ACE
Engineering College
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An AUTONOMOUS Institution

Question Paper Code:	EE302PC	ACE-R20

Semester End Examination
II B. Tech- I Semester- MARCH-2022
ELECTRICAL CIRCUITS
(Electrical and Electronics Engineering)

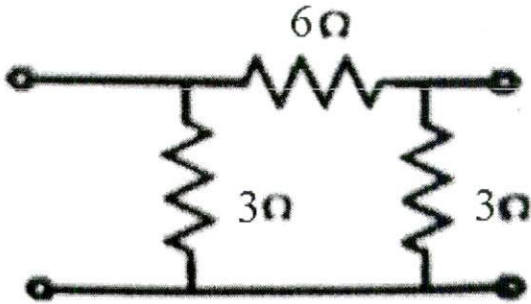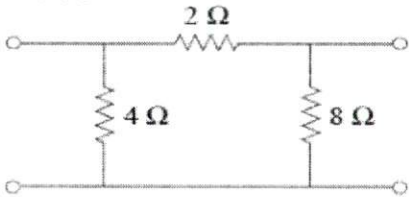Time: 3 Hours   Max. Marks: 70

H. T. No										

Answer any 5 Questions out of 8 Questions from the following

Q.No	Question	Marks
1. a)	Determine the current flowing through the 6Ω resistor and voltage drop across 2Ω resistor in the circuit shown below figure by using nodal analysis.	6
b)	Find V_o in the circuit shown in below figure by using Thevenin's Theorem.	8
2. a)	Explain reciprocity theorem in detail.	6
b)	Compute the *vo* using super position theorem for the circuit shown in figure.	8
3.	Derive the expression for the complete response for current in a series RLC circuit excited by DC supply by closing the switch at t=0⁺	14

4.	Explain the following a) Dot convention in coupled circuits b) Ideal transformer c) Complex power in a 1-Ø circuit	5+5+4
5. a)	Evaluate the DC transient response of RL series circuit.	7
b)	Deduce the expression for co-efficient of coupling of a magnetically coupled circuit.	7
6. a)	Explain the properties of Laplace transforms in Detail.	7
b)	A series RLC circuit has a resistance of 20Ω, a capacitance of 0.02μF, and an inductance of 0.02H. Find the resonance frequency and half power frequencies.	7
7. a)	Derive the relationship between impedance and admittance parameters.	6
b)	Determine the transmission parameters of the network shown in below figure. 	8
8. a)	Explain the convolution Integral in detail.	6
b)	Determine the Admittance(Y) parameters for the following network. 	8