BAPURAO DESHMUKH COLLEGE OF ENGINEERING, SEVAGRAM

DEPARTMENT OF ELECTRICAL ENGINEERING

Name of the Course: Network Analysis/Network Theory
Course code: BEELE304T/ BEETC-304T
Semester: III Sem (CBS)
Branch: Electrical Engineering
Academic Year: 2021-22
Name of the Teacher: Prof. K. N. Sawalakhe

Assignment-I with Mapping of COs

Date of Issue: 16/11/2021 Date of Submission: 23/11/2021

CO: 1 Apply mesh current and node voltage methods to analyse electrical circuits.
CO: 2 Apply network theorems for the analysis of networks.

1. Find mesh currents **I_1 , I_2 & I_3** in the n/w of fig. 1 (a). Solve by mesh analysis.

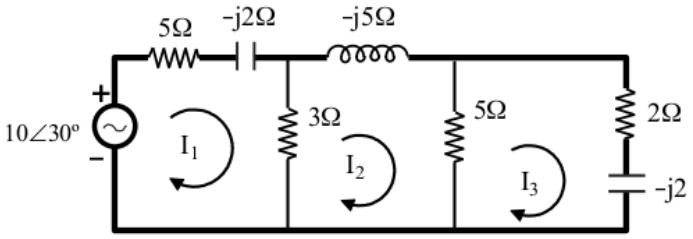

Fig.1(a)

2. Determine the current in the **10 Ω** resistor of the n/w shown in fig 1 (b).

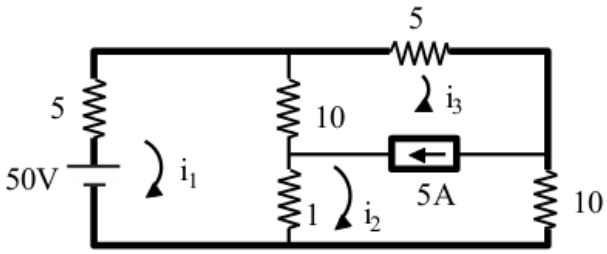

Fig. 1 (b)

3. Write the equilibrium equation on mesh basis for the n/w of fig. 2 (a).

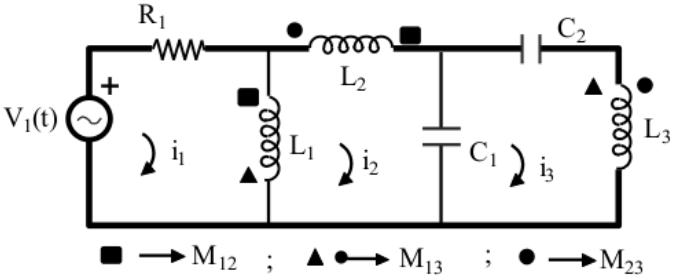

Fig. 2(a)

4. For the network shown in fig. 3 (a) find the voltages **V_1 & V_2**. (Solve by Nodal analysis).

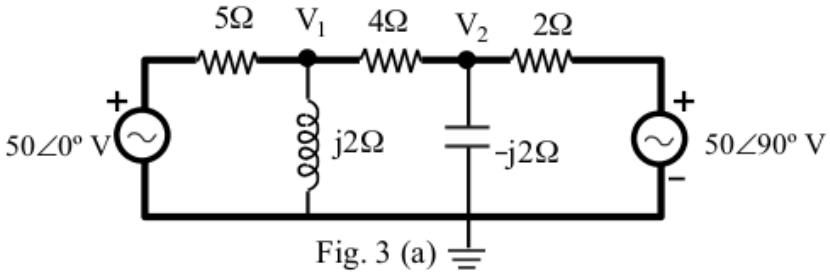

Fig. 3 (a)

5. Explain the term duality & construct the dual circuit for the circuit shown in fig 4 (a).

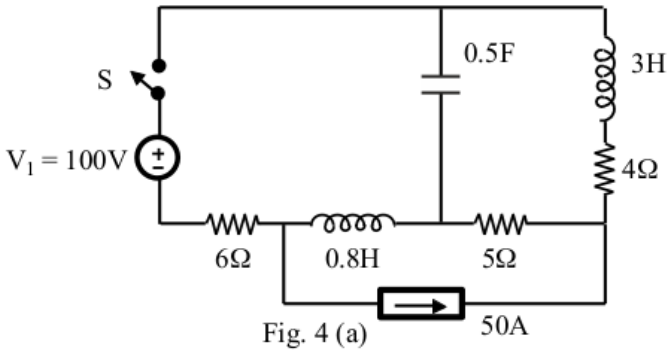

Fig. 4 (a)

6. Evaluate current in impedance 2+ j3 using Thevenin's Theorem for Network shown in Fig. 7

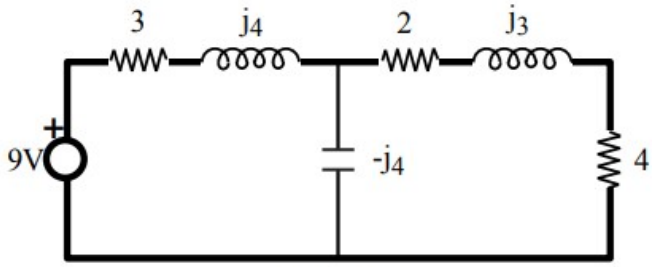

Fig. 7

7. Evaluate the current through 10 Ω resister by Thevenin's theorem & confirm result by Norton's theorem.

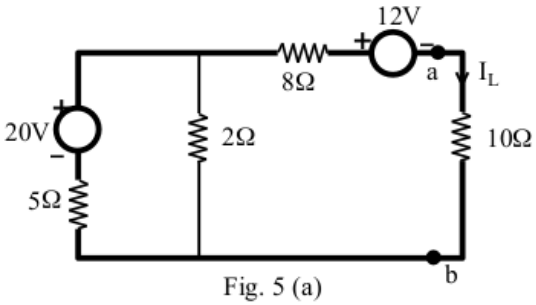

Fig. 5 (a)

8. State and Prove Maximum Power transfer theorem.

9. Find the impedance Z_L , so that maximum power can be transferred to it in the n/w of fig 5 (b). find maximum power.

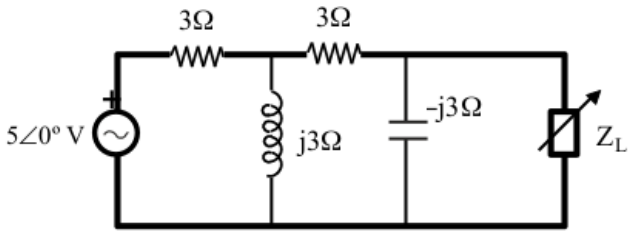

Fig. 5 (b)

10. In the n/w of fig 6 (a) find the current through the 2 Ω resistor & verify the reciprocity theorem.

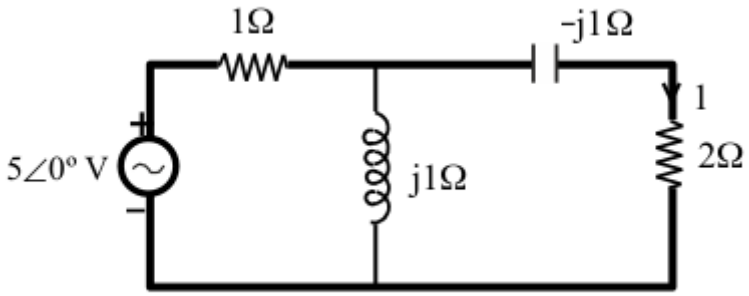

Fig. 6 (a)

	1	2	3	4	5	6	7	8	9	10
CO1	x	x	x	x	x					
CO2						x	x	x	x	x