Mahindra University Hyderabad

École Centrale School of Engineering

Minor-I Exam

SE23UCAM010

Program: B. Tech. Branch: CM Year: II Semester: II

Subject: Computer Organization (MA2211)

Date: 27/02/2025 Start Time: 10:00 AM

Time Duration: 1.5 Hours Max. Marks: 20

Instructions:

1) Answer all the questions.

2) All questions are self-explanatory; no clarification will be provided during the exam.

Course outcomes (COs)

CO 1: Design and implement basic logic circuits using logic gates.

CO 2: Perform arithmetic operations on integers and floating-point numbers.

CO 3: Understand the structure and usage of registers in a computer system.

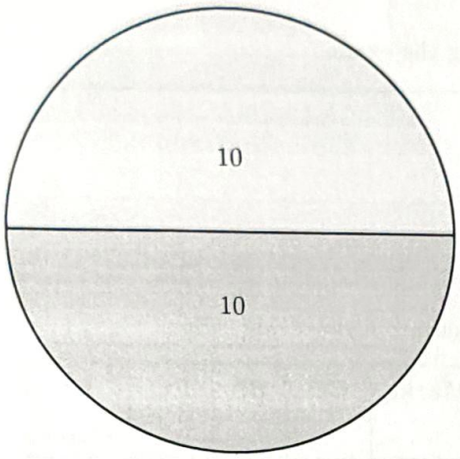
CO 4: Apply knowledge of computer organization to enhance programming and problem-solving skills.

Q.No.	Questions	Marks	CO	BL	PO	PI Code
1	Use a truth table to prove the following Boolean algebra expression: $x \cdot (y + z) = (x \cdot y) + (x \cdot z)$ Then, justify it using a Venn diagram.	5	CO1	L4	PO1	1.2.2
2	Consider the two Boolean functions: $f_1(x, y, z) = \overline{x}\overline{y}z + \overline{x}yz + x\overline{y}$ and $f_2(x, y, z) = x\overline{y} + \overline{x}z.$ Using a truth table, determine whether both functions are equal or not. Then, draw the logic circuit diagram for each function.	5	CO1	L4	PO1	1.2.2

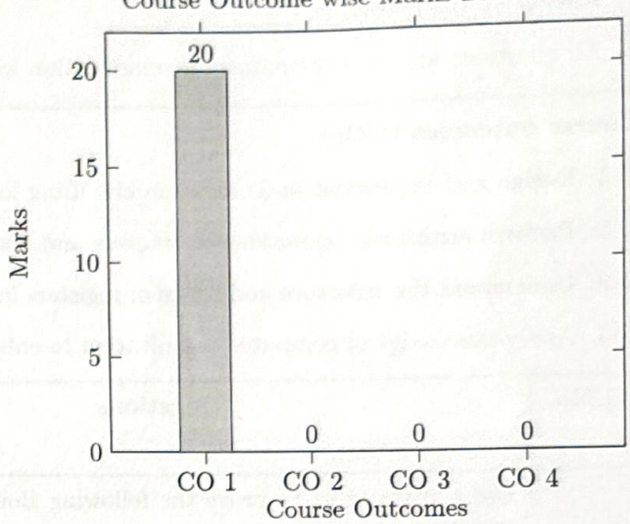
P.T.O.

Q.No.	Questions	Marks	CO	BL		
3	Express the Boolean function $f(x, y, z) = x + \overline{y}z$ in the sum of minterms form. Then, find its complement.	5	CO1	L3	PO1	1
4	Simplify the Boolean function $f(x, y, z, w) = \sum(0, 1, 2, 4, 5, 6, 8, 9, 12, 13, 14)$ using a four-variable Karnaugh map.	5	CO1	L3	PO1	1.2.2

Bloom's Level wise Marks Distribution



Course Outcome wise Marks Distribution



BL – Bloom's Taxonomy Levels:
1 – Remembering, 2 – Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 – Creating
CO – Course Outcomes
PO – Program Outcomes
PI Code – Performance Indicator Code

End of exam