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Question Paper Code: 39315

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

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. Define voltage stability.
5. What is Bang -Bang control in TCSC?
6. List the application of TCSC.
7. What are the applications of SSSC?
8. What is the function of 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) Construct in detail about the classification of different FACTS controllers. (16)

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) Explain how SVC can be used to enhance the power transfer capacity of a transmission line. (16)

13. (a) Explain the principle of operation of TCSC. Also explain the various modes of operations. (16)

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)
