Paper Code:EE-701	**Roll No.**									

B.Tech.
SEVENTH SEMESTER EXAMINATION, 2016-17
FLEXIBLE AC TRANSMISSION SYSTEMS

[Time: 2 hrs.] [Max. Marks: 50]

Note: Attempt ALL questions. Assume suitable data, if required. All question carry equal marks.

1. Answer any *FOUR* parts of the following:- **(3.5x4=14)**

(a) Explain the power flow and dynamic stability considerations of a transmission interconnection.
(b) Explain in detail about the classification of different FACTS controllers.
(c) Explain what is meant by TCSC and UPFC.
(d) Explain the benefits from FACTS technology.
(e) State the salient features of UPFC.

2. Answer any *TWO* parts of the following:- **(6x2=12)**

(a) Explain the working and characteristic of thyristor controlled and thyristor switched reactor.
(b) Explain the effect of shunt compensation on transient stability and power oscillation damping.
(c) Explain the working and characteristics (V-I and loss versus var output) of fixed capacitor, Thyristor-Controlled Reactor Type Var Generator.

3. Answer any *TWO* parts of the following:- **(6x2=12)**

(a) Explain in detail about series capacitive compensation and voltage stability in transmission lines.
(b) Explain the working and impedance vs. delay angle characteristic of TCSC.
(c) Explain the current and voltage waveforms of the TCSC operated in the capacitive and inductive region.

4. Answer any *TWO* parts of the following:- **(6x2=12)**

(a) Compare the V-I, V-Q characteristics and transient stability of STATCOM and SVC.
(b) Explain the basic operating principle and basic control approach of STATCOM.
(c) Explain in detail about Static synchronous series compensator with transmitted power versus transmission angle characteristics.