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Question Paper Code : 87042

M.E. DEGREE EXAMINATION, MAY/JUNE 2016

Second Semester

Power Systems Engineering

PS 7202 – FEXIBLE AC TRANSMISSION SYSTEMS

(Common to M.E. Power Electronics and Drives)

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. How is the reactive power controlled, using FACTS devices ?
2. What is the advantage of FACTS controllers ?
3. Draw the VI characteristics of SVC.
4. Write down the application of SVC.
5. What are the needs for variable series compensation ?
6. What are the advantages of GCSC ?
7. What are the operating modes of UPFC ?
8. What is IPFC ?
9. What do you understand by coordination of FACTS controllers ?
10. What are the basics procedures of the controller design ?

PART – B (5 × 13 = 65 Marks)

11. (a) Describe the effect of series and shunt compensation at mid-point of the Line. (13)

OR

- (b) Application of FACTS Controllers in Distribution Systems. (13)

12. (a) Discuss details about different Configuration of SVC. (13)

OR

- (b) Discuss the modelling of SVC for stability analysis. (13)

13. (a) How to Demonstrate the analysis of TCSC with neat sketch. (13)

OR

- (b) Discuss the modelling of TCSC for load flow studies. (13)

14. (a) Apply the modelling of SSSC for power flow studies. (13)

OR

- (b) Define UPFC. Drive the modelling of UPFC for power flow studies. (13)

15. (a) Draw and explain about the interactions between SVCs in the ac power system with series compensation. (13)

OR

- (b) Explain in detail various control interactions between the different controllers used in the AC system. (13)

PART – C (1 × 15 = 15 Marks)

16. (a) Potential Energy Contributed by Considering the Two-Axis Model of the Synchronous Generator. (15)

OR

- (b) Drive the Reactive Power Compensation in Three Phase Circuits by using Clarke transformation. (15)