

# 13 Lecture - CS302

## Important Subjective

1. **What is an odd-prime number detector?**

Answer: An odd-prime number detector is a circuit that takes a single input and determines if the input is both odd and prime.

2. **How does an odd-prime number detector work?**

Answer: An odd-prime number detector works by using Boolean logic gates to determine if the input is both odd and prime. The output of the circuit will be high if the input is both odd and prime, and low otherwise.

3. **What is a prime number?**

Answer: A prime number is a positive integer greater than 1 that has no positive integer divisors other than 1 and itself.

4. **What is an odd number?**

Answer: An odd number is an integer that is not divisible by 2.

5. **What is the advantage of using an odd-prime number detector?**

Answer: An odd-prime number detector is useful in many applications where it is necessary to quickly and accurately identify odd-prime numbers.

6. **What is the disadvantage of using an odd-prime number detector?**

Answer: The disadvantage of using an odd-prime number detector is that it requires a circuit with a large number of gates and can be expensive to implement.

7. **What are some common applications of odd-prime number detectors?**

Answer: Odd-prime number detectors are commonly used in cryptography, error detection and correction, and digital signal processing.

8. **What is the difference between a prime number and a composite number?**

Answer: A prime number is a positive integer greater than 1 that has no positive integer divisors other than 1 and itself, while a composite number is a positive integer that has at least one positive integer divisor other than 1 and itself.

9. **Can an even number be a prime number?**

Answer: No, an even number cannot be a prime number because it is divisible by 2.

10. **Can a prime number be an odd number?**

Answer: Yes, a prime number can be an odd number.