

(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) List out the advantages of HVDCT | |
| | (b) What is meant by ground return in HVDCT? | |
| | (c) Write a short note on Arc back . | |
| | (d) Explain effects of harmonics in HVDC system. | |
| | (e) Brief converter transformer. | |
| 2 | (a) Give the equivalent circuit of a 12 pulse converter, What are the different condition modes? | 10 |
| | (b) Draw and explain the operation of a 6 pulse converter with overlap angle less than 60° | 10 |
| 3 | (a) Explain single commutation failure with diagram and waveform | 10 |
| | (b) Explain power reversal in HVDCT. | 10 |
| 4 | (a) Explain over voltage and over currents protection in HVDCT | 10 |
| | (b) Explain basic control characteristics of HVDCT | 10 |
| 5 | (a) Explain two methods of Equidistant Pulse Control | 10 |
| | (b) Explain different types of faults in HVDC link. | 10 |
| 6 | (a) Explain the DC filters in HVDCT. | 10 |
| | (b) Compare AC transmission and HVDC transmission | 10 |