Reg. No. : | | | | | | | | | | |

Question Paper Code: 31379

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

Elective

Electrical and Electronics Engineering

01UEE915 - FLEXIBLE AC TRANSMISSION SYSTEM

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. What is the need for reactive power compensation?
2. State the salient features of Unified Power Flow Controller (UPFC).
3. What is effective short circuit ratio in SVC?
4. Mention some of the applications of SVC.
5. What is Bang -Bang control in TCSC?
6. State the need of variable series compensation.
7. What are the applications of SSSC?
8. List some of power system performance that can be improved by STATCOM.
9. State the advantages of genetic algorithm in controller co-ordination.
10. List the different types of controller interaction.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain the following:

(i) Load and system compensation. (8)

(ii) Basic concepts of static VAR compensator. (8)

Or

(b) Discuss the effect of shunt and series compensation on power transmission capacity. (16)

12. (a) List and explain the advantages of slope in the dynamic characteristics of SVC. (16)

Or

(b) Describe how which transient stability is enhanced due to SVC with the help of power angle curve and synchronizing power coefficient? (16)

13. (a) (i) List the advantages of TCSC. (6)

(ii) Explain the different modes of operation of TCSC. (10)

Or

(b) Enumerate the variable reactance modeling of TCSC to enhance the system stability. (16)

14. (a) Explain the operation and the V-I characteristics of STATCOM with diagram. (16)

Or

(b) Describe the procedure of modeling SSSC for load flow studies. (16)

15. (a) Explain the steps involved coordination of multiple controllers using linear control techniques. (16)

Or

(b) Describe in detail about SVC-SVC interactions. (16)

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