

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**QUESTION BANK**

**COURSE TITLE : HVDC TRANSMISSION**

**COURSE CODE : 23EE705**

**REGULATION : R23**

<b>UNIT-I: Basic Concepts and Analysis of HVDC Converters</b>				
<b><u>S.No</u></b>	<b>Short Answer Questions</b>	<b>BT</b>	<b>CO</b>	<b>PO</b>
1	What is the necessity of HVDC transmission systems?	BT1	CO1	PO1
2	List the major components of terminal equipment used in an HVDC system.	BT1	CO1	PO1
3	What are the different types of HVDC links?	BT1	CO1	PO1
4	State any two advantages of HVDC transmission over HVAC transmission.	BT2	CO1	PO1
5	What is the role of a converter station in an HVDC system?	BT2	CO1	PO1
6	Define monopolar and bipolar HVDC links.	BT1	CO1	PO1
7	What are the major applications of HVDC transmission?	BT2	CO1	PO1
8	What is a Graetz converter circuit?	BT1	CO1	PO1
9	Distinguish between 6-pulse and 12-pulse converters.	BT3	CO1	PO2
10	Mention any two modern trends in DC transmission systems.	BT2	CO1	PO1
	<b>Long Answer Questions</b>			
11	Explain the necessity of HVDC transmission systems and discuss their advantages over HVAC transmission systems.	BT2	CO1	PO1

12	Describe the economics of HVDC transmission systems. Explain the factors affecting the break-even distance between AC and DC transmission.	BT4	CO1	PO2
13	Explain the various types of HVDC links with neat diagrams and discuss their applications.	BT2	CO1	PO1
14	Describe the terminal equipment required in an HVDC transmission system and explain the function of each component.	BT2	CO1	PO1
15	Compare AC and DC transmission systems with respect to technical, economic, and operational aspects.	BT4	CO1	PO3
16	Discuss the applications of HVDC transmission systems and explain the modern trends in DC transmission technology.	BT2	CO1	PO1
17	Explain the choice of converter configuration in HVDC systems. Discuss the factors influencing the selection of converter circuits.	BT4	CO1	PO3
18	With a neat circuit diagram, explain the operation and analysis of a Graetz converter circuit used in HVDC transmission.	BT4	CO1	PO4
19	Explain the operating characteristics of 6-pulse and 12-pulse converters. Compare their performance in terms of harmonics, efficiency, and power quality.	BT4	CO1	PO2
20	Analyze the performance of two three-phase converters operating in Y/Y configuration. Discuss their operation, advantages, and limitations in HVDC systems.	BT4	CO1	PO4