

9 Lecture - CS302

Important Subjective

1. **What is Boolean algebra?**

Answer: Boolean algebra is a branch of mathematics that deals with logical operations and binary variables.

2. **What are the basic logical operations in Boolean algebra?**

Answer: The basic logical operations in Boolean algebra are AND, OR, and NOT.

3. **What is logic simplification?**

Answer: Logic simplification is the process of reducing the complexity of a logical expression or circuit by using laws of Boolean algebra and various simplification techniques.

4. **What is DeMorgan's law?**

Answer: DeMorgan's law states that the complement of the product of two variables is equal to the sum of the complements of the variables.

5. **What is a truth table?**

Answer: A truth table is a table that shows the output of a logical expression for all possible input combinations.

6. **What is a Karnaugh map?**

Answer: A Karnaugh map is a graphical tool used to simplify Boolean expressions by grouping adjacent cells in a truth table that have the same output value.

7. **What is a prime implicant?**

Answer: A prime implicant is a product term that cannot be simplified further by combining it with other product terms.

8. **What is the Quine-McCluskey algorithm?**

Answer: The Quine-McCluskey algorithm is a method used for logic simplification that involves finding all prime implicants of a Boolean expression and then selecting the minimum set of prime implicants that covers all the minterms.

9. **What is the difference between a NAND and an AND gate?**

Answer: The output of a NAND gate is the complement of the output of an AND gate.

10. **What is the output of a NOT gate when the input is 1?**

Answer: The output of a NOT gate when the input is 1 is 0.