

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025

Fourth Semester

Electrical and Electronics Engineering

EE3401 – Transmission and Distribution

Regulations - 2021

Duration : 3 Hrs

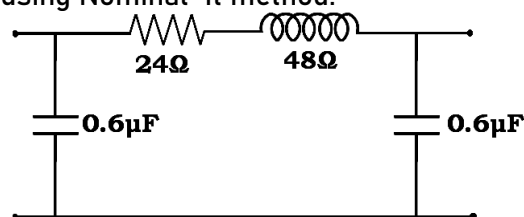
Maximum: 100 Marks

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

Q.No	Questions	BLT	CO	Marks
1.	Draw the structure of power system.	L1	1	2
2.	Explain the reason for skin effect occurs in AC system.	L2	1	2
3.	Draw the equivalent circuit of a medium transmission line T model.	L1	2	2
4.	Define Ferranti effect.	L1	2	2
5.	Mention the factors that affect sag in the transmission line.	L1	3	2
6.	List the types of insulator.	L1	3	2
7.	Write the expression of the capacitance of a single core cable.	L1	4	2
8.	What is meant by grading of cables?	L1	4	2
9.	State kelvin's law.	L1	5	2
10.	Compare EHVAC and HVDC.	L2	5	2

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

Q.No	Questions	BLT	CO	Marks
11.	a Obtain the expression for the inductance of three phase line when the conductors are symmetrical spacing. Or b Derive the expression for the Capacitance per phase of Single circuit 3 phase line with Symmetrical spacing. Why self GMD is not considered in the expression of capacitance? Hence, derive the expressions for capacitance of a completely transposed line.	L2	1	16
12.	a A 3phase 132kV OHT line is 120km long and delivers 40MW at 0.8 p.f lagging. The transmission network is modelled as shown in figure. Determine the Sending end current, Sending end voltage, % Regulation and % Efficiency using Nominal- π method.	L3	2	16



Or

	b	Identify the ABCD constants for a transmission line and organize their significance in analyzing the performance of long transmission lines.	L3	2	16
13.	a	Derive expressions for sag and tension in a power conductor strung between two supports at equal and unequal levels.	L2	3	16
		Or			
	b i	Explain the different methods of grounding with neat diagram.	L2	3	8
	ii	Elaborate the various methods to improve the string efficiency.	L2	3	8
14.	a	Explain the different types of cables with neat sketch. Also list the properties of good cables.	L2	4	16
		Or			
	b	Explain the concept of capacitance grading in cables. Derive the formula for capacitance grading and discuss its advantages and limitations with practical applications.	L2	4	16
15.	a	Explain the principle of Ring main and Radial distribution system. Also justify why Ring main distribution system is preferred over Radial systems.	L2	5	16
		Or			
	b	Discuss the different types of substation with neat diagrams.	L2	5	16