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CODE NO:- Z-192

FACULTY OF ENGINEERING

B.E.(EEP/EE/EEE) Year Examination - June- 2015

Elective-I-Flexible AC Transmission Systems

(Revised)

[Time: Three Hours]

[Max. Marks:80]

“Please check whether you have got the right question paper.”

- i) Question no.1 & 6 are compulsory.
- ii) Attempt from each section any two questions from the remaining questions.
- iii) Assume suitable data wherever necessary.

SECTION-A

- Q.1 Solve any five questions 10
- i) What are the different types of storages?
 - ii) Define SVC & STATCOM.
 - iii) What are conventional methods used for compensation in power system?
 - iv) How amount of power flow can be controlled in a mesh connected ac power system?
 - v) What are the types of converters basically used in facts devices?
 - vi) Which types of harmonics are present in the O/P of 3 ϕ bridge converter?
 - vii) What are different types of losses in STATCOM?
 - viii) What are different types of hybrid VAR generators?
- Q.2 a) What are the different methods to control flow of power in a parallel path in electrical power system? 08
b) Explain the problems and need of line interconnection in power system. 07
- Q.3 a) Explain the working of single phase full wave bridge converter. 08
b) Explain the midpoint voltage regulation for line segmentation of shunt compensator. 07
- Q.4 a) Explain the functional control scheme for TSC-TCR. 08
b) Draw control scheme of STATCOM and explain? 07
- Q.5 a) What are the basic types of facts Controllers explain in short. 08
b) Explain the static var system. 07
- SECTION-B**
- Q.6 Solve any five questions. 10
- i) What are drawbacks of continuously controllable tap changers.
 - ii) State uses of series compensation?
 - iii) What is meant by load compensation?
 - iv) Define passive and active VAR control.
 - v) What are the factors affecting the application of series compensation?
 - vi) What is IPFC?
 - vii) List out the different constraints available on UPFC?
 - viii) What are the factors affecting the performance of SVC?
- Q.7 a) Explain how series compensation can be used for power oscillation damping. 07
b) Explain with neat sketch & waveforms the TCSC type series controller. 08
- Q.8 a) Give the functional control scheme for a SSSC. 08
b) Explain how power oscillation damping can be achieved by using voltage and phase angle regulation. 07

- Q.9 a) State the objectives of voltage and phase angle regulator. 07
b) Explain the basic control of TCBR. 08
- Q.10 a) Differentiate clearly between the UPFC & IPFC. 08
b) Explain the basic two converter scheme for IPFC 07