

QP CODE: 25050671



Reg No :

Name :

MSc DEGREE (CSS) EXAMINATION, DECEMBER 2025

First Semester

M Sc ELECTRONICS

Core Courses - EL010101 - NETWORK ANALYSIS AND SYNTHESIS

2019 Admission Onwards

136EE84B

Time: 3 Hours

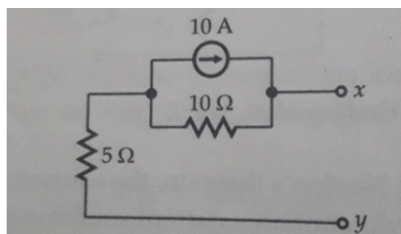
Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. Explain unilateral and bilateral element with examples.
2. Whether superposition theorem is applicable to find power response. Specify the reason for your answer.
3. Find the Norton's Equivalent circuit to the left of terminal XY



4. Explain the applications of maximum power transfer theorem.
5. Define Laplace Transform.
6. Explain the frequency shifting property of Laplace Transform.
7. With suitable circuit diagram express the voltage equation of series RL circuit.
8. Explain the equation to plot magnitude and phase spectrum.
9. Define unit step signal.
10. Distinguish between causal and non causal signals.

(8×1=8 weightage)



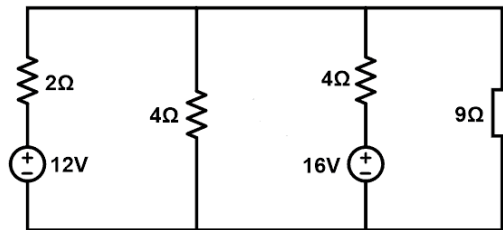


Part B (Short Essay/Problems)

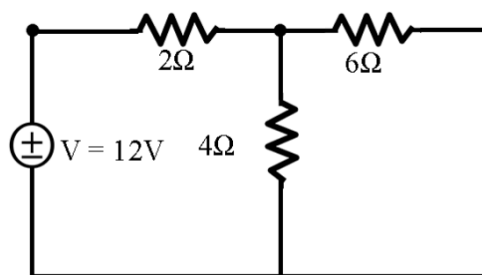
Answer any **six** questions.

Weight 2 each.

11. Explain compensation Theorem.
12. Find the current and voltage across load terminal using Millman's Theorem.

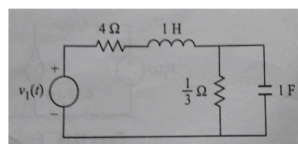


13.



Verify reciprocity theorem

14. Find the laplace transform of the function $f(t) = \cos \omega t$
15. Verify initial value theorem and final value theorem $f(t) = 5e^{-4t}$
16. Analyze step response of RC circuit using Laplace transform
17. Illustrate the relation between transfer function and impulse response
18. Sketch the pole zero plots of driving point impedance and transfer impedance of the network



(6×2=12 weightage)

Part C (Essay Type Questions)

Answer any **two** questions.

Weight 5 each.

19. Using a standard simple circuit, Analyse how thevenin's equivalent circuit can be obtained.





20. Analyse the response of RLC circuit to unit step input.
21. Discuss about Network functions and also describe how pole zero plot can be plotted from it.
22. Compare the second Foster and Cauer form of RL network with an example

(2×5=10 weightage)

