

Code: 17EEPC1T6A

I M.Tech-I Semester-Regular Examinations-February 2018

**FLEXIBLE AC TRANSMISSION SYSTEMS
(POWER SYSTEM & CONTROL)**

Duration: 3 hours

Max. Marks: 60

Answer the following questions.

- 1.a) Explain the basic types of FACTS Controllers. 7 M
- b) Why there is a need of interconnection in electrical power systems and what are the problems associated with this? 8 M

(OR)

- 2.a) What are the possible benefits from FACTS technology. 7 M
- b) Explain how power flows and types of powers in AC systems. 8 M

- 3.a) Give comparison of voltage source and current sourced converters. 7 M
- b) Explain the generalized techniques of harmonic elimination. 8 M

(OR)

4.a) Explain with the help of circuit diagram and waveforms single phase leg operation of a VSC. 7 M

b) Explain the working of three phase full wave bridge VSC with circuit and waveform. 8 M

5.a) Explain the method of voltage control by SVC. 7 M

b) Discuss the method of improving transient stability with SVC. 8 M

(OR)

6.a) How shunt compensation is classified? Explain in detail. 7 M

b) Draw control scheme of STATCOM and explain. 8 M

7.a) What is the basic operation principle of IPFC? 7 M

b) Explain thyristor controlled series capacitor. 8 M

(OR)

8.a) Explain switching converter based voltage phase angle regulator. 7 M

b) Explain UPFC back to back voltage source converter. 8 M