

(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

- 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 HVDC.
 - (d) Explain the necessity of DC regulator in HVDC system.
 - (e) Draw the equivalent circuit of HVDC 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 HVDC. 10
- (b) Give the equivalent circuit of a 12 pulse converter, What are the different condition modes? 10
