

# 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.  $A'B+C$