

EXAM
Object-Oriented Programming in C++

EX 1: (10 pts)

Choose the correct answer.

- 1) Which of the following best describes a class in C++?
 - a) A blueprint for creating objects
 - b) A data structure for arrays
 - c) A template for functions
 - d) A library for input and output

- 2) What is an object in C++?
 - a) A variable holding a class
 - b) An instance of a class
 - c) A pointer to a class
 - d) A function inside a class

- 3) What is the purpose of a constructor in a class?
 - a) To define functions
 - b) To initialize objects
 - c) To destroy objects
 - d) To handle exceptions

- 4) Which of the following is NOT a feature of object-oriented programming?
 - a) Encapsulation
 - b) Abstraction
 - c) Iteration
 - d) Polymorphism

- 5) What does the private access specifier do in a class?
 - a) Makes members accessible only within the same class
 - b) Makes members accessible from anywhere
 - c) Makes members accessible to derived classes
 - d) Makes members accessible within the same namespace

- 6) What is the correct syntax for creating an object of a class in C++?
 - a) className obj();
 - b) className obj;
 - c) object className;
 - d) obj = className();

- 7) Which concept allows the same function name to perform different tasks in a class?
 - a) Inheritance
 - b) Abstraction
 - c) Overloading
 - d) Polymorphism

- 8) What is a destructor in C++?

- a) A function that creates an object
- b) A function that initializes an object
- c) A function that cleans up resources before an object is destroyed
- d) A function that is called when an exception is thrown

9) What is the correct way to pass a pointer to a function in C++?

- a) void func(*int ptr);
- b) void func(int *ptr);
- c) void func(&int ptr);
- d) void func(int ptr*);

10) What will the following code output?

```
void updateValue(int &ref) {
    ref *= 2;}
int main() {
    int num = 5;
    updateValue(num);
    cout << num;
    return 0;}
```

- a) 5
- b) 10
- c) 15
- d) Compilation error

EX 2: (10 pts)

- 1) Design a class called Book with private attributes title (string), author (string), price (float) and stock (int).
- 2) Define a Default Constructor which Initializes all attributes to default values (empty strings for title and author, 0 for price, and 0 for stock).
- 3) Define a Parameterized Constructor which Initializes the title, author, price, and stock with given values.
- 4) Define a destructor which should display a message when an object is destroyed..
- 5) Define a Member Functions displayInfo()to display the book's information (title, author, price, stock).
- 6) Add a method updatePrice(float newPrice)to update the price of the book.
- 7) Add another method updateStock(int newStock)to update the stock of the book.
- 8) Create two objects of class Book using the default constructor and the Parameterized constructor respectively.
- 9) Update the price and the stock of the second object.
- 10) Display the two books information.