SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech I Year II Semester Supplementary Examinations May/June-2024
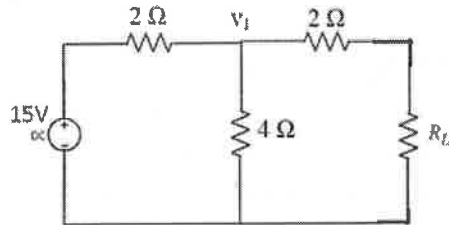**NETWORK ANALYSIS**
(Electronics & Communication Engineering)

Time: 3 Hours   Max. Marks: 60
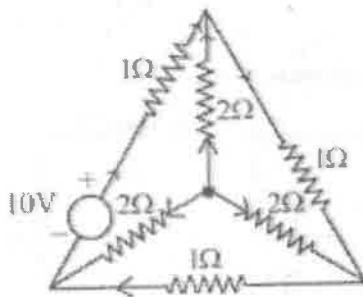
(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	What is the condition for maximum power transfer to the load?	CO1	L3	6M
	b	Find Thevenin's equivalent for the following circuit	CO1	L3	6M

OR

2	a	Define and state the properties of incidence matrix.	CO1	L2	6M
	b	For the network shown below draw the graph and find incidence and tie – set matrices.	CO1	L3	6M

UNIT-II

3	a	Explain the phasor relation for R,L,C elements.	CO1	L3	6M
	b	A resistor of 50Ω, inductance of 100mH and a capacitance of 100µF are connected in series across 200V, 50Hz supply. Determine the following (i) Impedance (ii) current flowing through the circuit (iii) power factor (iv) voltage across R,L &C (v) power in watts	CO1	L3	6M

OR

4	a	Explain the phasor relation for parallel RLC circuit.	CO1	L2	6M
	b	A parallel RLC circuit is supplied with a voltage source of 230 V, 50Hz. Determine circuit current and power factor if R=40Ω, L=0.2H and C=50µF.	CO1	L3	6M

UNIT-III

5		Obtain the expression for resonant frequency, bandwidth and Q-factor for Series R-L-C circuit.	CO2	L3	12M

OR

6 a In a parallel resonance circuit (Tank circuit) R=2Ω, L=1mH and   CO2   L3   6M
      C=10μF, Find the Resonant frequency, Dynamic impedance and
      Bandwidth.

   b Obtain the expression for resonant frequency for parallel RL-RC circuit.   CO2   L3   6M

UNIT-IV

7 a Find the Y- parameters for the following circuit.   CO2   L3   6M
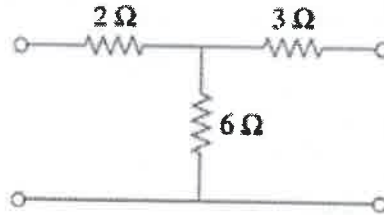
   b Express h parameters in terms of ABCD parameters.   L3   6M

OR

8 a What are the advantages of state variable analysis.   CO2   L3   6M

   b The transfer function of a system is G(s)=2/(s+1)(s+2). Obtain a state   CO2   L3   6M
      variable representation for the system.

UNIT-V

9 a What is a filter? Explain about various types of filters.   CO3   L2   6M

   b Explain the classification of pass band and stop band in detail.   CO3   L2   6M

OR

10   What is high pass filter. Explain the general configuration and   CO3   L2   12M
     parameters of a contant-K high pass filter.

*** END ***