Q.P.CODE:16EE231 **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

BTECH IV Year I Semester Supplementary Examinations November-2020

HVDC TRANSMISSION SYSTEMS

(Electrical & Electronics Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	**a**	What the differences between AC and DC transmission system?	**8M**
	b	Explain the types of DC Links.	**4M**
		OR	
2	**a**	Explain the principles of static conversion and briefly explain static converter configuration.	**6M**
	b	Explain the basic conversion principles with neat circuit diagrams.	**6M**
		UNIT-II	
3	**a**	Explain the operation of a 12 pulse converter with a neat circuit diagram.	**6M**
	b	Explain the Basic conversion principles of a HVDC Transmission system	**6M**
		OR	
4	**a**	What is meant by firing angle delay and commutation delay? Give the wave forms of voltage and current in a 6 pulse Graetz circuit with $\alpha=30^0$ and $\alpha=15^0$	**6M**
	b	Write the special features of converter transformers.	**6M**
		UNIT-III	
5	**a**	Describe the two basic firing angle control schemes adopted for HVDC system with neat sketches. Also discuss the merits and demerits of each scheme.	**6M**
	b	Explain the harmonics elimination in a HVDC Transmission system	**6M**
		OR	
6	**a**	Explain firing angle control and briefly explain basic firing angle schemes	**6M**
	b	Explain the constant extinction angle control and constant ignition angle control	**6M**
		UNIT-IV	
7	**a**	Explain all the types of AC Filters with their design.	**8M**
	b	Explain the elimination of Harmonics in detail.	**4M**
		OR	
8	**a**	Explain all the types of DC Filters with their design.	**6M**
	b	Give the design aspects of double tuned filter.	**6M**
		UNIT-V	
9	**a**	Briefly explain over voltage protection scheme in the HVDC system.	**6M**
	b	Write a short note on the following (i) Commutation failure (ii) Surge arresters.	**6M**
		OR	
10	**a**	What are the different causes of converter faults?	**6M**
	b	Explain how the dc line is protected? Explain over voltage protection methods.	**6M**

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