O.P.Code: 20EE0223	R20	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. III Year II Semester Regular &Supplementary Examinations June-2025
POWER SYSTEM ANALYSIS
(Electrical & Electronics Engineering)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

		UNIT-I			
1	a	What are the different power system elements in the power system network?	CO1	L2	6M
	b	Define the terms i) Graph ii) Sub-graph iii) Tree iv) Co-tree v)Planar Graph vi) Branch and Links.	CO1	L3	6M
		OR			
2		Derive the expression for the Direct inspection method for a 3 Bus power system network.	CO1	L3	12M
		UNIT-II			
3	a	Define positive, negative, and zero sequences components in 3 phase systems.	CO2	L3	6M
	b	Derive an expression for the fault current for the LG fault. i)with impedance ii)without impedance.	CO3	L3	6M
		OR			
4		Explain about Short Circuit KVA and short-circuit current.	CO2	L4	12M
		UNIT-III			
5	a	What is load flow analysis? What is the necessity for load flow studies?	CO2	L2	6M
	b	State merits and demerits of Gauss-Seidel method.	CO2	L2	6M
		OR			
6		Draw the flow chart for Gauss-Seidel method with PV buses and explain.	CO2	L2	12M
		UNIT-IV			
7		Write an Algorithm for N-R Rectangular Coordinate Method when PV Bus is absent.	CO5	L3	12M
		OR			
8		Explain with a Flow Chart for N-R Polar Coordinate Method when PV Bus is absent.	CO5	L3	12M
		UNIT-V			
9	a	What is stability? Explain different types of stabilities.	CO6	L1	6M
	b	Derive an expression for critical clearing angle.	CO6	L2	6M
		OR			
10		State and derive swing equation.	CO6	L2	12M

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