|| Jai Sri Gurudev ||
Sri Adichunchanagiri Shikshana Trust (R)

SJB Institute of Technology

(A Constituent of BGS &SJB Group of Institutions and Hospitals)
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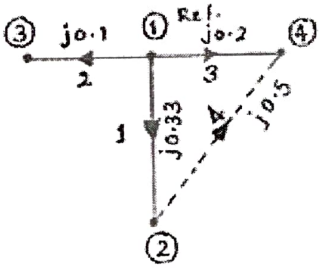
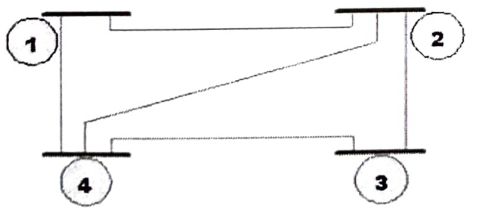
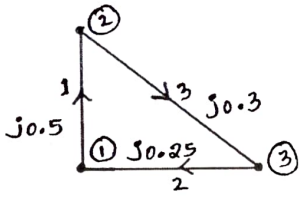
Department of Electrical & Electronics Engineering

Assignment Questions

SEM:	VII	**Aca. Year:**	2021-22	**Student Aca. Batch:**	2018-22		
Course Coordinator name:	Mr. Kubera U	**Desgn.:**	Asst. Prof.	**Dept.:**	EEE		
Course Title:	Power System Analysis-2	**C.Code:**	18EE62	**C. Type:**	Core Theory		

Q. No.	Full Question	CO Mapped	BT Level	Marks
1	With Usual notations, Derive an expression for obtaining Ybus using singular transformations.	CO1	L2	6
2	Formulate Ybus matrix by singular transformation method for the power system whose oriented graph is shown in Fig below. Element number and self impedence of the elements in p.u are marked on the daigram. Neglect mutual coupling. 	CO1	L3	8
3	What is load flow analysis? Explain how buses are classified to carry out load flow analysis.	CO2	L2	8
4	Obtain the load flow solution at the end of first G-S iteration of the system shown in Fig 4 (c) with data as given below,  Starting Bus / Ending Bus / R (pu) / X (pu): 1–2: 0.05, 0.15; 1–3: 0.10, 0.30; 2–3: 0.15, 0.45; 2–4: 0.10, 0.30; 3–4: 0.05, 0.15 Bus No. / Pi / Qi / Vi / Remarks: 1 / - / - / 1.04∠0° / Slack bus; 2 / 0.5 / -0.2 / - / PQ bus; 3 / -1.0 / 0.5 / - / PQ bus; 4 / -0.3 / -0.1 / - / PQ bus	CO2	L3	10
5	Derive the expression for Jacobian elements in polar form in Newton-Raphson method of load flow analysis.	CO2	L2	10

6	Deduce the Fast Decoupled Load Flow model clearly stating all the assumptions made.	CO2	L2	8
7	Draw and Explain the following curves 1. Input-Output curve 2. Heat rate curve 3. Increamental fuel cost curve 4. Incremental cost curve	CO3	L2	8
8	Derive the formula of transmission loss and hence B-coefficients for a two plant system.	CO3	L2	10
9	Define unit commitment and explain the constraints in unit commitment.	CO3	L2	8
10	Derive the building algorithm for finding the elements of ZBus for i) Addition of a Branch ii) Addition of a link	CO4	L2	10
11	Form Zbus using building algorithm for the power system network shown in Fig. below. Self impedences are marked on the daigram. Take element 3 as link and bus 1 as reference bus. 	CO4	L3	8
12	Explain the Algorithm for Short Circuit Studies of an n-bus power system	CO4	L2	10
13	Discuss in detail the solution of swing equation by point by point method.	CO5	L2	8
14	Explain solution of swing equation by Runge-Kutta method.	CO5	L2	8

Course Instructor

HOD