Total No. of Questions : 6]

SEAT No. :

P35

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APR-17/B.E./Insem. - 39
B.E. (Electrical Engineering)
HVDC AND FACTS
(2012 Pattern) (Semester - II) (Elective - III)

Time :1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right indicate full marks.***
3) ***Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.***
4) ***Assume suitable data, if necessary.***

Q1) a) Explain Graetz circuit. Draw relevant waveforms. **[6]**

b) Develop equivalent circuit of HVDC link. **[4]**

OR

Q2) a) Compare CIA control and CEA control used in HVDC Systems converter station. **[4]**

b) Explain effect of delay angle and angle of advance commutation on operation HVDC system. **[6]**

Q3) a) Give typical layout of HVDC system. **[5]**

b) Draw schematics of multi-terminal HVDC systems and state applicability of each. **[5]**

OR

Q4) a) State advantages of multi-terminal HVDC with classical HVDC system. **[4]**

b) What is single wire ground return system? Which configuration is commonly employed in such system? **[6]**

Q5) a) Discuss the operation of VSC based HVDC system. **[5]**

b) Explain structure of VSC based HVDC system. **[5]**

OR

Q6) a) Compare Classical HVDC system with VSC based HVDC system. **[7]**

b) Explain Power transfer Characteristics of VSC HVDC System. **[3]**

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