

Code: 13A02803

B.Tech IV Year II Semester (R13) Advanced Supplementary Examinations July 2018

HVDC TRANSMISSION

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

1 Answer the following: (10 X 02 = 20 Marks)

- (a) How the rating of a converter station is described?
- (b) Define reliability with reference to HVDC.
- (c) Define HVDC link
- (d) What is meant by Graetz circuit?
- (e) Draw the converter control characteristics.
- (f) List the two basic firing angle control schemes.
- (g) What are the problems associated with harmonics?
- (h) What are the advantages of double tuned filters?
- (i) List the faults due to malfunction of valves and controllers in a converter station.
- (j) Classify the type of over voltages in ac system of converter station.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 What is a transmission link? Explain different types of DC links with their relative merits and demerits.

OR

3 Describe and explain static converter configurations.

UNIT – II

4 Obtain the equivalent circuit of converter rectifier.

OR

5 Explain the functions of converter station terminal equipment.

UNIT – III

6 Explain the principles of DC link control.

OR

7 Explain the operation of IPC scheme and list the drawbacks of this scheme.

UNIT – IV

8 Explain the objectives in designing the size and branches of harmonic filters and dc harmonic filters in a HVDC substation.

OR

9 What are harmonics? Explain how harmonics are generated in DC side of a converter station.

UNIT – V

10 Classify and briefly explain converter faults.

OR

11 With a neat schematic, explain the over current protection scheme of a converter pole.
