1. What is a key difference between Von Neumann and Harvard architecture?

a) Von Neumann architecture allows data and instructions to be fetched from the same memory, while Harvard architecture uses separate memory units for data and instructions.
b) Harvard architecture is only used in microcontrollers, while Von Neumann architecture is used in all types of processors.
c) Von Neumann architecture is more efficient in terms of memory utilization.
d) Harvard architecture does not support the execution of complex instructions.

Answer: a) Von Neumann architecture allows data and instructions to be fetched from the same memory, while Harvard architecture uses separate memory units for data and instructions.

Explanation: In Von Neumann architecture, both data and instructions are stored in the same memory space and accessed via the same bus, whereas Harvard architecture has separate memory units for data and instructions, allowing for simultaneous access to both.

2. Which type of processor architecture tends to have a simpler instruction set?

a) CISC
b) RISC
c) Von Neumann
d) Harvard

Answer: b) RISC

Explanation: Reduced Instruction Set Computing (RISC) architectures typically have a simpler instruction set compared to Complex Instruction Set Computing (CISC) architectures. RISC

processors aim to execute instructions quickly by using a smaller set of simple instructions.

3. What does CISC stand for?

a) Complex Instruction Set Computing
b) Concurrent Instruction Set Computing
c) Centralized Instruction Set Computing
d) Compact Instruction Set Computing

Answer: a) Complex Instruction Set Computing

Explanation: CISC stands for Complex Instruction Set Computing. CISC processors are designed to execute a large number of complex instructions, which can often be executed in a single clock cycle.

4. Which processor architecture is commonly used in microcontrollers?

a) Von Neumann
b) Harvard
c) RISC
d) CISC

Answer: b) Harvard

Explanation: Harvard architecture is commonly used in microcontrollers. It separates the memory for program instructions and data, allowing simultaneous access to both, which can enhance performance in embedded systems.

5. Which processor architecture tends to prioritize smaller and more efficient instruction sets?

a) Von Neumann

b) Harvard

c) CISC

d) RISC

Answer: d) RISC

Explanation: Reduced Instruction Set Computing (RISC) architectures prioritize smaller and more efficient instruction sets, aiming to execute instructions quickly by using simpler instructions.

6. Which of the following is an example of a CISC processor?

a) 8051

b) ARM

c) DSP

d) None of the above

Answer: a) 8051

Explanation: The 8051 microcontroller is an example of a Complex Instruction Set Computing (CISC) processor. It is widely used in embedded systems for its rich set of instructions.

7. Which processor architecture is commonly used in digital signal processing applications?

a) Von Neumann

b) Harvard

c) RISC

d) CISC

Answer: c) RISC

Explanation: Reduced Instruction Set Computing (RISC) architectures are commonly used in digital signal processing (DSP) applications due to their ability to efficiently execute repetitive mathematical operations.

8. Which architecture allows for simultaneous access to instruction and data memory?

a) Von Neumann

b) Harvard

c) RISC

d) CISC

Answer: b) Harvard

Explanation: Harvard architecture allows for simultaneous access to instruction and data memory by using separate memory units for program instructions and data.

9. Which type of processor architecture is known for its streamlined instruction set and pipelined execution?

a) Von Neumann

b) Harvard

c) RISC

d) CISC

Answer: c) RISC

Explanation: Reduced Instruction Set Computing (RISC) architectures are known for their streamlined instruction set and pipelined execution, which allows for faster processing of instructions.

10. Which processor architecture is commonly used in mobile devices and embedded systems due to its power efficiency?

a) Von Neumann
b) Harvard
c) RISC
d) CISC

Answer: c) RISC

Explanation: Reduced Instruction Set Computing (RISC) architectures are commonly used in mobile devices and embedded systems due to their power efficiency and performance advantages.