# 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 $\mathbf{0}$ ?
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.

