

B.E. (Elect) VII (R)

7/06/07

Clerk I - HVDC Transmission 11102

Con. 3137-07.

[REVISED COURSE]

ND-1462

(3 Hours)

[Total Marks : 100]

MASOEN
UB**N.B.** (1) Question No. 1 is **compulsory**.(2) Answer any **four** out of remaining **six** questions.(3) **Figures** to the right indicate **full marks**.

1. (a) Explain the firing schemes of HVDC valves. 10
(b) Explain the control of HVDC system and their performance during normal and abnormal system condition. 10
2. (a) 'Converter consumes reactive power' — justify the statement. 10
(b) Explain Single commutation failure and Double commutation failure. 10
3. (a) Explain with neat diagram the components of HVDC Transmission system. 10
(b) Explain the influence of AC system strength on AC/DC system interaction. 10
4. (a) Explain with neat diagrams and waveforms the principle of 12 pulse converter. 10
(b) Explain in brief the starting and stopping of a DC link. 10
5. (a) What are the classification of HVDC links ? Describe each one with neat diagrams. 10
(b) Describe with waveform the transfer of current to the bypass valve :- 10
(i) Rectifier operation
(ii) Inverter operation.
6. (a) What are the causes and effects of faults occurring in a converter station ? 10
(b) Explain the Hierarchical control structure for a d.c. link. 10
7. (a) Explain the causes of Harmonic generation in HVDC and its effect on the system. 10
Describe different filters used to eliminate these harmonics.
(b) Write short notes on :- 10
(i) Mode stabilization
(ii) Recent trends in HVDC.