

Code: R7410205

R7

IV B.Tech I Semester (R07) Supplementary Examinations, May 2012

HVDC TRANSMISSION

(Electrical & Electronics Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. (a) Explain the modern trends in DC transmission.
(b) Explain the types of DC links in detail.
2. (a) Draw the schematic circuit diagram of a 6-pulse Gractz circuit and explain its principle of operation.
(b) Derive the expression for the load voltage and load current for above circuit when it is feeding inductive load.
3. (a) Draw and discuss the converter controlled characteristics of HVDC systems.
(b) Explain the firing angle control schemes with their relative merits and demerits.
4. (a) Explain the role of synchronous condensers in reactive power control.
(b) Briefly discuss the sources of reactive power in HVDC systems.
5. (a) Briefly discuss about simultaneous method of power flow analysis in AC/DC systems.
(b) Briefly discuss the modeling of DC links in AC/DC systems.
6. (a) Discuss the protection against over currents in converters.
(b) Explain the role of surge arresters in converter protection.
7. (a) Distinguish between characteristic harmonics and non-characteristic harmonics.
(b) Discuss in brief the effect of pulse number on harmonics.
8. Discuss the design of single tuned filters in detail.
