# *B.Tech Degree VII Semester Special Supplementary Examination June 2012*

## EE 705 (B) HIGH VOLTAGE DC TRANSMISSION

(*2006 Scheme*)

Time : 3 Hours Maximum Marks : 100

### PART A

(Answer *ALL* questions)

(8 × 5 = 40)

I. (a) What are the types of dc links?

(b) Explain valve design consideration.

(c) Derive the expression for average maximum dc voltage and valve utilization factor.

(d) Write short notes on pulse number and transformer rating.

(e) Write short notes on misfire and commutation failure.

(f) Explain the hierarchial control structure for a dc link.

(g) Explain types of AC filters.

(h) Write short notes on smoothing reactors.

### PART B

(4 × 15 = 60)

II. (a) Explain a typical HVDC converter station. (10)

(b) Differentiate between AC and DC transmission. (5)

**OR**

III. (a) Explain choice of voltage level for dc transmission. (10)

(b) Write short notes on valve firing scheme. (5)

IV. Explain Graetz circuit without overlap in detail. (15)

**OR**

V. (a) Explain 2 and 3 valve conduction. (10)

(b) Write short notes on the choice of converter configuration. (5)

VI. Discuss the principles of DC link control and converter control characteristics. (15)

**OR**

VII. Explain firing angle control. (15)

VIII. Describe the effects of Corona and DC line insulators. (15)

**OR**

IX. Explain dc breakers in detail. (15)

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