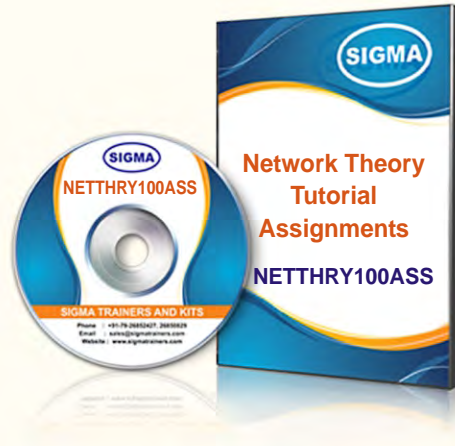




NETWORK THEORY TUTORIAL ASSIGNMENTS

MODEL - NETTHRY100ASS

This Software trainer provides Network Theory Tutorial Assignments.



SPECIFICATIONS

1. Network Theory Tutorial Assignments.
2. **Books for Electromagnetic and Transmission Lines : 10 Nos in pdf Format**
3. **Mp4 Video Class for Electromagnetic and Transmission Lines : 40 Classes in Mp4 on Pen Drive**

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Dealer:-

EXPERIMENTS

- 1 Determine the following using KCL, KVL, node, loop analysis and circuit simplification techniques
 1. Currents through various given branches
 2. Voltages across the given branches
 3. Power absorbed or delivered by a given component(Various network involving resistors, inductors, capacitors, dependent and independent current and voltages sources may be given and students are expected to analyze the network and determine the above. Analysis of AC, and DC both is expected)
- 2 Determine the following using Network Theorems. One problem statement on each theorem.
 1. Currents through various given branches
 2. Voltages across the given branches
 3. Power absorbed or delivered by a given component(Various network involving resistors, inductors, capacitors, dependent and independent current and voltages sources may be given and students are expected to analyze the network and determine the above. Analysis of AC, and DC both is expected)
- 3 Carry out the following analysis of a given network.
 1. Draw relevant network graph, tree, co-tree, and loops.
 2. Formulate incidence matrix, tie-set, cut-set matrix whichever is applicable.
 3. Formulate equilibrium equations in matrix form, and solve.
 4. Find the duality.(One problem on each technique is expected)
- 4
 1. Formulate differential equation for RL and RC circuits and solve for current and voltages by determining initial conditions for driven and source free conditions.
 2. Carry out the transient analysis and determine the voltage, current expressions for a given network involving RL, RC, RLC(One problem statement on each combination, source free and driven RL, RC, series RLC network)
- 5
 - A. Analyze the series and parallel resonant circuits and derive the equations of Q- factor, resonance frequency, bandwidth, impedance, and selectivity.
 - B. Determine Q-factor, resonance frequency, bandwidth, impedance, and selectivity for a given problem. (One problem on series and parallel resonant circuit each)
- 6
 - A. Analyze the LC low pass, high pass, band pass and band stop by deriving cut off frequency, impedance, and draw the frequency response in terms of impedance curves.
 - B. Design prototype constant K – Low, High, Band pass, band stop filters for given specification. (One problem on each type of filter)
- 7 Formulate the z, y, h, ABCD parameters and find the conditions for Reciprocity and Symmetry conditions.
- 8 Determine the z, y, h, ABCD parameters for a given network
- 9 Analyze the given network using Laplace Transform and find the network transfer function