Total No. of Printed Pages: 2

SUBJECT CODE NO:- H-475
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (EEP/EE/EEE)
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 wherever necessary.

Section A

Q.1 Solve any FIVE questions. 10

(i) What are the objectives of FACTS?
(ii) Define SVC & STATCOM.
(iii) What limit the loading capability?
(iv) What is TCSC &TCR?
(v) What are different types of losses in STATCOM?
(vi) What is the cause for voltage instability?
(vii) What types of harmonics present in the output of 3-Ø bridge converter?
(viii) What is the necessity of compensation?

Q.2 (a) Explain the need of transmission line interconnection. 07
(b) Explain the power flow in parallel and meshed system. 08

Q.3 (a) Explain the construction and working of 3-Ø full wave bridge type FACTS converter. 08
(b) Explain the working of FC-TCR with neat diagram & wave form. 07

Q.4 a) Explain the midpoint voltage regulation for line segmentation of shunt compensator. 08
b) Explain basic types of FACTS controllers. 07

Q.5 Write a short note on
a) Static VAR system 05
b) UPFC 05
c) Opportunities of FACTS. 05

Section B

Q.6 Solve any FIVE questions. 10

(i) What is UPFC &IPFC?
(ii) What is bang-bang control?
(iii) What is the use of braking resistor?
(iv) What do you mean by load compensation?
(v) What are the drawbacks of continuously controllable tap changers?
(vi) Define Active & passive VAR control.
(vii) List different constraints available on UPFC.
(viii) What are the advantages of TCSC?

Q.7
a) Explain the working of GCSC with diagram and wave form. 07
b) Explain the objective of static series compensators. 08

Q.8
a) Explain the hybrid phase angle regulator. 07
b) Explain how power oscillation damping can be achieved by using voltage and phase angle regulation. 08

Q.9
a) Differentiate clearly between UPFC & IPFC. 07
b) Explain the basic control of TCBR. 08

Q.10 Write short note on

a) Functional control scheme for SSSC 05
b) TSSC 05
c) Power flow control by phase angle regulators 05