

CS 1313 010 Spring 2018 Homework #2

Quiz to be held in class Monday January 29 2018 9:30-9:45am

1. **WHAT** are the three major categories of hardware that computers typically have?
 - (a)
 - (b)
 - (c)

2. **WHAT** are the two categories of storage that computers typically have?
 - (a)
 - (b)

3. **WHAT** are the two categories of I/O devices that computers typically have?
 - (a)
 - (b)

4. **NAME AND DESCRIBE** each of the three components of a Central Processing Unit.
 - (a)
 - (b)
 - (c)

5. In the word **MULTICORE**, what does “core” refer to?

6. **NAME TWO DIFFERENCES** between primary storage and secondary storage.
 - (a)
 - (b)

7. **WHAT** are the two categories of primary storage that computers typically have?
 - (a)
 - (b)

8. **NAME TWO THINGS** that every main memory location has.
 - (a)
 - (b)

9. NAME TWO DIFFERENCES between main memory and cache.

(a)

(b)

10. WHY do computers have cache storage?

11. When data and instructions reside in the following kinds of storage, WHEN are they expected to be used?

(a) Registers

(b) Cache

(c) Main memory

(d) Secondary storage

12. NAME TWO DIFFERENCES between magnetic media and optical media.

(a)

(b)

13. WHY are floppy disks so expensive per MB, compared to CD-RWs and DVD-RWs?

14. NAME TWO EXAMPLES of magnetic secondary storage media, and give an advantage and a disadvantage of each.

(a)

Advantage:

Disadvantage:

(b)

Advantage:

Disadvantage:

15. **NAME TWO EXAMPLES** of optical secondary storage media, and give an advantage and a disadvantage of each.

(a)

Advantage:

Disadvantage:

(b)

Advantage:

Disadvantage:

16. **WHAT** is the **SPEED** in MB/sec, the **MAXIMUM SIZE** in GB and the **PRICE** per MB of the following storage media on a current PC?

(a) cache

(b) RAM

(c) hard disk

(d) CD-RW

(e) DVD-RW

(f) floppy disk

17. **WHAT** does the term **I/O** stand for?

18. **WHAT IS THE DIFFERENCE** between an input device and an output device?

19. **NAME** three input devices (you are not limited to the ones listed in the lecture notes, but your choices must fit the definition).

(a)

(b)

(c)

20. NAME three output devices (you are not limited to the ones listed in the lecture notes, but your choices must fit the definition).

(a)

(b)

(c)

21. NAME a device that does **BOTH** input and output (you are not limited to the ones listed in the lecture notes, but your choice must fit the definition).

22. The word “bit” is a contraction of WHAT PHRASE?
23. HOW MANY different possible values can an individual bit have?
24. HOW MANY different possible values can a set of 8 bits have?
25. NAME TWO DIFFERENCES between a bit and a byte.
- (a)
 - (b)
26. EXPRESS the approximate number of bytes in each of these to the nearest power of 10 (that is, as 10^x for the appropriate value of x):
- (a) kilobyte
 - (b) megabyte
 - (c) gigabyte
 - (d) terabyte
 - (e) petabyte
 - (f) exabyte
 - (g) zettabyte
 - (h) yottabyte
27. 2^{10} is approximately 10 to what power?
28. 2^{20} is approximately 10 to what power?
29. 2^{30} is approximately 10 to what power?
30. 2^{40} is approximately 10 to what power?

31. What does Moore's Law tell us?

32. Based on Moore's Law, and using 2 years as the doubling period, approximately HOW MUCH FASTER will computers be in 2078 than they are today?

33. Based on Moore's Law, and using 2 years as the doubling period, approximately HOW MUCH FASTER will computers be in 2098 than they are today?

34. **Unix Questions:** Give the Unix commands to accomplish the following tasks.
- (a) **CREATE A COPY** of an existing file named `whoopdedoo.txt` that is in your current working directory, so that the copy is named `tapioca.txt` and is also in your current working directory.
 - (b) **EDIT** an existing text file named `want_editing.txt` that is in your current working directory.
 - (c) **EDIT** a non-existent text file named `want_editing_too.txt` that will be in your current working directory.
 - (d) **MAKE** an executable named `my_program` from a C source file named `my_program.c` that are both in your current working directory. (Assume that an appropriate makefile entry is already in your makefile.)
 - (e) **EXECUTE** (that is, run) a program named `this_is_it` that is in your current working directory.

If you use **ANY** resources other than Dr. Neeman, the TAs (Borah, Mirza, Narasimhan, Sadri, Zhu), the course textbook or the materials posted on the course webpage, you **MUST** reference them on the quiz. **THIS INCLUDES CLASSMATES, FRIENDS, PROFESSORS, ONLINE RESOURCES, ETC.**