Describe in brief the use of Static Var Compensators (SVC) as a Voltage Regulator. **07**
- OR**
- (b) What is TSC-TCR? How can it be differentiated from FC-TCR? **07**
- Q.3** (a) Explain main features of Phase-Locked Oscillator (PLO) Voltage Regulator **07**
- (b) Explain functions perform by Gate Pulse Generation (GPG) in TSC-TCR configuration. **07**
- OR**
- Q.3** (a) Draw and explain operating V-I characteristic of TCR and FC-TCR **07**
- (b) Explain TSC-TCR along with its operating characteristic. **07**
- Q.4** (a) Draw TCSC controller module and explain its basic principle. **07**
- (b) Discuss improvements in system stability and system damping using TCSC. **07**
- OR**
- Q.4** (a) Explain configuration of Saturated Reactor. **07**
- (b) Discuss the firing delay angle versus the net fundamental reactance characteristic of a TCSC. **07**
- Q.5** (a) Describe SSSC as Power flow controller. **07**
- (b) Describe Unified Power Flow Controller (UPFC) principle of operation. **07**
- OR**
- Q.5** (a) Give the Comparison of different FACTS controller. **07**
- (b) Describe the 6-pulse voltage source converter type STATCOM. **07**
