

INFO 102 Spring 2026 Quiz 1

Name: _____

NetID: _____

Each question has a box where you should clearly write your answer. If options are listed with letters, put the letter you chose in the box; otherwise put the word or number in the box.

Question 1: Suppose I have a character encoding that uses **6** bits per character. How many characters can it represent?

64

Question 2: Which is larger: **17** or **0x17**?

0x17

Question 3: Convert this number to decimal: **0b10101**

21

Question 4: Convert this number to binary: **0xA51**

1010 0101 0001

Question 5: The following truth table is for **what operation**? Put its name (ADD, AND, MUX, NOT, OR, XOR) in the box:

A	B	XOR
0	0	0
0	1	1
1	0	1
1	1	0

Question 6: Which is larger: **32GB** or **32MB**?

32GB

Question 7: Which of ALU, CPU, HDD, RAM, or SSD **performs multiplication**? If several do, pick the most specific/focussed answer.

ALU (½ for CPU)

Question 8: Which of these seems most likely to work well?

- A. A **decompiler** that deduces the input to a compiler from its output or behavior.
- B. A **disassembler** that deduces the input to an assembler from its output or behavior.
- C. An **uninterpreter** that deduces the input to an interpreter from its output or behavior.

B

Question 9: Which of these **names data** in a program?

- A. Function
- B. Repetition
- C. Selection
- D. Variable

D

Question 10: Which of these is also called a **loop**?

- A. Function
- B. Repetition
- C. Selection
- D. Variable

B

Question 11: Which of the following is a valid reason to choose **C** over Java, Python, and R?

- A. Efficiency: I need the program to run as fast as possible.
- B. Programmer productivity: I want the program soon.
- C. Program scale: this is a many-developer multi-year project.
- D. Security: I don't want to be hacked

A

Question 12: Which of the following is the best example of **data** (as opposed to information or data type)?

- A. ASCII, a mapping between letters and bytes.
- B. The byte 0x41, which is an upper-case A in ASCII.
- C. The letter A (or a) in either case.
- D. The upper-case letter A.

B (½ for D)

Question 13: CS 233 spends 4 months explaining processors but INFO 102 does so in one day by being more abstract. What form of abstraction is this?

- A. Detail removal
- B. Generalization

(question dropped)

Question 14: If we discover that **P = NP**, that would suggest that

- A. Some exponential-time algorithms would become faster.
- B. Some intractable problems would become tractable.
- C. Some undecidable problems would become decidable.

B

Question 15: **Heuristic** are often used to work around

- A. Intractable problems
- B. Undecidable problems

A

Question 16: Put the following algorithm runtimes in order, from fastest to slowest on large inputs, by listing letters in the box. For example, if the order shown below is also fastest-to-slowest you'd answer "A B C D E"

- A. Constant
- B. Exponential
- C. Linear
- D. Logarithmic
- E. Quadratic

A D C E B
(½ if four of the five in correct order)