

IV B.Tech II Semester Supplementary Examinations, April/May 2005
HVDC TRANSMISSION
(Electrical & Electronic Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE Questions
All Questions carry equal marks

1. What is the need for interconnection of systems? Explain the merits of connecting HVAC systems by HVDC tie-lines?
2. Analyses a 3 - ϕ bridge rectifier with grid control and overlap angle less than 60° and explain how reactive power can be controlled in a converter. Explain by giving neat sketches and wave forms.
3. Discuss in detail, the control characteristics of a converter.
4. The Rihand - Delhi HVDC system is being operated in monopolar mode with actual DC voltage at sending end terminal is 500KV and DC current 1000A. The No load ideal DC voltage is 550KV. Calculate the reactive power compensation required for the terminal station. What is the power factor on AC side?
5. (a) Classify the solution methodology for AC-DC load flow and explain.
(b) Explain the per unit system for DC quantities.
6. (a) What are the basic principles of over current protection.
(b) Discuss the various faults exist in converter station? Explain.
7. Why are harmonics generated in HVDC converter and what are the problems associated with the harmonics. Suggest some remedial measures.
8. Mention the configurations and impedance characteristics of various types of filters. Give design aspects of single tuned filter.
