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GOVT. COLLEGE OF ENGINEERING, KANNUR.

Department of Electronics and Communication Engineering

Third Semester First Series Examination November- 2022 (2019 Scheme)

Course code: ECT205

Course Name: NETWORK THEORY

Max. Marks: 50 Duration: 90 Minutes

PART A

Answer all questions. Each question Carries 3 marks

1. Differentiate between ideal and practical voltage sources. (3 Marks) (CO1)
2. Find the voltage across 2Ω resistor in the network shown in Fig. 1.

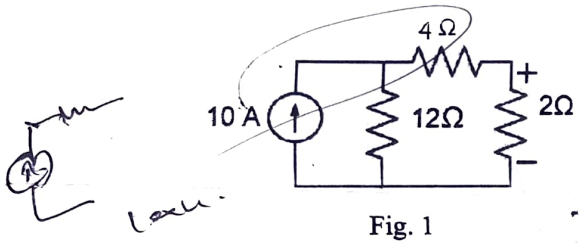

Fig. 1 (3 Marks) (CO1)

3. State maximum power transfer theorem (3 Marks) (CO1)
4. Write the steps for finding Thevenin equivalent circuit of a given network. (3 Marks) (CO1)
5. Find the Laplace transform of $f(t) = e^{at}$. (3 Marks) (CO2)

PART B

6. a) Find the mesh currents in the network shown in Fig. 2.

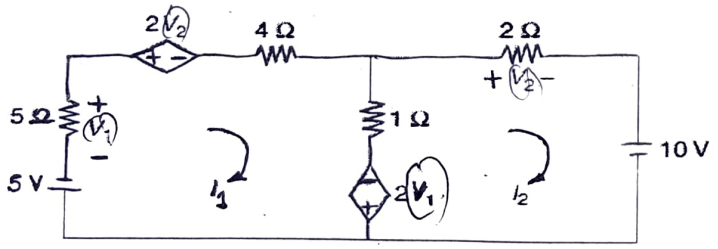

Fig. 2 (7 Marks) (CO1)

b) Find the voltage across 2Ω resistor in the network shown in Fig. 3.

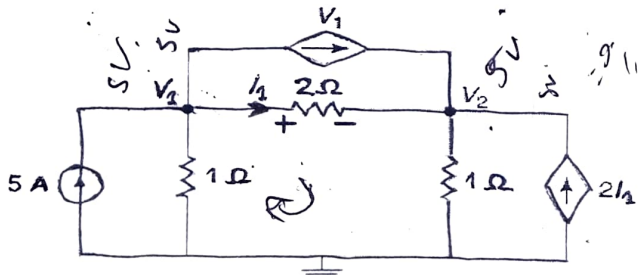

Fig. 3 (7 Marks) (CO1)

OR

7. Find mesh currents I_1, I_2 and I_3 in the network of Fig. 4.

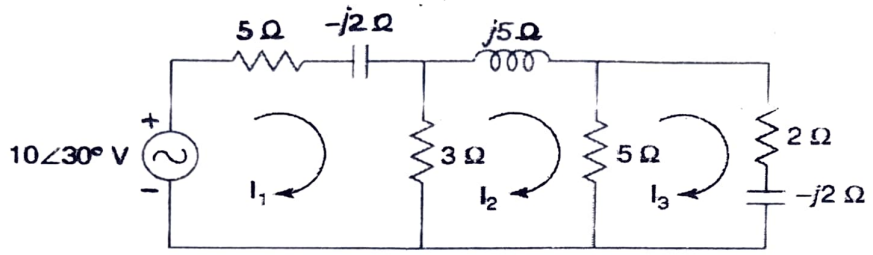

Fig. 4 (14 Marks) (CO1)

8. Find Norton's equivalent network across terminals A and B of Fig. 5.

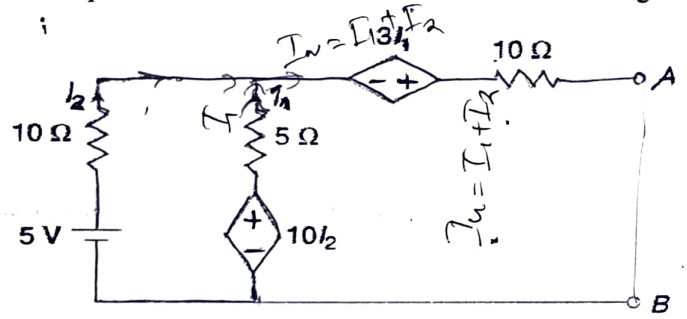

Fig. 5. (14 Marks) (CO1)

OR

9. Find Thevenin's equivalent network across terminals A and B for Fig. 6.

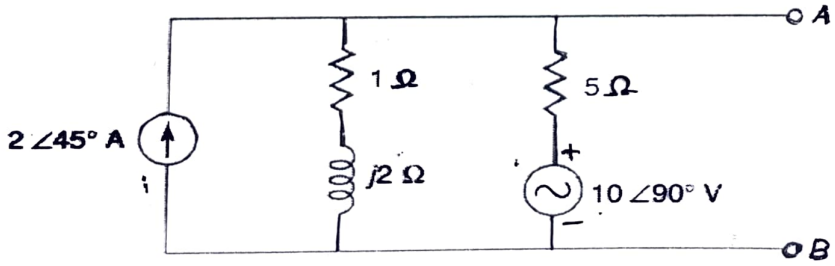

Fig.6. (14 Marks) (CO1)

10. Find Laplace transform of $\int_0^t f(t)dt$, if the Laplace transform of $f(t)$ is $F(s)$. (7 Marks) (CO1)

OR

11. State and prove initial value theorem for Laplace transforms. (7 Marks) (CO1)

Course Outcome (CO)

Sl No.	Description	Questions No.s
ECT205.CO1	Apply mesh/ node analysis or network theorems to obtain steady state response of a linear time invariant networks.	1,2,3,4,6,7,8,9
ECT205.CO2	Apply Laplace transforms to determine the transient behaviour of RLC networks.	5,10,11

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