Assignment 9

Due on 2019-10-22, 23:59 IST.

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

1. A router to route two buses can be implemented using multiplexers, for example:
   - True
   - False
   Solution: False. Two buses can be multiplexed to one destination.
   Accepted Answer: False

2. Which of the following can initiate a bus transaction?
   - Bus Master
   - Bus Slave
   - Both master and slave
   - Neither master nor slave
   Solution: True. Both master and slave can initiate transactions.
   Accepted Answer: True

3. For a system with 3 computational nodes, you want to implement a point-to-point bus connecting all nodes. Assuming each link in the bus goes in only one direction, how many wires are needed?
   Solution: 6 wires because each node needs to communicate with every other node.
   Accepted Answer: 6

4. Which type of communication link consumes more power?
   - On-chip
   - Off-chip
   Solution: Off-chip. High-speed communication links consume more power.
   Accepted Answer: Off-chip

5. On which type of peripheral bus would a keyboard usually be connected?
   - High-speed bus
   - Low-speed bus
   Solution: Low-speed bus. Keyboard is a low-speed peripheral.
   Accepted Answer: Low-speed bus

6. On which type of peripheral bus would a graphics card usually be connected?
   - High-speed bus
   - Low-speed bus
   Accepted Answer: High-speed bus

7. For each of the following, indicate whether they would typically be considered as a Master or Slave unit on a bus
   a) CPU
   - Master
   - Slave
   Solution: Master. CPU is usually a master.
   Accepted Answer: Master

   b) Keyboard
   - Master
   - Slave
   Solution: Slave. Keyboard does not initiate transfers.
   Accepted Answer: Slave

   c) DMA controller
   - Master
   - Slave
   Solution: Slave. DMA controller typically initiates memory transfers instead of CPU.
   Accepted Answer: Slave