

SCHOOL OF ELECTRONICS ENGINEERING
CONTINUOUS ASSESSMENT TEST - II
FALL SEMESTER 2024-2025

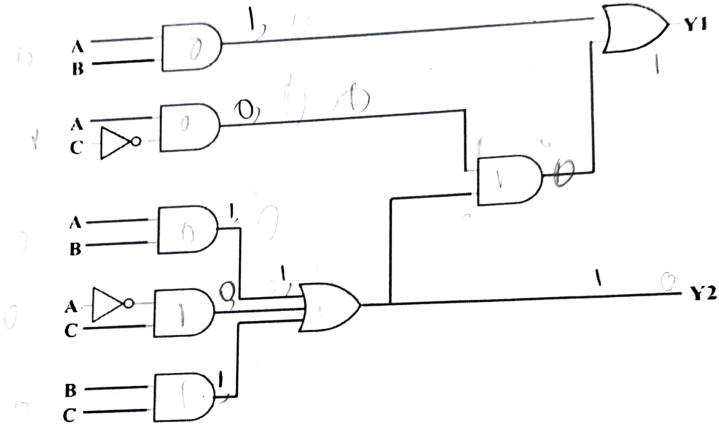
Programme Name & Branch : B.TECH. Computer Science and Engineering and Business Systems
Course Code and Course Name : EEE 1001 – Basic Electrical and Electronics Engineering
Faculty Name(s) : Dr. K.V.N. Kavitha & Mr. G. Rajesh
Class Number(s) : VL2024250108477 /VL2024250109155
Date of Examination : 17.10.24
Exam Duration : 90 minutes **Maximum Marks: 50**

General instruction(s):

- Answer All Questions
- M - Max mark; CO – Course Outcome; BL – Blooms Taxonomy Level (1 – Remember, 2 – Understand, 3 – Apply, 4 – Analyse, 5 – Evaluate, 6 – Create)
- Course Outcomes
CO2 - Analyze AC power circuits and networks, its measurement and safety concerns
CO4 - Design and implement various digital circuits

Q. No	Questions	M	CO	BL
1.	A 200 V, 100 Hz supply is connected in series with a $40\ \mu\text{F}$ capacitor and a coil with a resistance of $8\ \Omega$ and an inductance of 80 mH. Identify the current flowing, the phase difference between the supply voltage and the current, the voltage across the coil, the voltage across the capacitor. Also sketch the phasor diagram.	10	CO2	3
2.	Three identical coils, each with a resistance of $5\ \Omega$ and an inductance of 45 mH, are connected (a) in star and (b) in delta to a 415 V, 50 Hz, 3-phase supply. Identify (a) the line and phase voltages (b) the phase and line currents (c) resistive power (d) reactive power (e) power factor in both star and delta connection.	10	CO2	3
3.	Use the number base conversion method, (a) determine the value of base x , (i) $(687.25)_x = (2AF.4)_{16}$ (ii) $(195.48)_x = (625.22)_8$, (b) (iii) Convert $(2AC5.D)_{16}$ to Decimal, (iv) Convert $(237.4)_{10}$ to Binary. (v) Convert $(1101101.1011)_2$ to Octal	10	CO4	3

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4.	For the logic circuit shown in Fig. 1. Simplify the expression for Y1 and Y2 using Boolean Algebra. Also write the truth table for Y1 and Y2.  Fig. 1.	10	CO4	3
5.	Simplify the following minterms using K-Map and implement the reduced expression using NAND gates only. $Y = \sum m(0, 1, 2, 5, 8, 9, 10, 14, 15)$	10	CO4	4