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Roll No

MEPS - 201

M.E./M.Tech., II Semester

Examination, December 2015

Reactive Power Control and FACTS*Time : Three Hours**Maximum Marks : 70*

Note : i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Explain the basic construction, working and characteristic of any one type of SVC.
b) Explain the effect of TCSC in SSR mitigation.
2. a) Explain the Heffron-Phillips model of a SMIB system installed with TCPS.
b) Explain the different applications of TCSC and SVC.
3. a) Discuss the analysis of damping torque contribution of FACTS based stabilizers installed in a single machine infinite bus power system.
b) Write short note on any one
 - i) Thyristor Controlled Phase Angle Regulator
 - ii) Interline Power Flow Controller
4. a) Explain giving suitable example that shunt FACTS devices improve transient stability.
b) Draw the phasor diagram of UPFC for simultaneous control of voltage impedance and angle.

5. a) Explain the power transmission control using controllable series compensation.
b) Distinguish between TCSC and TSSC.
6. a) What is Flexible AC Transmission System? What are important devices in FACTS?
b) Explain the Heffron-Phillips model of multi-machine power systems installed with SVC.
7. a) Explain the selection of installing locations and feedback signals of FACTS based stabilizers.
b) Explain the principle of operation of STATCOM and draw their characteristics.
8. Write short note on
 - a) Power transmission control using PST
 - b) Static synchronous series compensator.
