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

Question Paper Code : 80489

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Eighth Semester

Electrical and Electronics Engineering

EE 2036/EE 809/10133 EEE 45 – FLEXIBLE AC TRANSMISSION SYSTEMS

(Regulations 2008/2010)

(Common to PTEE 2036 for BE (Part –Time)–Seventh Semester-Regulations 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define the term IPFC.
2. What is meant by passive compensation?
3. Define 'Effective Short Circuit Ratio (ESCR)' of SVC.
4. What are the factors that limit the power-transfer capacity of a transmission line?
5. What is the method of including finite delay associated with firing control in TCSC modeling?
6. What is Bang-Bang control in TCSC?
7. Define Linear Loads.
8. Define UPFC.
9. Classify FACTS controller interactions.
10. How is co-ordination of FACTS controllers carried out?

PART B — (5 × 16 = 80 marks)

11. (a) Explain Uncompensated Transmission Line. (16)

Or

(b) Explain Shunt and Series Compensation Line. (16)

12. (a) Draw and discuss in detail about the advantages of slope in dynamic characteristics of SVC. (16)

Or

(b) Explain the role of SVC in the enhancement of stability under sudden changes in the operating conditions of power system. (16)

13. (a) What are the advantages of TCSC? Explain the different modes of operation of TCSC. (6 + 10)

Or

(b) With a neat block diagram, explain the variable reactance model of the TCSC and derive transient stability and long-term stability models. (16)

14. (a) Explain in detail about the implementation of UPFC. (16)

Or

(b) Explain the working of STATCOM. Compare its performance with SVC. (16)

15. (a) Investigate the SVC-SVC controller interaction in a large power system. (16)

Or

(b) Discuss the co-ordination of multiple FACTS controllers using linear control technique for power flow control applications. (16)

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