

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026***Fifth Semester**Electrical and Electronics Engineering***EE3004 - HVDC and FACTS***Regulations - 2021**Duration : 3 Hrs**Maximum : 100 Marks***PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	List the types of compensation in power transmission.	L1	1	2
2.	Differentiate between AC and DC transmission.	L2	1	2
3.	State the influence of SVC on system voltage.	L2	2	2
4.	Mention the advantages of TCSC.	L2	2	2
5.	Define transient stability.	L1	3	2
6.	List applications of SSSC.	L1	3	2
7.	Define commutation overlap.	L1	4	2
8.	Define CC and CIA modes of operation.	L1	4	2
9.	State the advantages of dq control.	L2	5	2
10.	Mention the applications of VSC-based HVDC.	L1	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
11.	a Discuss shunt and series compensation techniques with suitable examples.	L3	1	16
	Or			
	b Illustrate the role of reactive power control in transmission systems.	L3	1	16
12.	a Analyze the dynamic performance of SVC on power system.	L3	2	16
	Or			
	b Describe the construction, principle, and operation of TCSC.	L3	2	16
13.	a Discuss the principle of operation of STATCOM in improving transient stability.	L3	3	16
	Or			
	b Discuss the operation of SSSC, its characteristics and role in enhancing power transfer capability.	L3	3	16

14.	a	Analyze the effect of commutation overlap on HVDC converter performance.	L3	4	16
		Or			
	b	Explain the operation of Gratz bridge converter with neat diagrams.	L3	4	16
15.	a	Explain the basic operation of a two-level IGBT inverter with neat sketches.	L3	5	16
		Or			
	b	Discuss the control of power flow in VSC-based HVDC transmission.	L3	5	16