GALGOTIAS UNIVERSITY

ADMISSION NUMBER

School of Computing Science and Engineering

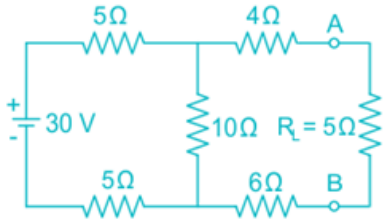
Bachelor of Technology in Computer Science and Engineering
Semester End Examination - Jun 2024

Duration : 180 Minutes
Max Marks : 100

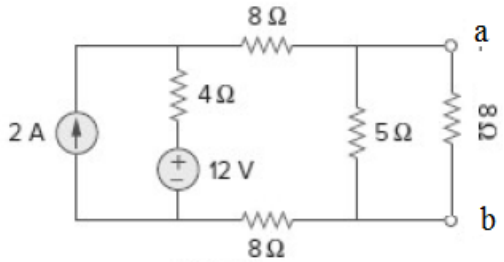
Sem II - G2UA120B - Basic Electrical and Electronics Engg.

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

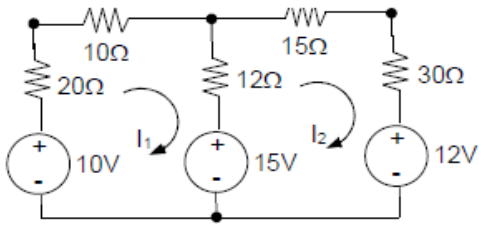
1)	Tell the biasing of P-N junction diode.	K1(2)
2)	Explain the differences between Thevenin's and Norton's theorem.	K2(4)
3)	Summarize the differences between half wave rectifier and full wave rectifier.	K2(6)
4)	Solve the problem with the help of Norton's theorem and find the current through the RL (5Ω) resistor.	K3(9)



5)	Solve the problem with the help of Norton's theorem and find the current through the 8Ω resistor (terminal a and b).	K3(9)



6)	Measure the value of current through 12Ω resistor using mesh current analysis for the given circuit.	K5(10)



7)	Analyze Idc, Irms, ripple factor and rectifier efficiency of a Half Wave rectifier circuit.	K4(12)
8)	Explain parallel RLC resonance network. A parallel resonance network consisting of a resistor of 60Ω, a capacitor of 120uF and an inductor of 200mH is connected across a sinusoidal supply voltage which has a constant output of 100 volts at all frequencies. Determine, the resonant frequency, the quality factor and the bandwidth of the circuit, the circuit current at resonance and current magnification.	K5(15)
9)	Explain Zener voltage regulation circuit. A voltage regulation circuit having a Zener diode with a breakdown voltage of 6V . If the input voltage varies from 8V to 12V, determine the series resistor value (Rs) required maintaining a constant output voltage of 6V. Assume the Zener resistance (Rz) is 10 ohms at breakdown region.	K5(15)
10)	(a) Design a pure capacitive AC circuit and derive its current and voltage. (b) A series RLC Circuit connected to a 230V AC supply. If at resonance frequency, the current draw by the series circuit is 25A and voltage drop across 800 μF capacitor is 40V. Calculate the overall impedance, power factor and resonance frequency of the circuits.	K6(18)