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.