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| **Started on** | Thursday, 12 June 2025, 2:52 PM |
| **State** | Finished |
| **Completed on** | Thursday, 12 June 2025, 3:02 PM |
| **Time taken** | 10 mins 23 secs |
| **Marks** | 24.00/25.00 |
| **Grade** | **96.00** out of 100.00 |

**Question 1**

Complete

Mark 1.00 out of 1.00

Which of the following causes a memory leak?

- a. Page fault
- b. Stack overflow
- c. Double freeing a pointer
- d. Allocating memory without freeing it

**Question 2**

Complete

Mark 1.00 out of 1.00

Which of the following is a sign of stack overflow?

- a. High CPU usage
- b. Unfreed memory
- c. Infinite loop
- d. Function recursion without base case

**Question 3**

Complete

Mark 1.00 out of 1.00

The stack grows:

- a. Upward in memory
- b. Downward in memory
- c. Both
- d. Randomly

**Question 4**

Complete

Mark 1.00 out of 1.00

The OS swaps memory pages to disk to:

- a. Increase cache size
- b. Manage memory more efficiently
- c. Free CPU registers
- d. Improve network speed

**Question 5**

Complete

Mark 1.00 out of 1.00

What is the purpose of the `malloc()` function in C?

- a. Allocate static memory
- b. Allocate memory on heap
- c. Allocate memory on stack
- d. Free memory

**Question 6**

Complete

Mark 1.00 out of 1.00

Memory compaction is used to solve:

- a. Internal fragmentation
- b. Stack overflow
- c. Page fault
- d. External fragmentation

**Question 7**

Complete

Mark 1.00 out of 1.00

In virtual memory, what happens when a required page is not in memory?

- a. TLB Miss
- b. Page Fault
- c. Stack Overflow
- d. Segmentation Fault

**Question 8**

Complete

Mark 1.00 out of 1.00

Garbage collection is used in languages like Java to:

- a. Prevent memory leaks
- b. Reuse variables
- c. Automatically free unused memory
- d. Allocate memory faster

**Question 9**

Complete

Mark 1.00 out of 1.00

Copying garbage collectors work by:

- a. Copying reachable objects to a new memory area
- b. Swapping memory blocks
- c. Deleting unused files
- d. Freeing memory manually

**Question 10**

Complete

Mark 1.00 out of 1.00

Which memory is used for function call and local variable storage?

- a. Stack
- b. Cache
- c. ROM
- d. Heap

**Question 11**

Complete

Mark 0.00 out of 1.00

Which of the following helps avoid memory leaks in C++?

- a. Void pointers
- b. Global variables
- c. Raw pointers
- d. Smart pointers

**Question 12**

Complete

Mark 1.00 out of 1.00

Which data structure is used for memory page replacement algorithms?

- a. Queue
- b. Stack
- c. Hash Table
- d. Linked List

**Question 13**

Complete

Mark 1.00 out of 1.00

Which of the following best describes internal fragmentation?

- a. Unused memory within allocated blocks
- b. Cache misses
- c. Unused memory outside allocated blocks
- d. Memory leaks

**Question 14**

Complete

Mark 1.00 out of 1.00

Which of the following is NOT a valid memory allocation function in C/C++?

- a. realloc
- b. malloc
- c. alloc
- d. calloc

**Question 15**

Complete

Mark 1.00 out of 1.00

What does the operating system use to translate virtual addresses to physical addresses?

- a. Stack Pointer
- b. Memory Table
- c. Page Table
- d. Program Counter

**Question 16**

Complete

Mark 1.00 out of 1.00

A TLB (Translation Lookaside Buffer) improves:

- a. Virtual to physical address translation
- b. Swapping performance
- c. Stack speed
- d. Cache access time

**Question 17**

Complete

Mark 1.00 out of 1.00

Segmentation differs from paging because segmentation:

- a. Supports logical divisions like functions, arrays
- b. Has fixed-size blocks
- c. Is managed by hardware
- d. Uses TLB

**Question 18**

Complete

Mark 1.00 out of 1.00

What is a benefit of using dynamic memory allocation?

- a. Faster access time
- b. Less memory usage
- c. No fragmentation
- d. Flexibility at runtime

**Question 19**

Complete

Mark 1.00 out of 1.00

The heap memory is primarily used for:

- a. Dynamic memory allocation
- b. Code segment
- c. Static variables
- d. Temporary variables

**Question 20**

Complete

Mark 1.00 out of 1.00

What is a "dangling pointer"?

- a. A pointer to a null value
- b. A pointer to garbage value
- c. A pointer to the stack
- d. A pointer to a freed memory location

**Question 21**

Complete

Mark 1.00 out of 1.00

What happens if you `free()` an already freed pointer in C?

- a. Nothing
- b. Segmentation fault guaranteed
- c. Memory leak
- d. Undefined behavior (possible crash)

**Question 22**

Complete

Mark 1.00 out of 1.00

What kind of memory allocation is used for recursion?

- a. Heap
- b. Stack
- c. Swap space
- d. ROM

**Question 23**

Complete

Mark 1.00 out of 1.00

What happens when a program tries to access memory beyond its allocated space?

- a. Stack Overflow
- b. Deadlock
- c. Segmentation Fault
- d. Memory Leak

**Question 24**

Complete

Mark 1.00 out of 1.00

The least recently used (LRU) algorithm is a type of:

- a. Segmentation algorithm
- b. Garbage collection algorithm
- c. Page replacement algorithm
- d. Memory allocation

**Question 25**

Complete

Mark 1.00 out of 1.00

Which memory management technique allows non-contiguous memory allocation?

- a. Stack Allocation
- b. Both A and B
- c. Paging
- d. Segmentation