

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

Roll No. ....

**EX-7201(N)**

**B. E. (Seventh Semester) EXAMINATION, Dec., 2010**

(New Scheme)

(Electrical & Electronics Engg. Branch)

**EHV AC AND HVDC TRANSMISSION**

(Elective - II)

[EX-7201(N)]

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*Time : Three Hours*

*Maximum Marks : 100*

*Minimum Pass Marks : 35*

**Note :** Attempt any *five* questions. All questions carry equal marks. *One* question from each Unit is compulsory.

**Unit - I**

1. (a) Explain the operation of Garetz circuit with the derivation for output voltage.  
(b) Explain the kinds of d. c. links with their characteristics.

*Or*

2. (a) Compare the power transfer and reactive power flow in EHV AC and HVDC transmission system.  
(b) A bridge connected rectifier is fed from a 220/110 kV transformer with primary connected to 220 kV. Determine the D. C. output voltage when the commutation angle is  $15^\circ$  and the delay angle is  $30^\circ$ .

**E. T. O.**

## Unit-II

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3. (a) What are FACTS devices ? How are they effective in handling the power in the time ?
- (b) Explain the working of thyristor-controlled series capacitor.

*Or*

4. (a) Compare the importance of different types of controllers.
- (b) Write a note on static VAR compensator.

## Unit-III

5. (a) Discuss the problems associated with the harmonics introduced by the HVDC converters. Explain the remedial measures of harmonics.
- (b) With a neat connection diagram explain the multi-terminal D. C. lines.

*Or*

6. (a) What is ground returns ? Explain the problems associated with the use of ground on return conductor.
- (b) Write a note on Commutations failure.

## Unit-IV

7. (a) Discuss desired features of control of HVDC system.
- (b) Explain constant extinction angle control technique used for EHVDC system.

*Or*

8. (a) What are the problems and advantages of parallel operation of HVAC and DC system ?
- (b) What are the techniques for controlling the output voltage of converter of HVDC transmission system ?

## Unit-V

9. (a) How lightning and switching surges are controlled in a power system ?
- (b) Discuss the causes of overvoltage in transmission system.

*Or*

10. (a) Discuss the development of travelling wave on a overhead line.
- (b) What are the factors affecting the function or termination of transmission lines ? Discuss the factors to be considered for them.

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