13 Lecture - CS302

Important Mcqs

1. **Which Boolean logic gate is typically used to detect odd numbers?**
   A) AND
   B) OR
   C) NOT
   D) XOR
   Answer: D (XOR)

2. **Which of the following is a prime number?**
   A) 4
   B) 5
   C) 6
   D) 8
   Answer: B (5)

3. **What is the output of an odd-prime number detector if the input is 2?**
   A) High
   B) Low
   C) Undefined
   D) Depends on the circuit design
   Answer: B (Low)

4. **What is the output of an odd-prime number detector if the input is 3?**
   A) High
   B) Low
   C) Undefined
   D) Depends on the circuit design
   Answer: A (High)

5. **Which of the following is a composite number?**
   A) 2
   B) 3
   C) 5
   D) 8
   Answer: D (8)

6. **Which of the following is a valid Boolean expression for detecting odd prime numbers?**
   A) A AND B
   B) A OR B
   C) NOT A OR B
   D) A XOR B
   Answer: D (A XOR B)

7. **Which of the following is a valid Boolean expression for detecting odd numbers?**
   A) A AND B

B) A OR B
C) NOT A OR B
D) A XOR B
Answer: D (A XOR B)

8. **Which of the following is a valid Boolean expression for detecting prime numbers?**
   A) A AND B
   B) A OR B
   C) NOT A OR B
   D) A XOR B
   Answer: C (NOT A OR B)

9. **How many inputs are required for an odd-prime number detector?**
   A) 1
   B) 2
   C) 3
   D) 4
   Answer: 1 (one input)

10. **How can the number of gates in an odd-prime number detector be reduced?**
    A) By increasing the number of inputs
    B) By using more complex gates
    C) By using simpler gates
    D) By increasing the number of outputs
    Answer: C (By using simpler gates)