4_Quiz _L2

- Due Oct 30 at 2:15pm
- Points 10
- Questions 10
- Available until Oct 30 at 2:15pm
- Time Limit 15 Minutes

Instructions

This is a timed, closed book, closed notes quiz.
There are 10 questions.
Total time is 15 mins.
You can navigate front and back.
For code related questions, write the whole code in the area provided.
There should not be any other tab or window open on your laptop while you are attempting the quiz.
Offenders will get a 0.
You cannot use chatgpt or any other AI tool to obtain answers. Offenders will get a 0.
Good luck!!!

This quiz was locked Oct 30 at 2:15pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	12 minutes	7.67 out of 10

ⓘ Correct answers are hidden.

Score for this quiz: 7.67 out of 10
Submitted Oct 30 at 2:12pm
This attempt took 12 minutes.

Question 1
1 / 1 pts

Assuming you have a 14-bit address space and 3 segments (00-code segment, 01-heap segment, 11-stack segment). You are given a virtual address of 5200 which in binary is (01 0100 0101 0000). What will be the value of the offset?

- 1140
- 1100
- Cannot be determined.
- 1104

Question 2
1 / 1 pts

Consider the following C code.

```
#include <stdio.h>

void F1() {
-> int i=20;
   printf("%d", i);
}

int main() {
   int i = 10;
```

```
   int j = 20;
   F1();
   return 0;
}
```

The PC is currently at the instruction corresponding to the location marked with ->. The variable i in function F1 will be in which segment ?

- Cannot be determined
- Stack segment
- Code segment
- Heap segment

Question 3
1 / 1 pts

What are the responsibilities of the return-from-trap instruction? (Choose all that apply)

- Restore the kernel stack
- Returns control to the calling program
- Reduces the privilege from kernel mode to user mode
- Save the kernel stack

Question 4
1 / 1 pts

Which of the following instruction is required before a system call may be executed.

- int 0x21
- int 0x20
- trap
- return-from-trap

PartialQuestion 5
0.67 / 1 pts

The kernel stack stores the following. (Choose all that apply)

- Program counter
- Stack pointer
- Return address of caller
- Register values
- Frame pointer

IncorrectQuestion 6
0 / 1 pts

What will be the output from the following C program?

```
#include <stdio.h>
int num = 5;
int main(int argc, char* argv[])
{
   printf("%d ", num);
   int num = 10;
   printf("%d ", num);
   {
      int num = 20;
      printf("%d ", num);
   }
```

```
    int num = 30;
    printf(“%d ”, num);
    return 0;
}
```

- 5 10 20 30
- 5 10 30
- Error num is already declared and cannot be redeclared in the same scope.
- 5 10 20

Question 7
1 / 1 pts

What key advantage does the kernel stack provide in LDE?

- Permits unlimited process stack growth within kernel memory
- Allows user programs to access system-level operations directly
- Enables processes to manage memory without OS intervention
- Stores process states and return addresses when transitioning to kernel mode

Question 8
1 / 1 pts

In the context of dynamic memory allocation, why does the malloc function require extra space for headers?

- To align memory on a byte boundary
- To track the size of the allocated block for deallocation
- To store the function address for freeing memory
- To prevent external fragmentation

IncorrectQuestion 9
0 / 1 pts

What is the primary disadvantage of a binary buddy allocation strategy in memory management?

- Incompatibility with virtual memory systems
- High internal fragmentation for non-power-of-two requests
- Excessive overhead from coalescing
- Poor memory access speeds

Question 10
1 / 1 pts

When memory virtualization is implemented, where do pointers in a program point?

- System-generated addresses stored in the OS kernel
- Virtual addresses in the program's address space
- Hardware-defined memory locations
- Physical memory addresses

Quiz Score: 7.67 out of 10