

Reg No.: _____

Name : _____

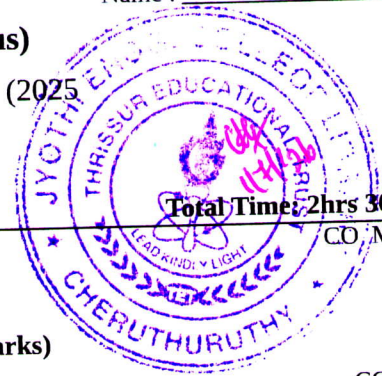


Jyothi Engineering College(Autonomous)

B. Tech Degree S2 (S) Examination, June 2026 (2025 Scheme)

25ECT205 - NETWORK THEORY

Total Mark: 60



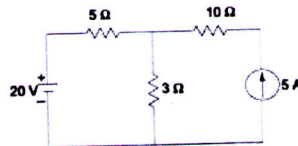
Total Time: 2hrs 30 min

CO MARK

PART A

(Answer All Questions. Each question carries 3 marks)

1. Differentiate between Planar and Non-planar circuits. CO1 (3)
2. Define Ohm's law and mention the situation at which Ohm's law fails. CO1 (3)
3. Find the current through 3 ohm resistor using Superposition Theorem. CO2 (3)



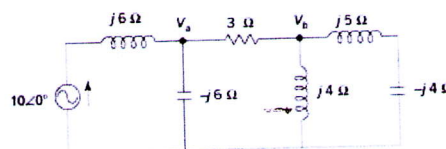
4. State Norton's Theorem. CO2 (3)
5. Find the Inverse Laplace Transform of $\frac{4}{s^2 + 64}$. CO3 (3)
6. Derive Laplace Transform of the exponential function $f(t) = e^{-at}$. CO3 (3)
7. Explain the necessary condition for driving point function. CO4 (3)
8. Derive short circuit admittance (Y) parameters for a two-port network. CO4 (3)

PART B

(Answer any one full question from each module, each question carries 9 marks)

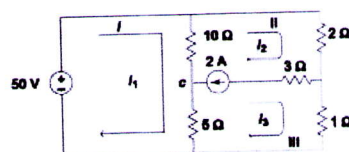
Module - 1

9. In the network shown below, determine V_a and V_b . CO1 (9)



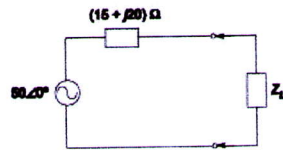
OR

10. Determine the current in the 5 ohm resistor in the network given below. CO1 (9)



Module - 2

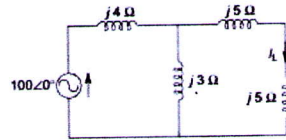
11. For the circuit shown below, find the value of load impedance for which the source delivers maximum power. Calculate the value of the maximum power delivered to the load. CO2 (9)



OR

12. For the circuit shown below, determine the load current by applying Thevenin's theorem.

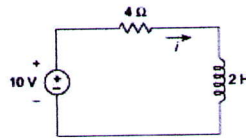
CO2 (9)



Module - 3

13. Determine the current i for $t \geq 0$ if initial current $i(0) = 1$ for the circuit shown below.

CO3 (9)



OR

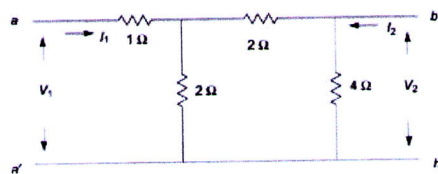
14. Verify the initial and final value theorems for the function $f(t) = e^{-t}(\sin 3t + \cos 5t)$.

CO3 (9)

Module - 4

15. Find the h parameters of the network shown below.

CO4 (9)



OR

16. Two networks shown below are connected in series. Obtain the Z parameters of the combination. Also verify the result by direct calculation.

CO4 (9)

