# 4 Lecture - CS302

# **Important Subjective**

#### 1. What is a number system?

Answer: A number system is a way to represent numerical values using symbols. Examples of number systems include decimal, binary, octal, and hexadecimal.

#### 2. What is binary code?

Answer: Binary code is a system of representing data using only two symbols, typically 0 and 1. Binary code is commonly used in digital electronics and computing.

 What is the difference between a digital signal and an analog signal? Answer: A digital signal is a discrete signal that only has specific, discrete values, such as 0 or 1. An analog signal is a continuous signal that can have any value within a certain range.

## 4. What is the purpose of a code in digital electronics?

Answer: Codes are used to represent information using symbols, such as binary codes for representing data in a computer. Codes can also be used for error detection and correction.

#### 5. What is an excess-3 code?

Answer: An excess-3 code is a binary code that adds 3 to the decimal value of a number before encoding it in binary. This code is used for BCD arithmetic.

## 6. What is the difference between BCD and binary codes?

Answer: BCD codes are a type of binary code that represents each decimal digit using a 4-bit binary code. Binary codes, on the other hand, can represent any numerical value using a combination of 0 and 1.

## 7. What is a Gray code?

Answer: A Gray code is a binary code in which only one bit changes between consecutive numbers. Gray codes are used in digital circuits for reducing the likelihood of errors during transitions between values.

## 8. What is the purpose of a parity bit in a code?

Answer: A parity bit is used for error detection in codes. The parity bit is set to either 0 or 1 depending on whether the number of 1 bits in the code is even or odd.

# 9. What is the purpose of a radix point in a number system?

Answer: A radix point is used to separate the integer part and the fractional part of a number in a number system. The radix point is typically represented by a decimal point in the decimal system, a binary point in the binary system, and so on.

## 10. What is the significance of the base of a number system?

Answer: The base of a number system determines the number of symbols used to represent a value. For example, the binary system has a base of 2 and uses only two symbols, 0 and 1, to represent numerical values.