

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination – Winter 2018

Course: B. Tech in Electrical Engineering
Subject Name: Network Analysis and Synthesis
Date: 03/12/2018

Max Marks: 60

Semester: III
Subject Code: BTEEC302
Duration: 3 Hrs.

Instructions to the Students:

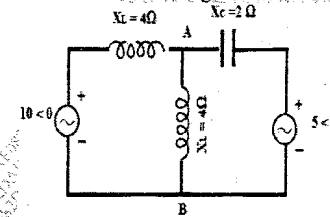
1. Solve ANY FIVE questions out of the following.
2. Students should note, no supplement will be provided.
3. Use of non-programmable scientific calculators is allowed.
4. Assume suitable data wherever necessary and mention it clearly.

Q.1 Solve Any Two sub questions

- A) Use superposition theorem to find current through branch A-B in the Circuit of figure

Marks

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- B) Explain the following terms
i) Independent and Dependent sources
ii) Lumped and distributed systems.

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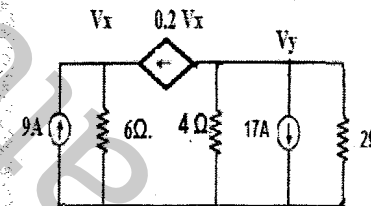
- C) State and Explain maximum Power transfer theorem in case A.C circuits

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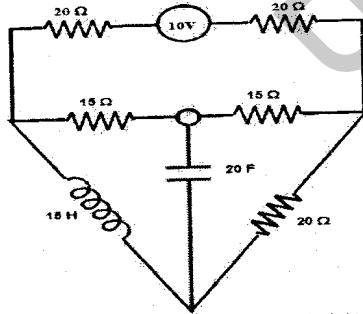
Q.2 Solve Any Two sub questions

- A) Using Nodal Analysis find Voltage ' V_y ' for given N/W

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B) Obtain dual network for the circuit given below



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- C) Define the following
- i. Planar graph
 - ii. NonPlanar graph
 - iii. Subgraph.
 - iv. Tree and Co-Tree

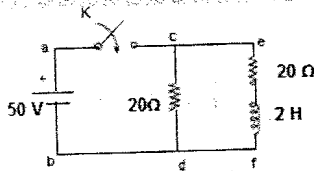
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Q. 3 Solve All Sub-Questions

- A) Explain response of RL series circuit to D.C. excitation
- B) Find the expression of current when 50V dc source is applied as switch K is opened At $t=0$,

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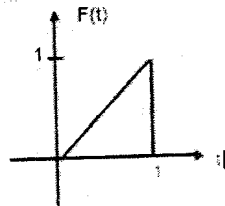
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Q.4 Solve All Sub-Questions

- A) Find the Laplace transform of the waveform

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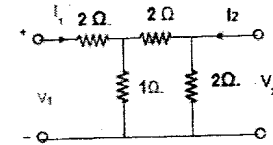
B) Explain Concept of Complex Frequency in detail

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Q. 5 Solve All Sub-Questions

- A) Determine the Open circuit parameters for the circuit shown below

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B) What is the physical significance of Pole and Zero in a transfer function?

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Q. 6 Solve All Sub-Questions

- A) What is Meant by Resonance in RLC Series Circuit and Derive equation for resonant Frequency
- B) Explain the High pass filter and band pass filter.
- C) A Coil of inductance 31.8mH and resistance of 10Ω is connected in parallel across 250V, 50Hz. Determine value of Capacitance so that total current is in phase supply voltage

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*** End ***