ANURAG Engineering College
(An Autonomous Institution)
III B.Tech I Semester Supplementary Examinations, Dec–2023/Jan-2024
POWER SYSTEMS - II
(ELECTRICAL & ELECTRONICS ENGINERRING)

Time: 3 Hours   **Max.Marks:75**

Section – A (Short Answer type questions)   (25 Marks)
Answer All Questions

		Course Outcome	B.T Level	Marks
1.	What is the need for transposition of transmission lines?	CO1	L1	2M
2.	Briefly explain about the effect of ground on capacitance.	CO1	L1	3M
3.	Define surge impedance.	CO2	L1	2M
4.	Classify the transmission lines based on the voltage.	CO2	L1	3M
5.	Define transient of power system.	CO3	L1	2M
6.	Define wavelength.	CO3	L1	3M
7.	Define critical voltage.	CO4	L1	2M
8.	Define corona and factors affecting corona.	CO4	L1	3M
9.	What is the need for Stringing Chart?	CO5	L1	2M
10.	What are the advantages of cables compared to overhead transmission lines?	CO5	L1	3M

Section B (Essay Questions)
Answer all questions, each question carries equal marks.   (5 x 10M = 50M)

11. A)	A single phase, two wire transmission line 20km long, is made up of round conductors each 0.9cm in diameter, separated from each other by 45cm. Calculate the equivalent diameter of a fictitious hollow, thin-walled conductor having the same inductance as the original line. What is the value of this inductance?	CO1	L3	10M
	OR			
B)	Derive the expression for capacitance of three phase transmission line with asymmetrical spacing.	CO1	L3	10M
12. A)	Derive the transmission parameters or A, B, C, D parameters of a long transmission line by use of complex exponentials.	CO2	L3	10M
	OR			
B)	Explain series and shunt compensation of lines and discuss their effect on the surge impedance loading of the lines. If shunt compensation is 100%, what happens to SIL and voltage profile?	CO2	L3	10M
13. A)	Explain about Bewley's Lattice Diagram.	CO3	L2	10M
	OR			
B)	A 500 KV surge travels on an overhead line of surge impedance 400 ohms towards its junction with a cable that has a surge impedance of 40 ohms. Find: i) transmitted voltage, ii) transmitted current, iii) reflected voltage, and iv) reflected current.	CO3	L3	10M
14. A)	Explain about the various methods to improve the string efficiency.	CO4	L2	10M
	OR			
B)	With neat sketch explain different type of insulators.	CO4	L3	10M

15. A) Explain about different methods of grading of cables. CO5   L3   10M

OR

  B) Derive the expression for the insulation resistance of a single core cable. CO5   L3   10M