Lab 4 (50 points)

1. Please fill up the below table with your correct answer and then submit this file to “Lab 4” assignment

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| --- | --- | --- | --- |
| **Multiple Choice**  **Questions** | **Answers**  **Multiple Choice**  **Questions** | **Multiple Choice**  **Questions** | **Answers**  **Multiple Choice**  **Questions** |
| 1 | A | 14 | False |
| 2 | D | 15 | False |
| 3 | C | 16 | True |
| 4 | B | 17 | False |
| 5 | B | 18 | True |
| 6 | D | 19 | False |
| 7 | D | 20 | False |
| 8 | True | 21 | True |
| 9 | True | 22 | True |
| 10 | False | 23 | False |
| 11 | True | 24 | False |
| 12 | False | 25 | D |
| 13 | True |  |  |

1. In 32-bit mode, aside from the stack pointer (ESP), what other register points to variables on

the stack?

1. EBP
2. EIP
3. EAX
4. EDI
5. Which flag is set when the result of an *unsigned* arithmetic operation is too large to fit into

the destination?

1. Zero Flag
2. Aux Carry
3. Overflow Flag
4. Carry Flag
5. Which flag is set when the result of a *signed* arithmetic operation is either too large or too

small to fit into the destination?

1. Zero Flag
2. Sign Flag
3. Overflow Flag
4. Carry Flag
5. Which flag is set when an arithmetic or logical operation generates a negative result?
6. Zero Flag
7. Sign Flag
8. Overflow Flag
9. Carry Flag
10. Which part of the CPU performs floating-point arithmetic?
11. ALU
12. Floating-point unit
13. Data Bus
14. Control Bus
15. (DELETE)On a 32-bit processor, how many bits are contained in each floating-point data register?
16. 32 bits
17. 48 bits
18. 64 bits
19. 80 bits
20. At which level(s) can an assembly language program manipulate input/output?
21. Hardware
22. BIOS
23. OS
24. Hardware, BIOS, and OS

*True/False*

1. When a register operand size is 32 bits and the REX prefix is used, the R8D

register is available for programs to use.

True

False

1. The x86-64 instruction set is backward-compatible with the x86 instruction set.

True

False

1. In current 64-bit chip implementations, all 64 bits are used for addressing.

True

False

1. The Itanium instruction set is completely different from the x86 instruction set.

True

False

1. Static RAM is usually less expensive than dynamic RAM.

True

False

1. The 64-bit RDI register is available when the REX prefix is used.

True

False

1. In native 64-bit mode, you can use 16-bit real mode, but not the virtual-8086

mode.

True

False

1. The x86-64 processors have 4 more general-purpose registers than the x86

processors.

True

False

1. The 64-bit version of Microsoft Windows does not support virtual-8086 mode.

True

False

1. DRAM can only be erased using ultraviolet light.

True

False

1. In 64-bit mode, you can use up to eight floating-point registers.

True

False

1. A bus is a plastic cable that is attached to the motherboard at both ends, but

does not sit directly on the motherboard.

True

False

1. CMOS RAM is the same as static RAM, meaning that it holds its value without

any extra power or refresh cycles.

True

False

1. PCI connectors are used for graphics cards and sound cards.

True

False

1. The 8259A is a controller that handles external interrupts from hardware

devices.

True

False

1. The acronym PCI stands for *programmable component interface*.

True

False

1. VRAM stands for virtual random-access memory.

True

False

1. What could register store?
2. data
3. Operands
4. Memory address
5. Data and memory address
6. All of the above