PVP 14

Code: EE7T4

IV B.Tech - I Semester – Regular/Supplementary Examinations
October - 2018

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) Write down the advantages of FACTS.
b) Define reactive power control.
c) Write short notes on prevention of voltage instability.
d) Write down the equation for synchronizing torque coefficient.
e) Give short notes on blocked- thyristor mode.
f) What are the modeling techniques involved in TCSC?
g) What is meant by STATCOM?
h) What was the effect of damping by using UPFC in case study power transmission lines?
i) What is meant by steady-state interaction?
j) What are the methods of controllable var generation?
k) What is meant by series capacitive compensation?

PART – B

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

3 x 16 = 48 M

2. a) Explain the power flow in AC systems. 8 M

   b) Explain the importance of controllable parameters. 8 M

3. a) Explain the operation of three phase full wave bridge converter with circuit diagram and waveforms. 8 M

   b) What are the merits and demerits of voltage source converter with compared to current source converter? 8 M

4. a) With phasor diagrams and power angle characteristics, explain a two machine power system with ideal midpoint reactive compensation. 8 M

   b) With circuit diagrams and waveforms, explain the operation of TCR and TSC. Draw their V-I characteristics. 8 M

5. a) What is meant by regulation droop? What are its advantages? 8 M

   b) With a neat diagram explain the general control scheme for a static var generator. 8 M

6. a) Explain the implementation of UPFC and their role in power system operation. 8 M

b) What is inter line power flow controller? With the help of a neat schematic diagram, discuss it's operation. 8 M