

# Quiz 10

## The Art of Computer Programming

12 January 2026

Full name: .....

You have 10 minutes to answer this quiz, directly on this sheet of paper. No electronic devices or material of any kind is allowed. Do not forget to add your name above. Every question amounts to 2 points; the quiz is graded out of 10 points.

### Questions

**Q1.** Circle the correct statement about **functional vs generic programming**:

- a. Functional programming abstracts over types, while generic programming abstracts over behavior.
- b. Generic programming and functional programming solve exactly the same problem.
- c. Generic programming relies exclusively on runtime type checks.
- d. Functional programming treats functions as values that can be passed and returned.

**Q2. Higher-order functions.** Which of the following best describes a *higher-order function*?

- a. A function that takes another function as argument or returns a function.
- b. A function that modifies a global variable.
- c. A function that uses recursion.
- d. A function that operates only on numbers.

**Q3. Python callbacks and sorting.** Consider the following Python code:

```
names = ["Alice", "bob", "CHARLES"]
names.sort(key=lambda s: s.lower())
print(names)
```

What is printed?

- a. ["Alice", "bob", "CHARLES"]
- b. ["bob", "Alice", "CHARLES"]
- c. ["Alice", "CHARLES", "bob"]
- d. ["CHARLES", "Alice", "bob"]

**Q4. Closures.** In one or two sentences, explain what a *closure* is and what it captures.

**Q5. Generic programming across languages.** For each of the following languages, indicate (with one key word or short phrase) the main mechanism it uses for *generic programming*:

**Python** .....

**C** .....

**C++** .....