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Marks 20.00/20.00

Grade 100.00 out of 100.00

Question 1

Correct

Mark 1.00 out of 1.00

The primary goal of cryptography as a security mechanism is to _____.

- ☐ a. Ensure message authenticity
- ☒ b. Provide confidentiality through encryption ✓
- ☐ c. Ensure data integrity
- ☐ d. Detect malware

Question 2

Correct

Mark 1.00 out of 1.00

What is the role of an interrupt in a device driver's operation?

- ☒ a. Notifies the CPU of device activity ✓
- ☐ b. Prevents CPU overloading
- ☐ c. Halts the device operation
- ☐ d. Handles data errors

Question 3

Correct

Mark 1.00 out of 1.00

Virtual memory is a technique used to _____.

- ☐ a. Manage user authentication
- ☒ b. Increase the size of memory available ✓
- ☐ c. Secure files
- ☐ d. Manage network connections

Question 4

Correct

Mark 1.00 out of 1.00

What is the primary benefit of virtualization in cloud computing?

- ☐ a. Reduce storage costs
- ☒ b. Reduce hardware requirements ✓
- ☐ c. Increase network speed
- ☐ d. Enhance user interface design

Question 5

Correct

Mark 1.00 out of 1.00

The role of "load balancing" in a distributed system is to _____.

- ☐ a. Share memory between machines
- ☒ b. Distribute workloads across multiple servers to optimize resource usage ✓
- ☐ c. Synchronize data between servers
- ☐ d. Improve the graphical user interface

Question 6

Correct

Mark 1.00 out of 1.00

In modern operating systems, what does the term "kernel" refer to?

- ☐ a. The user interface
- ☐ b. The hardware component
- ☒ c. The core part of the operating system that manages system resources ✓
- ☐ d. The application layer

Question 7

Correct

Mark 1.00 out of 1.00

A high-traffic server with multiple disk requests needs to optimize disk performance by minimizing seek time. Which algorithm would be best suited to avoid starvation of certain requests?

- ☒ a. C-Scan ✓
- ☐ b. FCFS (First-Come, First-Served)
- ☐ c. SSTF (Shortest Seek Time First)
- ☐ d. LOOK

Question 8

Correct

Mark 1.00 out of 1.00

Which type of malware modifies legitimate system files to conceal its presence?

- ☒ a. Rootkit ✓
- ☐ b. Virus
- ☐ c. Worm
- ☐ d. Adware

Question 9

Correct

Mark 1.00 out of 1.00

Choose the CORRECT statement describing the Optimal page replacement algorithm.

- ☐ a. Is used in modern operating systems
- ☒ b. Is theoretical and requires future knowledge of page requests ✓
- ☐ c. Replaces the oldest page
- ☐ d. Is the slowest algorithm

Question 10

Correct

Mark 1.00 out of 1.00

In the LOOK algorithm, the disk arm:

- ☒ a. Moves only as far as the last request before reversing ✓
- ☐ b. Moves to the beginning of the disk
- ☐ c. Continues moving in one direction regardless of requests
- ☐ d. Cycles through all sectors on the disk

Question 11

Correct

Mark 1.00 out of 1.00

How does segmentation handle memory management?

- ☐ a. It divides memory into equal-sized pages
- ☒ b. It divides memory into logical units based on program structure ✓
- ☐ c. It swaps data between physical and virtual memory
- ☐ d. It avoids fragmentation by combining memory blocks

Question 12

Correct

Mark 1.00 out of 1.00

The main advantage of using cloud computing for businesses is _____.

- ☐ a. Increased local server storage
- ☐ b. Centralized physical hardware
- ☒ c. On-demand scalability ✓
- ☐ d. Reduced user control over data

Question 13

Correct

Mark 1.00 out of 1.00

Which company developed the MS-DOS operating system?

- ☐ a. Apple
- ☒ b. Microsoft ✓
- ☐ c. IBM
- ☐ d. Linux Foundation

Question 14

Correct

Mark 1.00 out of 1.00

What is the purpose of a segment table in segmentation?

- ☐ a. To map virtual pages to physical frames
- ☒ b. To store base and limit addresses of segments ✓
- ☐ c. To store the size of each segment
- ☐ d. To maintain the size of each page

Question 15

Correct

Mark 1.00 out of 1.00

In a multithreaded process, what best describes a thread?

- ☐ a. An independent process that operates on its own.
- ☒ b. A lightweight unit of execution within a process. ✓
- ☐ c. A separate operating system instance.
- ☐ d. A module that handles I/O operations.

Question 16

Correct

Mark 1.00 out of 1.00

How does an I/O scheduler impact overall system performance in a high-load environment?

- ☒ a. By optimizing the sequence and priority of I/O requests ✓
- ☐ b. By increasing the memory allocation for I/O operations
- ☐ c. By reducing the frequency of interrupts
- ☐ d. By simplifying device driver interactions

Question 17

Correct

Mark 1.00 out of 1.00

In a segmented memory system, what happens if a process tries to access memory outside its segment limit?

- ☐ a. A page fault occurs
- ☒ b. A segmentation fault occurs ✓
- ☐ c. The memory is allocated dynamically
- ☐ d. The segment grows automatically

Question 18

Correct

Mark 1.00 out of 1.00

In a distributed system, what is the primary goal of fault tolerance?

- ☐ a. To minimize resource usage
- ☐ b. To reduce communication latency
- ☒ c. To ensure the system can recover from failures ✓
- ☐ d. To increase system complexity

Question 19

Correct

Mark 1.00 out of 1.00

In deadlock prevention, which technique ensures that resources are allocated only when processes can hold them without waiting?

- ☐ a. Preemption
- ☒ b. Resource Ordering ✓
- ☐ c. Safe State
- ☐ d. Maximum Resource Demand

Question 20

Correct

Mark 1.00 out of 1.00

Virtual memory allows an operating system to use disk space to simulate additional RAM.

- ☒ a. TRUE ✓
- ☐ b. FALSE