Time:3Hrs **80 Marks 3hrs**

Note :

- Question No.1 is compulsory.
- Solve ANY THREE questions from the remaining five questions.
- Figure to the right indicates full marks.
- Assume suitable data wherever required, but justify the same.

Q. 1		Solve ANY FOUR questions from following. (Each question carries 5 marks)	20
	a)	Enlist the advantages and disadvantages of back to back HVDC terminal connection.	
	b)	Compare HVDC transmission with HVAC transmission on the basis of breakeven distance.	
	c)	Explain Arc Through fault.	
	d)	Importance of smoothing reactor and filters.	
	e)	What is mean by mode stabilization?	
	f)	Draw Graetz bridge using SCR and explain it.	
Q. 2	a)	Draw the diagrams for different types of HVDC link and compare advantages and disadvantages.	10
	c)	Derive the equivalent circuit of a three phase fully controlled rectifier with grid control and overlap angle greater than 60 degree. Draw the equivalent circuit diagram and output voltage waveforms.	10
Q3	a)	Illustrate the Individual Pulse control scheme and equidistant Pulse control scheme used in HVDC system for generating triggering pulse.	10
	b)	Draw and explain the control characteristics of an HVDC system. How to obtain power reversal. Impotance of current margin.	10
Q4	a)	Illustrate in detail the over current and over voltage protection methods in HVDC system.	10
	b)	Explain in details the commutation failure in inverter side of HVDC system.	10
Q5	a)	Draw and Explain the working of 12 pulse converter circuit. Draw the voltage and current waveforms.	10
	b)	Explain the Starting and Stopping of the converter bridge.	10
Q6	a)	Draw and Explain different types of Filters used in HVDC Station.	10
	b)	Explain different types of application of HVDC Transmission.	10

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