DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Mid Semester Examination – Oct 2018

Course: B. Tech in S.Y. (ECT) **Sem: III**

Subject Name: Network Analysis **Subject Code: BTEXC304**

Max Marks: 20M **Date:-11/10/2018** **Duration:- 1 Hr.**

Instructions to the Students:

1. Check Question paper correct or not.
2. Draw net and labeled circuit diagram.
3. Use appropriate units with entities.
4. Assume suitable data if required.

Marks

Q. 1 Attempt following questions **6**

1 An attenuator is a
(A)R's network. (B)RL network.
(C)RC network. (D)LC network.

2 How is the loop analysis different in application/functioning level as compared to Kirchoff's law?
(A) Utilization of loop currents instead of branch currents for writing equations
(B) Capability of branch current to carry multiple networks
(C) Reduction in the number of unknowns for complex networks
(D)All of the above

3 What would be the value of power factor for series RLC circuit under the resonance phenomenon?

(A) 0 (B)0.5 (C) 1 (D) Infinity

4 Kirchhoff s current law states that

(A) net current flow at the junction is positive

(B) Algebraic sum of the currents meeting at the junction is zero

(C) no current can leave the junction without some current entering it.

(D) total sum of currents meeting at the junction is zero

5 A Star connection contains three impedances of 60 Ω each. The impedances of equivalent delta connection will be
(A)120Ω each. (B)160Ω each. (C)180 Ω each. (D)60Ω each.

6 Thevenin resistance Rth is found

(A) by removing voltage sources along with their internal resistances

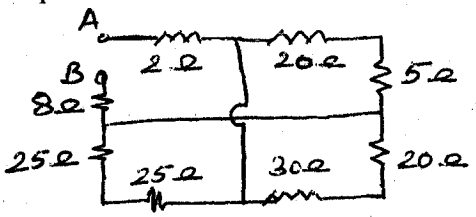
(B) by short-circuiting the given two terminals

(C) between any two 'open' terminals

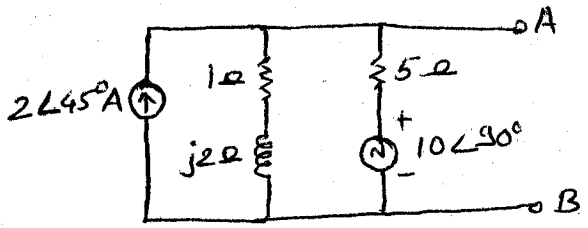
(D) between same open terminals as for Eth

Q.2 Solve Any Two of the following. **3 X 2**

(A) Find the equivalent resistance between A&B in the network of Figure.



(B) Find Thevenin's equivalent network across terminals A&B for figure



(C) Derive the equation of resonant frequency for RLC series Resonance with circuit diagram & phasor representation of Voltage & Current.

Q. 3 Solve Any One of the following. **8**

(A) Each of the two series elements of a T-section low pass filter consists of an inductor of 60mH having negligible resistance and a shunt element having a capacitance of 0.2μf. Calculate a) the cut-off frequency b) nominal impedance c) Characteristic impedance at frequencies of 1KHz & 5KHz.

(B) A resistor and a capacitor are connected in series with a variable inductor .When the circuit is connected to a 230V,50Hz supply, the maximum current obtained by varying the inductance is 2A .The voltage across the capacitor is 500V. Calculate resistance, Inductance & capacitance of the circuit.

***** End *****