

Name:

Student University Roll No.:

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Pages:2

School of Engineering

First Sessional Examination, Even Semester (AS: 2022-23)

B. Tech: CS11-18

Year: 1

Semester: I

Course Title: Basic Electrical Engineering

Course Code: BEE3201

Max Marks: 30

Time: 1 hr

Instructions if any: Read the question Carefully.

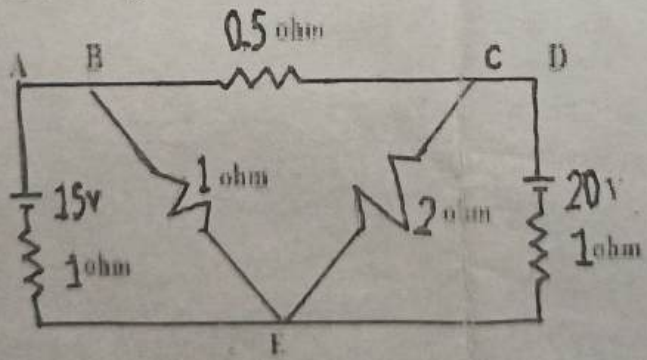
SECTION 'A'

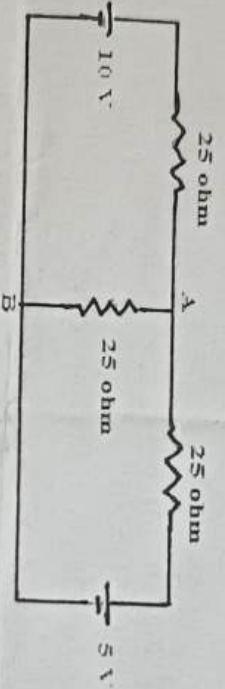
Q.N.1. Attempt all parts of the following:

		Course Objecti ve	Mar ks
a)	What is an ideal Voltage source?	CO1	1
b)	State Tellegen's Theorem.	CO1	1
c)	Define Kirchhoff's Voltage Laws.	CO1	1
d)	Define true power in AC.	CO2	1
e)	State Bandwidth and Quality factor.	CO2	1

SECTION 'B'

Q.N.2. Attempt any two parts of the following:

		Course Objecti ve	Mar ks
a)	State and explain Maximum Power transfer theorem to solve network problems, and also write two applications.	CO1	7.5
b)	By using nodal analysis, find the total power consumed in given circuit: 	CO1	7.5
c)	Prove that the average power consumed in a pure inductive circuit is zero.	CO2	7.5
d)	Prove that $I_{rms} = I_m / \sqrt{2}$ for single phase AC circuit.	CO2	7.5

SECTION 'C'		Course Objecti ve	Marks
Q.N.3. Attempt any one part of the following:			
a)	Explain two wattmeter-method for the measurement of three phase AC power.  Three phasors: $X = 3 + j4$ , $Y = 3 + j0$ , $Z = 10 \angle -60^\circ$ Find: $\frac{YZ}{X}$	CO2	10
b)	Calculate the current in branch AB in given circuit. using Thevenin theorem.  	CO1	10
c)	Three similar coils each having a resistance of 50hm and an inductance of 0.02H are connected in delta to a 440V, 3-phase, 400V, and 50Hz supply. Calculate the line current and total power absorbed.	CO2	10

**Table 1: Mapping between COs and questions**  
(Number of COs may vary from course to course)

COs	Questions Numbers	Total Marks
CO1	1 (a, b, c), 2(a, b), 3(b)	28
CO2	1(d, e) 2(c, d) 3(a, c)	37