Total No. of Questions : 10] [Total No. of Printed Pages : 3

 Roll No. .....

EX–7201

B. E. (Seventh Semester)

EXAMINATION, Dec., 2011

(Electrical and Electronics Engg. Branch)

EHVAC AND DC TRANSMISSION

(Elective – II)

(EX – 7201)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt any *five* questions. Assume suitable data if necessary.

1. (a) Discuss the advantages of HVDC over HVAC. 10

   (b) Discuss various types of DC links and compare them. 10

Or

2. (a) Discuss the application of HVDC transmision system. 10

   (b) Explain various types of AC transmission system and compare them. 10

3. (a) Explain the principle of operation of STATCOM and draw their characteristics. 10

   (b) Explain the operation of SVC. How can it be used for improving the voltage profile of transmission lines ? 10

Or

4. (a) Describe the basic principle of Thyristor Controlled Phase Shifting Transformer (TCPST). Also give its application in power system. 10

   (b) Describe the working of any *one* FACT device to improve the power transfer capability of transmission line. 10

5. (a) Explain the various types of harmonics in HVDC converters. How can they be eliminated ? 10

   (b) Explain various types of multi-terminal HVDC systems. Discuss their advantages. 10

Or

6. (a) Explain various types of converter faults and protection against them. 10

   (b) Explain how the power reversal in HVDC lines can be achieved. 10

7. (a) Draw the complete converter control characteristics in $V_d - I_d$ plane. Show how these characteristics will change when the direction of power flow is reversed. 10

   (b) Compare the desired features of constant current control and constant extinction angle control of converters. 10

Or

8. Draw the diagram of 3-ϕ, 6-pulse bridge converter used in HVDC transmission. Draw the waveform for 2/3 valve conduction mode of this converter. Assume suitable values of firing angle and overlap angle. 20

9. (a) What are the main causes of voltage surges c overhead transmission lines ? Explain how th waveform of a surge is specified. 1

   (b) Derive the expression for incident and reflected wav for a long transmission line. 1

Or

10. Discuss the effect of junction and termination c propagation of travelling waves. 2

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