Total No. of Questions : 10] [Total No. of Printed Pages : 2

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EX–7201

B. E. (Seventh Semester) EXAMINATION, Dec., 2008

(Electrical & Electronics Engg. Branch)

EHV A. C. AND HVDC TRANSMISSION

(Elective – II)

(EX – 7201)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt all questions.

1. (a) Explain the limitations and advantages of A. C. and D. C. transmission. 10

   (b) Distinguish Bipolar and Homopolar HVDC links. 10

Or

2. (a) Explain the operation of Graetz circuit and derive for output voltage. 10

   (b) A bridge connected rectifier is fed from 220 kV/110 kV transformer with primary connected to 220 kV. Determine the d. c. output voltage when the commutation angle is 15° and the delay angle is 45°. 10

3. (a) Explain the problems associated with extra long transmission line in transferring the active power. 10

   (b) Distinguish between 'SVC' and 'STATCON'. 10

P. T. O.

Or

4. (a) Why compensation is required in extra long transmission line ? Explain why 100% series compensation is not desirable. 10

   (b) Explain the operation of Thyristor Controlled Reactor (TCR). 10

5. (a) What is travelling wave ? Explain the development of such a wave on overhead transmission line. 10

   (b) Explain the mechanism of lighting stroke. 10

Or

6. (a) What are the various causes of overvoltages in transmission line ? Transmission lines are generally terminated by cables at substation. Explain its reasons. 10

   (b) A surge of 100 kV travelling in a line of natural impedance 600 ohms arrives with two lines of impedances 800 ohms and 200 ohms respectively. Find the surge voltages and currents transmitted into each branch line. 10

7. Draw a schematic of bipolar HVDC system identifying its main components. Explain about each component. 20

Or

8. Write short notes on the following : 10 each

   (a) Multiterminal D.C. lines

   (b) Causes of Harmonics in HVDC converters

9. Explain HVDC converter firing control system. 20

Or

10. Explain parallel operation of D. C. link with an A. C. network. 20