

R09

Code No:C5304

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH I SEMESTER EXAMINATIONS, APRIL/MAY-2012
HIGH VOLTAGE DC TRANSMISSION
(POWER SYSTEM CONTROL & AUTOMATION)**

Time: 3hours

Max.Marks:60

**Answer any five questions
All questions carry equal marks**

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- 1.a) Give the comparison between AC and DC Transmission and explain the factors in detail?.
- b) What are the applications of DC Transmission and also mention the modern trends in HVDC technology?
- 2.a) Explain the special features of converter transformers?.
- b) Explain the rectifier and inverter operation of a power converter and also write the equivalent circuit of converter?
- 3.a) What are the causes of harmonics in HVDC system and how to eliminate the harmonics in it?.
- b) What are the different types of filters and explain about design constraints?
4. What is the meaning of ignition angle control and explain individual phase control and equidistant control method?
- 5.a) What are the major types of AC-DC systems interaction and also explain about the harmonic interactions in details?
- b) Explain the voltage stability in AC/DC system in detail?
6. a) What are the different methods of controlling MTDC system and explain
 - i) Current margin method
 - ii) Voltage limiting control method
 - iii) Two ACR method
7. Explain transient over voltage due to DC and AC side line faults with neat sketches?
- 8.a) What are the different types of converter faults and explain at least three of the faults in details?.
- b) Explain the principle of surge arrestors and draw a typical arrangement of surge arrestors for a converter pole?
