

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 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)***

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Draw the structure of electric power system.	L2	1	2
2.	Define proximity effect on conductors.	L1	1	2
3.	Mention the significance of surge impedance loading.	L2	2	2
4.	What is a power circle diagram?	L1	2	2
5.	What is the reason for the sag in the transmission line?	L2	3	2
6.	List the advantages of string insulators.	L1	3	2
7.	What are the methods of grading of cables?	L1	4	2
8.	What is the difference between capacitance grading and intersheath grading for an underground cable?	L2	4	2
9.	What is a feeder?	L1	5	2
10.	Define FACTS.	L2	5	2

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

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Derive the expressions for inductance of a three-phase transmission line with unsymmetrical spacing.	L3	1	16
	Or			
	b A 220kV, 50 Hz, 200 Km long transposed three phase line has its conductors on the corners of the triangle with sides 6m, 6m and 10m. The conductor radius is 1.81 cm. Find the capacitance per phase per km of the line.	L3	1	16
12.	a Explain the classification of transmission lines with their characteristics.	L2	2	16
	Or			
	b Explain the various factors affecting the corona loss and state its advantages and disadvantages.	L2	2	16
13.	a How to calculate sag in the overhead transmission lines?	L2	3	16
	Or			
	b What are the properties of insulators? Also, briefly explain about pin	L2	3	16

and suspension type insulators. Draw the schematic diagram.

- | | | | | | |
|-----|---|---|----|---|----|
| 14. | a | Explain with neat sketch about construction of cables. | L2 | 4 | 16 |
| | | Or | | | |
| | b | Calculate the capacitance and charging current of a single core cable used on a 3-phase, 66 kV system. The cable is 1 km long having a core diameter of 10 cm and an impregnated paper insulation of thickness 7 cm. The relative permittivity of the insulation may be taken as 4 and the supply at 50 Hz. | L4 | 4 | 16 |
| 15. | a | Explain the following system of distribution i) Radial system ii) Ring main system iii) Interconnected system iv) Design consideration in distribution system. | L2 | 5 | 16 |
| | | Or | | | |
| | b | Explain the classification of substation based on service requirement and constructional feature and write short notes on substation equipment. | L3 | 5 | 16 |