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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