

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E / B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

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.	What is bundled conductor? Write its advantage over solid conductors.	RE	1	2
2.	Calculate the loop inductance per kilometer comprising two parallel conductors 1 m apart and 1cm diameter.	AN	1	2
3.	Draw the phasor diagram of a nominal T- Transmission network with proper notations.	AP	2	2
4.	Define Ferranti effect.	UN	2	2
5.	What is sag template?	RE	3	2
6.	Define string efficiency.	UN	3	2
7.	What is the necessity of grading of an underground cable?	RE	4	2
8.	What is meant by dielectric stress in a cable?	RE	4	2
9.	List the various substation equipments.	RE	5	2
10.	What are the advantages of FACTS controllers?	AP	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

Q.No	Questions	BLT	CO	Marks
11.	a Develop an expression for loop inductance of a single phase line.	AP	1	13
	Or			
	b Identify the effect of earth on the capacitance of transmission lines.	AP	1	13
12.	a Relate the performance of short, medium and long transmission lines.	AP	2	13
	Or			
	b Explain the performance of nominal T, and end condenser method of medium transmission line.	AP	2	13
13.	a Draw with neat sketch, explain the pin and suspension type insulators. Compare their merits and demerits.	AP	3	13
	Or			
	b In a 33 kV overhead line, there are three units in a string of insulators. If the capacitance between each insulator pin and earth is 11% of self-capacitance of each insulator, find (i) the distribution of voltage over 3 insulators and (ii) string efficiency.	AP	3	13

14.	a	Compare the different types of cables used in underground systems.	UN	4	13
		Or			
	b	What is grading of cable. Compare the two methods of grading of cable in detail.	UN	4	13
15.	a	What is Kelvin's law and how it is helpful to choose economic size of line conductor? Discuss in details.	UN	5	13
		Or			
	b	Discuss the advantages of HVDC transmission over EHVAC transmission in detail.	UN	5	13

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	A two wire DC distributor AB, 600 m long is loaded as under given specification: Distance from A (meter) : 150 300 350 450 Loads in Ampere : 100 200 250 300 The feeding point A is maintained at 440 V and B at 430 V and if each conductor has a resistance of 0.1Ω per 100 m, calculate (i) current supplied from A to B (ii) power dissipated in the distributor.	EV	5	15
		Or			
	b	A 220 KV, 50 HZ, 200 Km long three phase line has its conductors on the corner of a triangle with sides 6m, 6m and 12m. The conductor radius is 1.81 cm. Find the inductance & capacitance per phase per Km.	EV	1	15