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Roll No

MEPE-302(B)

M.E./M.Tech., III Semester

Examination, December 2016

EHV AC and DC Transmission (Elective-II)

Time : Three Hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. a) Discuss limitations and advantages of a.c. and d.c. transmission. 7
b) Describe in details Trends in EHV a.c. and d.c. transmission. 7
2. a) Discuss problems associated with long EHV-AC lines why is line compensation required? Explain series compensation of line, its advantages and disadvantages. 7
b) What is Flexible A.C. transmission systems? What are important devices in FACTS? Explain the role of any one FACTS controller. 7
3. a) What is purpose of placing series FACTS controller in power system? List and discuss various types of series FACTS controllers. 7
b) What are the basic requirement for the firing pulse generation of HVDC valves? Describe any one method of firing angle control. 7

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4. What do you understand by the term 'travelling waves'? Explain the behaviour of electrical quantities at power frequencies on a distributed parameter line through travelling wave concept. 14
5. a) Discuss the problems associated with the harmonics introduced by the HVDC converters. Also explain the characteristics of harmonics. 7
b) Explain different types of A.C. filters giving their configuration and impedance characteristics. 7
6. a) Explain shunt compensation and list its merits and demerits. 7
b) What are the basic principles of two terminal D.C. link control in steady state? Derive the steady state current equation in D.C. link. 7
7. a) Draw the general equivalent circuit of transmission line and the simplified circuit for radio frequency line. What permits this simplification? 7
b) Explain the constant extinction angle control. 7
8. Write a short note on any two : 7 each
 - a) Adverse effects
 - b) Ignition angle control
 - c) Control of lighting and switching over voltages
