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Total number of printed pages – 2

B. Tech  
PEEE 5408

**Seventh Semester Back Examination – 2014**

**HIGH VOLTAGE DC TRANSMISSION**


**BRANCH (S) : EEE, ELECTRICAL**

**QUESTION CODE : L 196**

**Full Marks – 70**

**Time : 3 Hours**

*Answer Question No. 1 which is compulsory and any **five** from the rest.  
The figures in the right-hand margin indicate marks.*

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1. Answer the following questions : 2 × 10
    - (a) What are the limitations of EHVAC transmission ?
    - (b) What are the disadvantages of hvdc transmission system ?
    - (c) Explain the term delay angle and its significance in rectifier control.
    - (d) What are the use of reactive power source at converter station ?
    - (e) What is overlap angle of HVDC converter ?
    - (f) What are the additional constraints needed to include for ac-dc power flow ?
    - (g) What is the significance of angle of advance in the inverter control ?
    - (h) What is arc through fault at inverter station ?
    - (i) What is meant by multi terminal dc link ?
    - (j) What are the drawbacks in voltage limiting control in MTDC systems ?
  2. (a) Write down comparison of AC and DC transmission system. 5  
(b) Give neat sketches of different types of HVDC lines that are generally used and compare their merits and demerits. 5
  3. Explain with neat diagram and waveforms the working principle of 12-pulse converter. 10
  4. Justify that converters consume reactive power. 10

P.T.O.

5. (a) Explain the causes of harmonic generation in HVDC system and its effect on the system. 5
- (b) Explain the working of basic power controller using VDCOL (Voltage Dependent Current Order Limiter). 5
6. How do you design a High-Pass filter ? What precautions do you take ? 10
7. (a) How power sharing and power control is achieved in an MTDC system ? 5
- (b) What are the causes and effects of faults occurring in a converter station ? 5
8. Write short notes on any **two** : 5×2
- (a) 6-Pulse converter
- (b) Inverter extinction angle control
- (c) Non-characteristic harmonics
- (d) DC filters.
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