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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

M.TECH I Year II Semester (R16) Regular Examinations May/June 2017
FLEXIBLE AC TRANSMISSION SYSTEMS (16CS5812)

(For Students admitted in 2016 only)

Time: 3 hours

Max. Marks:60

(Answer all Five Units 5 X 12 = 60Marks)

UNIT-I

- 1 a. Explain the concept of power flow in parallel paths with neat diagrams? 6 M
b. What limits the loading capability of transmission lines? Explain? 6 M

OR

- 2 a. Explain relative importance of controllable parameters. 6 M
b. Briefly discuss about the basic types of FACTS Controllers? 6 M

UNIT-II

- 3 Explain with relevant wave forms how three phase voltage source converter can be used to generate and absorb reactive power. Also derive necessary converter equations. 12 M

OR

- 4 What are the objectives of shunt compensation and discuss its role in improving transient stability, voltage stability and power oscillation damping. 12 M

UNIT-III

- 5 a. Explain the basic operation principles of switching converter type VAR generators? 6 M
b. Explain the VAR reserve control of static compensators? 6 M

OR

- 6 What is the regulation slope? What are the reasons for regulation slope? Explain with V-I characteristics of the SVC and STATCOM? 12 M

UNIT-IV

- 7 a. Explain, how series compensation is used for reducing the receiving-end voltage variations? 6 M
b. Describe the operating point control of static series compensation with neat block diagram. 6 M

OR

- 8 a. Explain in details about power oscillation damping in static series compensators? 6 M
b. What are the various objectives of series compensation? Explain them in detail. Describe the operating point control of static series compensation with neat block diagram. 6 M

UNIT-V

- 9 a. Explain the operation and control schemes of GTO Thyristor-controlled series capacitor. 12 M
b. Explain the working of GTO thyristor controlled series capacitor.

OR

- 10 a. Discuss the control schemes for GCSC, TSSC and TCSC. 6M
b. Explain the fundamental requirements of TCSC. 6M

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