(DEE 224)

B. Tech. DEGREE EXAMINATION, MAY - 2015

(Examination at the End of Second Year)

Electricals and Electronics Engineering

Paper - IV : NETWORK ANALYSIS - II

Time : 3 Hours   **Maximum Marks : 75**

Answer question No.1 compulsory   *(15 × 1 = 15)*

Answer any ONE question from each unit   *(4 × 15 = 60)*

1)   a)   Define path.

     b)   Define Co-Tree.

     c)   Write expressions for hybrid Parameters.

     d)   Write expressions for Y Parameters.

     e)   Write expression for transformed impedance of Capacitance 'C'.

     f)   Draw waveform of pulse function.

     g)   Define zero.

     h)   Draw 'pie' network.

     i)   Define mutual self inductance.

     j)   Define Faraday's first law.

     k)   Draw high pass filter.

     l)   Draw constant K low pass filter.

     m)   Write any two disadvantages of three phase system.

n) Write expression for power using 2 – wattmeter method.

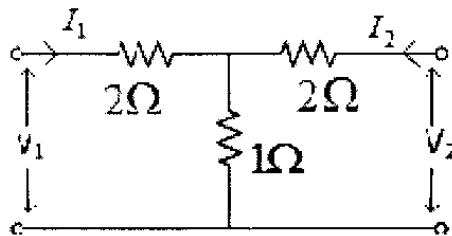o) Write the relation between line and phase quantities of 3 phase star system.

UNIT - I

2) a) Write the properties of tree with example.

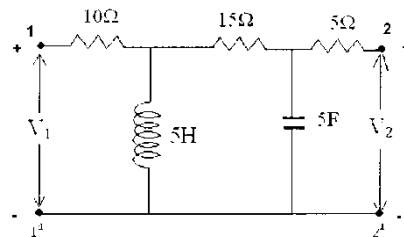b) For the network shown in figure, write a tie set schedule.
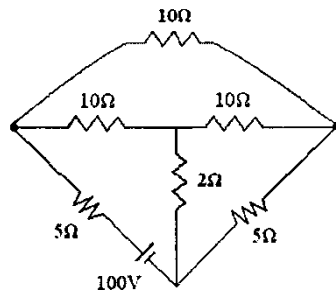
OR

3) a) State and derive the expression for ABCD parameters.

b) Obtain Z parameters.

UNIT - II

4) a) Explain ABCD parameters in terms of transformed networks.

b) Find ABCD parameters for the network shown in below.

OR

5) a) State and derive expressions for hybrid parameters in terms of transformed variables.

b) State and derive expressions for Z parameters in terms of transformed variables.

UNIT - III

6) Clearly explain Low Pass Filter.

OR

7) a) Define coefficient of coupling. In which type of circuits it is minimum and in which type of circuits it is maximum?

b) Two coupled coils with respect to self inductances L_1 = 0.6H, L_2 = 0.4H having a k = 0.4. Coil 2 has 100 turns. The current in coil 1 is l_1 = 10sin200t A. Determine the voltage at coil 2 and maximum flux set by coil 1.

UNIT - IV

8) a) Derive the relation between phase and line values of a 3-phase balanced delta connected system.

b) Three impedances each of (5 + j12) ohm are connected in star to a 220V, 3-phase, 50 Hz supply. Calculate the line currents.

OR

9) Two watt meters are used to measure the power input in a 3 phase circuit indicate 1000 W and 500 W respectively. Find the power factor of the circuit : when i) when both wattmeter readings are positive. ii) When the latter is obtained by reversing the current coil connections. Derive the expression for power factor.

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