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## **Midterm Exam Questions**

- 1. Explain the function of the bus in a computer system.
- 2. Describe a scenario where the bus speed could become a bottleneck in a computer system. What are some possible solutions?
- 3. Describe the Von Neumann architecture and explain how it influences modern computer systems.
- 4. Compare and contrast the functions of system software and application software, providing examples of each.
- 5. You are tasked with installing a new operating system on a computer. List the steps you would take to ensure the operating system is installed correctly.
- 6. Explain the concept of the Turing machine and its significance in computer science.
- 7. A computer is running slowly even though the CPU usage is low. What other hardware components could be causing the issue, and how would you diagnose them?
- 8. Describe a situation where understanding the Neumann principle would be essential for solving a computer system problem.
- 9. Perform (111100) (1011) using 1's and 2's complement.
- 10. Convert the binary number (101101) to decimal.
- 11. Perform the binary subtraction of 10011 from 1101 using borrowing.
- 12. Perform the binary division 10110 ÷11.

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