

Code: EEPC2T2

PVP 12

I M.Tech-II Semester-Regular Examinations-August 2014

**FACTS CONTROLLERS
(POWER SYSTEM CONTROL AND AUTOMATION)**

Duration: 3 hours

Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

- 1 a) Write a short notes on Dielectric Capability, Thermal Capability, and Stability Capability? 7 M

- b) What are the different parameters to control the power flow in AC systems and explain their relative importance and also draw the phasor diagram? 7 M

- 2 a) With a neat schematic diagram, explain the various control attributes for different FACTS controllers. 7 M

- b) Explain the objectives of FACTS controllers in the power system network. 7 M

- 3 Explain the construction and working of 3 phase full wave bridge type Voltage Source Converter for 24-pulse operation with relevant waveforms. 14 M

- 4 Explain the working and operation TCR, TSC, FC-TCR, TSC-TCR and TSR with the help of V-I characteristics and Load characteristics. 14 M
- 5 Briefly describe the way by which the transient stability is enhanced due to Static Var Compensator (SVC). 14 M
- 6 Give a detailed dynamic performance comparison of SVC and STATCOM. 14 M
- 7 With a neat block diagram, explain the different modes of operation of TCSC. 14 M
- 8 Write a short notes on the following:
- a) Thyristor Switched Series Capacitor (TSSC). 5 M
 - b) GTO Thyristor controlled Series Capacitor (GSC). 5 M
 - c) Switched Converter based Voltage and Phase angle regulators. 4 M