



## Model Answer

Choose the correct choice:

1. What is the purpose of constructors and destructors in a class in C++?

- a) Constructors clean up resources used by the object, while destructors initialize objects of the class
- b) Constructors initialize objects of the class, while destructors clean up resources used by the object**
- c) Constructors and destructors are not necessary in a class
- d) Constructors and destructors are used to declare private members of a class

2. What is the output of the following code snippet?

```
struct Person {  
    int age;  
    string name;  
};
```

```
Person p = {25, "John"};  
Person *ptr = &p;  
cout << *ptr.name;
```

- a) 25                      b) John                      **c) Compilation error**                      d) Runtime error

3. What is the output of the following code snippet?

```
int arr[] = {1, 2, 3};  
int *ptr = arr + 1;  
cout << *ptr;
```

- a) 1                      **b) 2**                      c) 3                      d) Compilation error

4. Which of the following statements is not true about classes and structs in C++?

- a) Classes and structs can have data members.
- b) Structs can have data members of different data types.
- c) Classes and structs are identical except for the default access level of their members.
- d) Classes and structs are built-in data types in C++.

5. What is the output of the following code snippet?

```
struct Point {  
    int x, y;  
};  
  
void print(Point *p) {  
    cout << p.x << ", " << p.y << endl;  
}
```

```
Point p = {3, 4};  
print(p);
```

- a) 3, 4                      b) 4, 3                      c) Compilation error                      d) Runtime error

6. What will be the output of the following code snippet?

```
int main() {  
    int x = 5;  
    int *ptr;  
    cout << ptr << endl;  
    return 0;  
}
```

- a) Memory address of `x`                      b) NULL                      c) Garbage value                      d) Compilation error

7. What will be the output of the following code snippet?

```
int *p = new int[10];  
cout << sizeof(p) << endl;
```

- a) 40                      b) 8                      c) 4                      d) can't determine

8. What will be the output of the following code snippet?

```
class Rectangle {
private:
    int length;
    int breadth;
public:
    Rectangle() {
        length = 1;
        breadth = 5;
    }
    Rectangle(int l=1, int b=1) {
        length = l;
        breadth = b;
    }
    int area() {
        return length * breadth;
    }
};
```

```
int main() {
    Rectangle r1(5, 10), r2;
    Rectangle *ptr = &r1;
    cout << ptr->area() <<" ";
    ptr = &r2;
    cout << ptr->area() <<endl;
    return 0;
}
```

- a) 50 5                      b) 5 50                      c) 50 50                      d) None of the above

9. Which of the following statements is true about the new operator in C++?

- a) The new operator returns a pointer to the allocated memory.
- b) The new operator can only be used with built-in data types.
- c) The new operator automatically initializes the allocated memory to zero.
- d) The new operator frees the allocated memory when the program terminates.

10. How can a function return different return types in C++? choose carefully.

- a) using arrays.
- b) using pointers.
- c) using structs.
- d) using classes.

Best wishes