Q.P. Code: 16EE205 **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR

(AUTONOMOUS)

B.Tech I Year II Semester Supplementary Examinations December 2018

NETWORK ANALYSIS

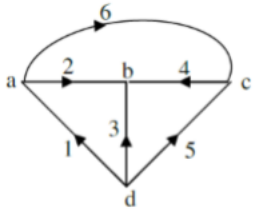
(ECE)

Time: **3 hours** Max. Marks: **60**

(Answer all Five Units **5 X 12 = 60** Marks)

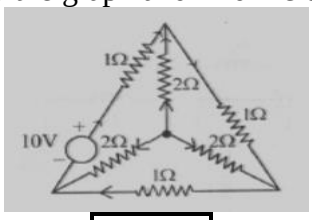
UNIT-I

1	**a.**	Define the following terms (i) Branch (ii) Sub graph (iii) Node (iii) Tree	4M
	b.	For the graph shown below find incidence and cut set matrices.	8M



OR

2	**a.**	Define and state the properties of incidence matrix.	4M
	b.	For the network shown below draw the graph and find incidence and tie – set matrices	8M



UNIT-II

3	**a.**	Explain the characteristics of sinusoids.	4M
	b.	A resistor of 150Ω, inductance of 200mH and a capacitance of 10μF are connected in series across 500V, 150Hz 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	8M

OR

4	**a.**	Explain the complete response of source free series RLC Circuits.	6M
	b.	Explain about Natural & Forced Response of RLC Circuits.	6M

UNIT-III

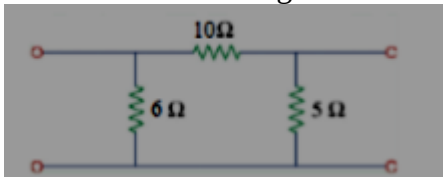
5	**a.**	Obtain the expression for resonant frequency, bandwidth and Q-factor of parallel RLC circuit.	6M
	b.	Obtain the expression for resonant frequency, bandwidth and Q-factor of Series RLC circuit.	6M

OR

6	**a.**	Explain about dot convention in mutually coupled circuits.	4M
	b.	Explain about linear transformer and ideal transformer.	8 M

UNIT-IV

7	**a.**	Express Z parameters in terms of ABCD parameters.	4M
	b.	Find the ABCD and h - parameters for the following circuit.	8M



OR

8	**a.**	Explain about the state variables and state variables of circuits.	10M
	b.	What are the advantages of state variable analysis?	2M

UNIT-V

9		Design a constant K high pass filter and explain its design procedure in detail.	12M

OR

10		What is high pass filter? Explain the general configuration and parameters of a constant -K high pass filter.	12M

***** END *****