



R18 Regulation

Subject code:2E8BA

# TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VIII Semester Supplementary Examinations, November 2025

## HVDC TRANSMISSION

(EEE)

Maximum Marks: 70

Date: 25.11.2025

Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
  2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
  3. Part B consists of 5 Units. Answer any one full question from each unit.
  4. Each question carries 10 marks and may have a, b, c, d as sub questions.

### Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	What is mono polar link?	2M	1	L1
2	What is back to back system in hvdc?	2M	1	L1
3	What is basic principle of dc link control?	2M	2	L1
4	What are the factors to be considered for planning of HvdC transmission?	2M	2	L1
5	What is DC breaker? How it will be useful?	2M	3	L1
6	What are the factors to be considered for planning of HvdC transmission?	2M	3	L1
7	Explain about filters.	2M	4	L1
8	What is voltage limiting control?	2M	4	L1
9	State the disadvantage in dc transmission?	2M	5	L1
10	Name the new modern trends in DC transmission.	2M	5	L1

### Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	a) What are the technical performances in HVDC transmission? b) What is the need for interconnection of the systems? Explain the merits of HVAC systems by HVDC Tie lines.	5M 5M	1	L2
OR				
12	a) For a fixed power of transmission explain how the economic choice of voltage level is selected in D.C. transmission system. b) Explain the technological development in control and protection, for better performance and reliability of D.C. transmission system.	5M 5M	1	L2
13	With block diagram, discuss the principle of operation of a basic power controller.	10M	2	L2
OR				
14	a) What are the different applications of D.C. transmission system? Explain them in detail? b) With neat sketches explain the different kinds of D.C. links available.	5M 5M	2	L2
15	a) Compare simultaneous and sequential methods of power flow analysis. b) Draw the flow chart for AC/DC load flow.	5M 5M	3	L2

	OR			
16	a) Describe constant ignition angle control. b) Describe individual phase control.	5M 5M	3	L2
17	a) Explain the principle of current interruption in dc circuit breaker. what are the various types of circuit breaker? b) Discuss the importance of corona loss in dc transmission.	5M 5M	4	L2
	OR			
18	a) What are the basic principles of over current protection? b) Discuss the various faults exist in converter protection.	5M 5M	4	L2
19	Write a short note on a) Modelling of H.V.D.C. links b) P.U. system for d.c. quantities.	5M 5M	5	L2
	OR			
20	Give a detailed account of design aspects of the following filters: a) Single tuned filter b) Double tuned filter.	5M 5M	5	L2