Reg. No. : | | | | | | | | | | |

Question Paper Code: 33403

B.E. / B.Tech. DEGREE EXAMINATION, AUGUST 2021

Third Semester

Electronics and Communication Engineering

01UEC303 - CIRCUIT THEORY

(Regulation 2013)

Duration: 1:45 hour Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

(Answer any ten of the following questions)

1. State Kirchoff's voltage and current law.
2. Give the properties of tree in a graph.
3. State Tellegen's theorem.
4. State Norton's theorem.
5. When the current is maximum in the series resonance circuit? Why?
6. Write the properties of a parallel RLC circuit.
7. Give the conditions for balanced star connected load.
8. Give the line and phase values in delta connection?
9. What is impedance matching?
10. Define driving point and transfer point impedance.
11. Write the properties of a parallel RLC circuit.
12. List the methods for unbalanced star connected load.
13. Give the line and phase values in delta connection?

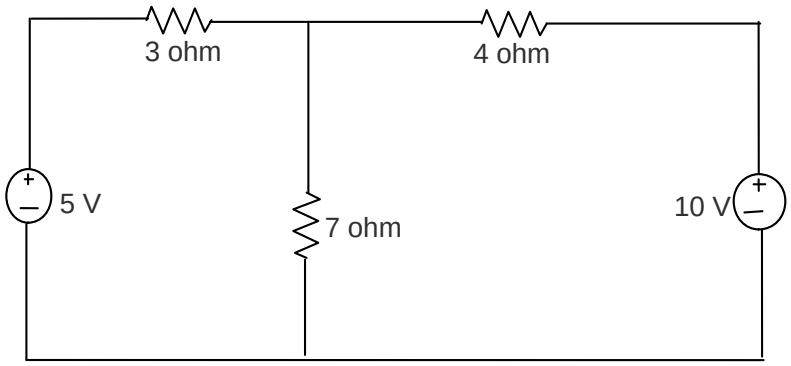
14. List the characteristics of ideal filter.

15. Give the details of impedance parameters of two port networks.

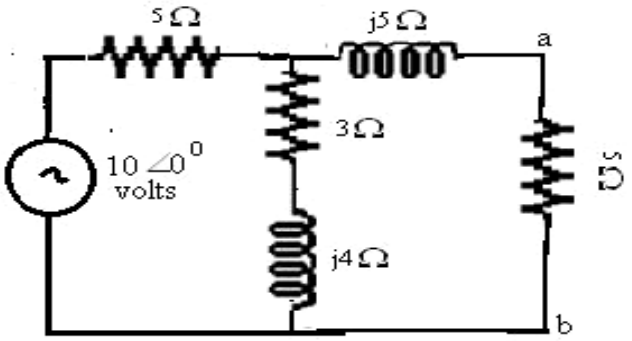
PART – B (3 x 10= 30 Marks)

(Answer any three of the following questions)

16. Draw the dual network of the given circuit. (10)



17. State the Thevenin's theorem and find the current through branch a-b of the network shown in below figure. (10)



18. A voltage *v (t)=10 sinωt* is applied to a series RLC circuit. At the resonant frequency of the circuit, the maximum voltage across the capacitor is found to be 500*V*. Moreover the bandwidth is known to be *400 rad/sec* and the impedance at resonance is 100Ω. Find the resonant frequency. Also find the values of *L* and *C* of the circuit. (10)

19. Explain the single tuned circuit with neat diagram and obtain the gain and mutual inductance. (10)

20. Convert the given T-network to a Π network. (10)