# 18 Lecture - CS302

# **Important Subjective**

#### 1. What is a 2-input 4-bit multiplexer?

Answer: A 2-input 4-bit multiplexer is a digital logic circuit that has four data inputs and two selection inputs, and selects one of the four inputs based on the values of the selection inputs.

# 2. What is the purpose of a 2-input 4-bit multiplexer?

Answer: The purpose of a 2-input 4-bit multiplexer is to select one input from multiple inputs based on the values of the selection inputs, and to output the selected input.

### 3. How many data inputs does a 2-input 4-bit multiplexer have?

Answer: A 2-input 4-bit multiplexer has four data inputs.

## 4. How many selection inputs does a 2-input 4-bit multiplexer have?

Answer: A 2-input 4-bit multiplexer has two selection inputs.

# 5. What is the maximum number of inputs that a 2-input 4-bit multiplexer can select from?

Answer: A 2-input 4-bit multiplexer can select from a maximum of four inputs.

#### 6. How is the output of a 2-input 4-bit multiplexer determined?

Answer: The output of a 2-input 4-bit multiplexer is determined by the values of the selection inputs, which select one of the four data inputs to be output.

- 7. **What is the truth table for a 2-input 4-bit multiplexer?** Answer: The truth table for a 2-input 4-bit multiplexer has four rows and eight columns.
- 8. What is the advantage of using a 2-input 4-bit multiplexer in digital circuits? Answer: The advantage of using a 2-input 4-bit multiplexer in digital circuits is that it reduces circuit complexity by selecting one input from multiple inputs.

# 9. What are the typical applications of a 2-input 4-bit multiplexer?

Answer: The typical applications of a 2-input 4-bit multiplexer include signal routing, data compression, and address decoding.

#### 10. How is a 2-input 4-bit multiplexer different from a demultiplexer?

Answer: A 2-input 4-bit multiplexer selects one input from multiple inputs, while a demultiplexer selects one output from multiple outputs.