

19 Lecture - CS302

Important Subjective

1. **How does a demultiplexer differ from a decoder?**

Answer: A demultiplexer has one input and multiple outputs, while a decoder has multiple inputs and one output. A demultiplexer is used to route one input signal to multiple output lines, while a decoder is used to convert a binary code to a corresponding output signal

2. **How many output lines does a 2-to-4 demultiplexer have?**

Answer: A 2-to-4 demultiplexer has four output lines.

3. **What is the function of the enable input in a demultiplexer?**

Answer: The enable input is used to enable or disable the demultiplexer. When the enable input is low, the demultiplexer is disabled and all output lines are low.

4. **What is the difference between a demultiplexer and a multiplexer?**

Answer: A demultiplexer routes one input signal to multiple output lines, while a multiplexer routes multiple input signals to one output line.

5. **What is the advantage of using a demultiplexer in a digital communication system?**

Answer: A demultiplexer can be used to separate a high-speed data stream into multiple lower-speed data streams, which can be processed by different devices or components.

6. **What is the function of the control lines in a demultiplexer?**

Answer: The control lines are used to select which output line the input signal is routed to.

7. **How is a demultiplexer implemented using basic logic gates?**

Answer: A demultiplexer can be implemented using AND gates and NOT gates. The control lines are used to enable the corresponding AND gates, which produce a high output when the input signal matches the desired output line

8. **What is the output of a demultiplexer when all control lines are high?**

Answer: The output of a demultiplexer is undefined when all control lines are high.

9. **How does a demultiplexer help in reducing signal interference in a communication system?**

Answer: A demultiplexer can separate different signals in a communication system, which helps to reduce signal interference and improve signal quality.

10. **How can a demultiplexer be used for address decoding in a memory device?**

Answer: A demultiplexer can be used to decode the address lines in a memory device, which helps to select the desired memory location for read or write operations. The number of output lines in the demultiplexer corresponds to the number of memory locations that can be addressed.