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