

Roll No.

23258

**M.Tech 1st Semester
(Electrical Engg.) Specialization :
Electrical Power Systems
Examination-May, 2014**

HVDC TRANSMISSION

Paper MTEPS-102

Time : 3 hours

Max. Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : Attempt any **five** questions.

1. (a) What are the factors that affect the choice of converter for any pulse number? Explain the operation of a 6-pulse converter operation in detail. 10

- (b) How does a rectifier differ in operation when compared with the operation of an inverter ? 10
2. How do you define the non-characteristic harmonics ? Explain the effect of firing angle errors. 20
3. What is the equidistant pulse control (EPC) ? Explain the variations under this scheme, using suitable diagrams if required. 20
4. (a) Write a technical note on AC and DC systems interface. 10
- (b) What is meant by power modulation ? Differentiate between synchronous link and Asynchronous link. 10
5. (a) What are various methods of control in MTDC systems ? Explain the current margin method of control of MTDC systems. 10

- (b) Compare series and parallel MTDC systems. 10
6. (a) What are the characteristics of DC breakers ? Explain them. 10
- (b) How can a line fault be detected ? Explain it. 10
7. (a) How is the overvoltage protection carried out in AC systems ? 10
- (b) Discuss the reason of various faults occurring in converters ? 10
8. Write detailed technical notes on the following :
- (a) Static Converter configuration 10
- (b) Ignition angle control 10