

1. What is a characteristic of a multiprocessor system?

- a) Increased power consumption
- b) Decreased scalability
- c) Enhanced parallel processing
- d) Reduced complexity

*Answer: c) Enhanced parallel processing*

In a multiprocessor system, multiple processors work concurrently on different tasks, thereby enhancing parallel processing capabilities.

2. What is the structure of multiprocessor-interprocessor arbitration?

- a) Master-slave
- b) Priority-based
- c) Random selection
- d) Token passing

*Answer: b) Priority-based*

In priority-based arbitration, processors are given different priority levels, and the one with the highest priority gains access to shared resources first.

3. Which mechanism is commonly used for inter-processor communication in a multiprocessor system?

- a) Message passing

- b) Shared memory
- c) Direct memory access
- d) Interrupts

*Answer: a) Message passing*

Message passing involves sending data between processors through a communication mechanism, often utilizing shared memory or specific communication channels.

4. What is a key aspect of memory management in a multiprocessor system?

- a) Increased latency
- b) Limited bandwidth
- c) Cache coherence
- d) Non-uniform memory access

*Answer: c) Cache coherence*

Cache coherence ensures that data stored in multiple caches across different processors remains consistent and up-to-date.

5. What concept is central to pipelining in computer architecture?

- a) Serial processing
- b) Parallel processing
- c) Instruction-level parallelism
- d) Data parallelism

*Answer: c) Instruction-level parallelism*

Pipelining involves breaking down instructions into smaller stages and executing them concurrently, exploiting instruction-level parallelism.

6. Which processing technique involves performing operations on entire arrays of data simultaneously?

- a) Vector processing
- b) Parallel processing
- c) Pipelining
- d) Serial processing

*Answer: a) Vector processing*

Vector processing allows operations to be performed simultaneously on entire arrays or vectors of data, optimizing throughput.

7. Which architecture tends to emphasize simpler instructions and fewer addressing modes?

- a) RISC
- b) CISC
- c) SIMD
- d) MIMD

*Answer: a) RISC*

Reduced Instruction Set Computer (RISC) architectures prioritize simplicity and efficiency,

typically featuring simpler instructions and fewer addressing modes.

8. What is a characteristic of a multicore processor?

- a) Limited parallelism
- b) Increased power consumption
- c) Improved scalability
- d) Reduced performance

*Answer: c) Improved scalability*

Multicore processors integrate multiple processor cores onto a single chip, enhancing parallelism and scalability for handling multiple tasks efficiently.

9. Which company is known for producing the Intel Core series of multicore processors?

- a) AMD
- b) Nvidia
- c) Intel
- d) Qualcomm

*Answer: c) Intel*

Intel is renowned for its Core series of multicore processors, which are widely used in various computing devices.

10. What is a key advantage of multicore processors over single-core processors?

- a) Reduced power consumption
- b) Enhanced clock speed
- c) Improved multitasking performance
- d) Decreased complexity

*Answer: c) Improved multitasking performance*

Multicore processors can execute multiple tasks concurrently across different cores, leading to improved multitasking performance compared to single-core processors.

11. Which type of processing architecture typically features a large number of general-purpose registers?

- a) RISC
- b) CISC
- c) SIMD
- d) MIMD

*Answer: a) RISC*

Reduced Instruction Set Computer (RISC) architectures commonly feature a large number of general-purpose registers, facilitating efficient execution of instructions.

12. In a multiprocessor system, what mechanism helps maintain data consistency across shared caches?

- a) Cache coherence protocol
- b) Interrupt handling

- c) Direct memory access
- d) Message passing

*Answer: a) Cache coherence protocol*

Cache coherence protocols ensure that data stored in different caches remains consistent by coordinating cache access and data updates.

13. Which processor design philosophy favors a larger number of simple instructions?

- a) RISC
- b) CISC
- c) SIMD
- d) MIMD

*Answer: a) RISC*

Reduced Instruction Set Computer (RISC) architectures prioritize simplicity and efficiency, typically featuring a larger number of simple instructions.

14. What type of processing architecture is designed to handle multiple instructions at the same time?

- a) SIMD
- b) MIMD
- c) SISD
- d) MISD

*Answer: a) SIMD*

Single Instruction, Multiple Data (SIMD) architectures execute the same instruction on multiple data elements simultaneously, thereby improving parallelism.

15. Which component is responsible for coordinating access to shared resources in a multiprocessor system?

- a) Cache controller
- b) Memory controller
- c) Arbiter
- d) Processor scheduler

*Answer: c) Arbiter*

An arbiter is responsible for coordinating access to shared resources, such as memory or I/O devices, among multiple processors in a multiprocessor system.

16. Which instruction set architecture tends to have a larger set of complex instructions?

- a) CISC
- b) RISC
- c) SIMD
- d) MIMD

*Answer: a) CISC*

Complex Instruction Set Computer (CISC) architectures typically feature a larger set of

complex instructions, aiming to reduce the number of instructions required to perform tasks.

17. Which company produces the Ryzen series of multicore processors?

- a) Nvidia
- b) AMD
- c) Intel
- d) Qualcomm

*Answer: b) AMD*

AMD is known for its Ryzen series of multicore processors, which offer high-performance computing capabilities for various applications.

18. What type of processing architecture allows multiple processors to execute different instructions on different data simultaneously?

- a) MIMD
- b) SIMD
- c) SISD
- d) MISD

*Answer: a) MIMD*

Multiple Instruction, Multiple Data (MIMD) architectures enable multiple processors to execute different instructions on different data simultaneously, facilitating parallel processing.

19. Which memory access pattern tends to suffer from non-uniform memory access (NUMA) in a multiprocessor system?

- a) Random access
- b) Sequential access
- c) Cyclic access
- d) Distributed access

*Answer: a) Random access*

Random memory access patterns can lead to non-uniform memory access (NUMA) issues in a multiprocessor system, where accessing remote memory locations incurs higher latency.

20. Which characteristic is typically associated with CISC architectures?

- a) Simplified instruction set
- b) Reduced instruction complexity
- c) Limited addressing modes
- d) Support for complex operations in single instructions

*Answer: d) Support for complex operations in single instructions*

Complex Instruction Set Computer (CISC) architectures often support complex operations, such as string manipulation or floating-point arithmetic, in single instructions, reducing the need for multiple instructions to accomplish tasks.

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