- [ ] 2.1.5 Section Review, Questions 1,2,3,4 and 5

1. The central processor unit (CPU) contains registers and what other basic elements?

It also contains the clock, control unit and arithmetic logic unit.

2. The central processor unit is connected to the rest of the computer system using what three buses?

Data, control, and address buses.

3. Why does memory access take more machine cycles than register access?

Information in memory has to be copied onto the CPU beforehand.

4. What are the three basic steps in the instruction execution cycle?

Fetch, decode, and execute.

5. Which two additional steps are required in the instruction execution cycle when a memory operand is used?

Fetch the operand and store the result.

- [ ] 2.4.3 Section Review, Question 5

5. What is the purpose of the 8259A PIC controller?

To handle interruptions that tell the CPU to handle a certain task immediately.

- [ ] 2.5.2 Section Review, Questions 1, 3, 4, and 5

1. Of the four levels of input/output in a computer system, which is the most universal and portable?

Level three.

3. Why are device drivers necessary, given that the BIOS already has code that communicates with the computer’s hardware?

To provide code that is specific to the hardware so as to allow for easier use of the piece of hardware.

4. In the example regarding displaying a string of characters, which level exists between the operating system and the video controller card?

Level 1, the bios subroutine that send the character to the hardware port.

5. Is it likely that the BIOS for a computer running MS-Windows would be different from that used by a computer running Linux?

It would depend on the hardware.

- [ ] 2.8 Review Question 7, 8, 9, 10, 12, 19, 20, 25, and 26

7. Which part of the CPU performs floating-point arithmetic?

The Floating-Point Unit.

8. On a 32-bit processor, how many bits are contained in each floating-point data register?

48 bits.

9. *(True/False):* The x86-64 instruction set is backward-compatible with the x86 instruction set.

True.

10. *(True/False):* In current 64-bit chip implementations, all 64 bits are used for addressing.

False

12. *(True/False):* Static RAM is usually less expensive than dynamic RAM.

False

19. *(True/False):* A bus is a plastic cable that is attached to the motherboard at both ends, but does not sit directly on the motherboard.

False

20. *(True/False):* CMOS RAM is the same as static RAM, meaning that it holds its value without any extra power or refresh cycles.

False

25. At which level(s) can an assembly language program manipulate input/output?

All four levels (from 0 to 3)

26. Why do game programs often send their sound output directly to the sound card’s hardware ports?

Because it is faster.