Total No. of Printed Pages:2

SUBJECT CODE NO:- E-398
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(EEE/EEP/EE) Examination Nov/Dec 2017
Elective-I: Flexible AC Transmission System
(REVISED)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
i. Q. No. 1 & Q. No. 6 are compulsory
ii. Attempt any two questions from each section from the remaining questions.
iii. Assume suitable data, whenever necessary

Section A

Q.1 Solve any five questions 10
i) What are the objectives of FACTS
ii) What limits the loading capability
iii) List the shunt connected controllers
iv) What is TCSC
v) Define SVC
vi) What is the necessity of compensation
vii) What is the cause for voltage instability
viii) What are the different types of storages

Q.2 a) Explain different methods to control power flow in meshed system 07

b) What are the objectives of static shunt compensator and explain transient stability improvement 08

Q.3 a) Explain in brief the basic types of FACTS controllers 07

b) Explain the construction and working of 1-Ø full wave bridge types FACTS converter 08

Q.4 a) Explain the working of TSC-TCR with neat diagram and wave forms 07

b) Explain indirect and direct output voltage control scheme of switching converter type VAR generator 08

Q.5 Write a short note on
a) Opportunities of FACTS 05
b) UPFC 05
c) Power oscillation damping in shunt compensation 05

Section B

Q.6 Solve any five question 10

i) State uses of series compensation
ii) What is IPFC
iii) What is bang-bang control
iv) State salient features of UPFC
v) What is use of braking resistor
vi) How TCBR is used to improve the transient stability
vii) What is meant by system compensation
viii) Define passive & active VAR control

Q.7 a) Explain the working of GTO thyristor controlled series capacitor with diagram and wave forms 07

b) Explain how series compensation can be used for power oscillation damping and sub synchronous oscillation damping 08

Q.8 a) Explain how power oscillation damping can be achieved by using voltage and phase angle regulation 07

b) Explain the basic control of TCBR 08

Q.9 a) What is NGH-SSR damping scheme explain with circuit diagram 07

b) Explain UPFC back to back voltage source converter 08

Q.10 Write a short note on

a) TSSC 05
b) Power flow control by phase angle regulators 05
c) Sub synchronous Resonance 05