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Midterm Exam Questions

- 1. Describe a scenario where the bus speed could become a bottleneck in a computer system. What are some possible solutions?
- 2. Describe the Von Neumann architecture and explain how it influences modern computer systems.
- 3. Compare and contrast the functions of system software and application software, providing examples of each.
- 4. 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.
- 5. Explain the concept of the Turing machine and its significance in computer science.
- 6. 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?
- 7. Perform (1011) (111100) using 1's and 2's complement.
- 8. Convert the binary number (101101) to decimal.
- 9. Perform the binary subtraction of 10011 from 1101 using borrowing.
- 10. Perform the binary division 10110 ÷11.

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