# **10 Lecture - CS302**

# **Important Mcqs**

### 1. What is a Karnaugh map?

- a) A tool used for digital circuit design
- b) A graphical tool used to simplify Boolean expressions
- c) A method used for logic simplification
- d) A tool used for computer programming

### Answer: b) A graphical tool used to simplify Boolean expressions.

# 2. What is the purpose of using a Karnaugh map in Boolean expression simplification?

- a) To identify redundant terms
- b) To group adjacent cells with the same output value
- c) To reduce the complexity of Boolean expressions
- d) All of the above

# Answer: d) All of the above.

### 3. How do you represent the complement of a variable in a Karnaugh map?

- a) By writing a bar over the variable
- b) By writing a prime symbol over the variable
- c) By writing a minus sign over the variable
- d) By writing a tilde over the variable

### Answer: a) By writing a bar over the variable.

# 4. What is a minterm in Boolean algebra?

- a) A product term that represents the output of a logical expression
- b) A sum term that represents the output of a logical expression
- c) A term that represents a logical operation
- d) A term that represents a binary variable

Answer: a) A product term that represents the output of a logical expression.

# 5. What is a maxterm in Boolean algebra?

- a) A product term that represents the output of a logical expression
- b) A sum term that represents the output of a logical expression
- c) A term that represents a logical operation
- d) A term that represents a binary variable

### Answer: b) A sum term that represents the output of a logical expression.

# 6. What is a don't-care condition in a Karnaugh map?

- a) A condition where the output value of a cell does not matter
- b) A condition where the input value of a variable does not matter

- c) A condition where a variable is always true
- d) A condition where a variable is always false

Answer: a) A condition where the output value of a cell does not matter.

#### 7. What is the purpose of a Karnaugh map in digital circuit design?

- a) To simplify Boolean expressions
- b) To identify redundant terms
- c) To optimize circuit design
- d) All of the above

#### Answer: d) All of the above.

#### 8. What is the output of an AND gate when both inputs are 1?

- a) 0
- b) 1
- c) Undefined
- d) Depends on the implementation

#### Answer: b) 1.

#### 9. What is the output of a NOT gate when the input is 0?

- a) 0
- b) 1
- c) Undefined
- d) Depends on the implementation

#### Answer: b) 1.

- 10. What is the difference between a sum term and a product term in Boolean algebra?a) A sum term represents the sum of binary variables, while a product term represents their product
  - b) A sum term represents their product, while a product term represents their sum
  - c) A sum term and a product term are the same thing
  - d) None of the above

Answer: a) A sum term represents the sum of binary variables, while a product term represents their product.