

(3 Hours)

[Total Marks: 80]

N.B.

- : (1) Question No.1 is compulsory
 (2) Attempt any three from the remaining
 (3) Figures to the right indicate full marks
 (4) Assume suitable data if necessary

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| 1 | Solve any four :- | 20 |
| (a) | What are the main components of HVDC transmission? | |
| (b) | What is current margin? | |
| (c) | State the consequences of harmonics in HVDCT. | |
| (d) | Explain the necessity of DC regulator in HVDC system. | |
| (e) | Draw the equivalent circuit of HVDCT line. | |
| 2 | (a) Explain commutation failure with diagram and waveform | 10 |
| | (b) Draw and explain the operation of a 6 pulse converter with overlap angle less than 60° | 10 |
| 3 | (a) Explain ground return in HVDC. | 10 |
| | (b) Explain different types of faults in HVDC link. | 10 |
| 4 | (a) Explain over voltage and over currents protection in HVDC | 10 |
| | (b) Explain basic control characteristics of HVDC | 10 |
| 5 | (a) Explain two methods of Individual Phase control | 10 |
| | (b) Compare AC transmission and HVDC transmission | 10 |
| 6 | (a) Explain the filters in HVDCT. | 10 |
| | (b) Give the equivalent circuit of a 12 pulse converter, What are the different condition modes? | 10 |
