

Assignment - I

5/10/2022

Q.No. 1] The bus incidence matrix of a power system is given below

e\k	①	②	③
1	1		
2		-1	
3			-1
4	1	-1	
5		-1	1
6	1		-1

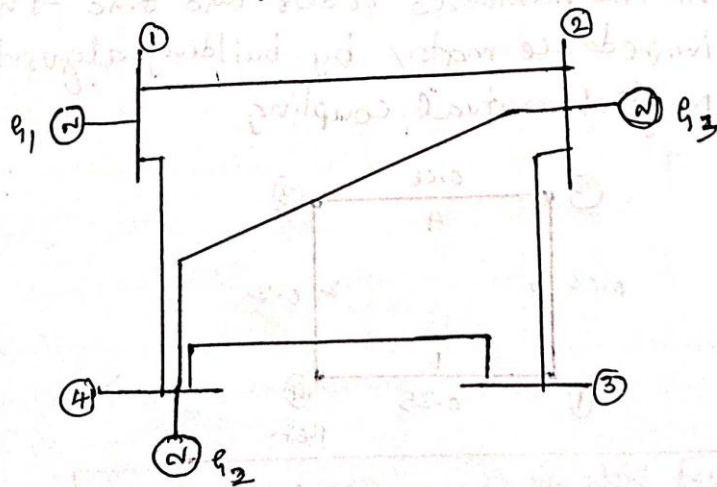
- i) Draw the oriented graph of the system
- ii) Compute the Bus Admittance matrix for given element impedances.

$$\bar{z}_1 = \bar{z}_2 = \bar{z}_3 = 0.1 \text{ pu}$$

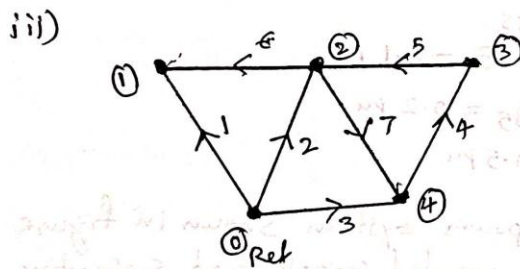
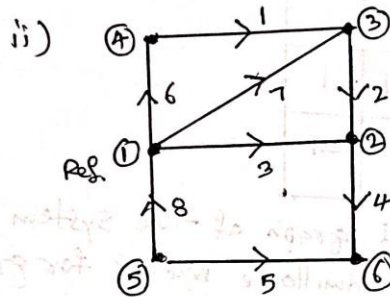
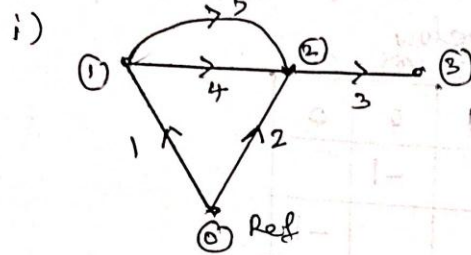
$$\bar{z}_4 = \bar{z}_5 = 0.2 \text{ pu}$$

$$\bar{z}_6 = 0.5 \text{ pu}$$

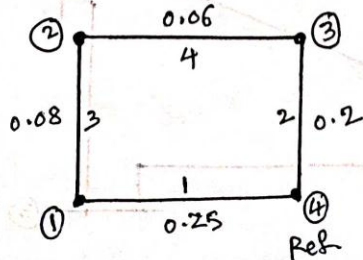
Q.No. 2] For the power system shown in figure below, draw the oriented graph and selecting the ground as reference, form the following matrices; i) Element-node incidence matrix ii) Bus-incidence matrix



Q. No. 3] For the given oriented graphs, below, write down the Bus Incidence Matrices.



Q. No. 4] A positive sequence reactance network is shown in figure below. Take the elements in the numbered order and find the impedance matrix by building algorithm. Neglect mutual coupling



Last Date for Submission : 10/10/2022

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