

11 Lecture - CS302

Important Mcqs

1. In Karnaugh map, what is the maximum number of cells that can be combined to form a single term?
 - a. 4
 - b. 8
 - c. 16
 - d. 32

Answer: a. 4

2. Which of the following is an advantage of using Karnaugh maps for Boolean expression simplification?
 - a. They are easy to use for large numbers of variables
 - b. They always result in the most simplified expression
 - c. They provide a visual representation of the logical function
 - d. They do not require any knowledge of Boolean algebra

Answer: c. They provide a visual representation of the logical function

3. How many input variables are required for a 4x4 Karnaugh map?
 - a. 2
 - b. 3
 - c. 4
 - d. 5

Answer: b. 3

4. Which Boolean expression is equivalent to the simplified expression $(A+B)(A+C)$?
 - a. $A(B+C)$
 - b. $AB+AC$
 - c. $AB+C$
 - d. ABC

Answer: b. $AB+AC$

5. How many cells are in a 3-variable Karnaugh map?
 - a. 4
 - b. 8
 - c. 16
 - d. 32

Answer: b. 8

6. **Which Boolean algebraic operation is used to combine cells in a Karnaugh map?**
- a. AND
 - b. OR
 - c. NOT
 - d. XOR

Answer: b. OR

7. **Which of the following is true for a Boolean expression in its simplest form?**
- a. It is always unique
 - b. It always has the least number of literals
 - c. It is always in sum-of-products form
 - d. It always has the smallest possible truth table

Answer: a. It is always unique

8. **What is the minimum number of cells required to form a group in a Karnaugh map?**
- a. 1
 - b. 2
 - c. 3
 - d. 4

Answer: b. 2

9. **Which of the following is a limitation of Karnaugh maps for Boolean expression simplification?**
- a. They are only applicable for 2-variable expressions
 - b. They can result in redundant terms in the simplified expression
 - c. They are computationally intensive for large numbers of variables
 - d. They are unable to handle expressions with don't cares

Answer: c. They are computationally intensive for large numbers of variables

10. **Which Boolean expression is equivalent to the simplified expression $(A'+B)(A+C)$?**
- a. $AB+AC$
 - b. $A'B+AC$
 - c. $AB+C$
 - d. $A'B+C$

Answer: d. $A'B+C$