PVP 14

Code: EE7T4

IV B.Tech - I Semester – Regular/Supplementary Examinations
October - 2019

FLEXIBLE AC TRANSMISSION SYSTEMS
(ELECTRICAL & ELECTRONICS ENGINEERING)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks

11 x 2 = 22 M

1.

a) Analyze the IEEE definition of FACTS controller.
b) List the different stability issues that limits the transmission capability.
c) Analyze the importance of power flow controllable parameters.
d) Illustrate the basic circuit of current source converter.
e) Draw single phase-leg circuit of converter.
f) Illustrate the circuit diagram of midpoint voltage regulation for line segmentation.
g) Summarize the expression for active power with shunt compensator.
h) Draw the block diagram for the transient stability enhancement with SVC & STATCOM.
i) Illustrate the block diagram for the power oscillation damping with SVC & STATCOM.

j) Summarize the expression for reactive power with series compensator.

k) Draw the basic circuit representation of IPFC.

PART – B

Answer any ***THREE*** questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Explain the basic types of FACTS controllers with neat diagrams. 8 M

b) Discuss the benefits of FACTS controllers. 8 M

3. a) Explain the single phase full wave bridge converter with neat diagrams. 8 M

b) Compare the current source converter with voltage source converter. 8 M

4. a) Explain the objectives of shunt compensation in transmission lines. 8 M

b) Demonstrate the operation of the Thyristor Switched Reactor with neat diagram. 8 M

5. a) Demonstrate the operating point control scheme for static VAR compensators. 8 M

b) Explain the summary of compensation control with necessary block diagrams. 8 M

6. a) Explain the operation of Thyristor Controlled Series Capacitor with neat diagram. 8 M

b) Discuss the control schemes for Thyristor Switched Series Capacitor. 8 M