Week-4: Assignment-4

Due on 2018-09-13, 23:59 IST.

As per our records you have not submitted this assignment.

1) Question 1

Identify the INCORRECT statement/s about the static member function of a class.

- a) Static member functions do not have this pointer.
- b) A static member function cannot be declared const, volatile, or const volatile.
- c) A static member function cannot invoke non-static member functions but can access non-static data members.
- d) A static member function can be invoked using class name.

No, the answer is incorrect.
Score: 0
Accepted Answers:
- c) A static member function cannot invoke non-static member functions but can access non-static data members

2) Question 2

A friend function violates which feature/s of Object Oriented Programming (OOP)?

- a) Data hiding
- b) Data abstraction
- c) Polymorphism
- d) Data encapsulation

No, the answer is incorrect.
Score: 0
Accepted Answers:
- a) Data hiding
4) **Question 4**

Consider the following code snippet. Fill the blank so that `search()` method of `LinkedList` class can access private data of `Node` class.

```cpp
class Node {
    private:
        int key;
        Node *next;
        /* Other members of Node Class */

        int LinkedList::search();
};
```

Note: Write the answer in the given space below. Don't add any extra space before or after the answer. The answer is case sensitive.

No, the answer is incorrect.

Score: 0

Accepted Answers:

1) `friend`
Question 5

Consider the code segment below. Identify the correct statement inside `main()` that may used to set 10 to `A::a`.

```cpp
// .......
class A {
    static int a;
    public:
        static void init(int);
        // .......
};
int A::a;
void A::init(int i) { a = i; }
// .......

int main() {
    int x = 10;
    A::a = x;    // statement-1
    A::a = 10    // statement-2
    A::init(10); // statement-3
    // .......
}
```

- [ ] a) statement-1
- [ ] b) statement-2
- [ ] c) statement-3
- [ ] d) All of the above

**No, the answer is incorrect.**

**Score:** 0

**Accepted Answers:**

c) statement-3

6)
Question 6

What is the output of the following program?  

```
#include <iostream>
using namespace std;

class Sample {
    static int x;
    public:
        void g() { x = 1; }
        void p() {
            x = x + x;
            cout << x << " ";
        }
    
};

int Sample::x = 0;

int main() {
    Sample s1, s2, s3, s4, s5;

    s1.g(); s2.g(); s3.g(); s4.g(); s5.g();
    s1.p(); s2.p(); s3.p(); s4.p(); s5.p();
    return 0;
}
```

- a) 2 2 2 2
- b) 2 4 8 16 32
- c) 1 2 3 4 5
- d) 2 4 6 8 10

No, the answer is incorrect.

Score: 0

Accepted Answers:
- b) 2 4 8 16 32

1 point
Question 7

What is the output of the following program?

```cpp
#include <iostream>
using namespace std;

class CIA {
  public:
    void print() { 
      cout << "x= " << x << " y= " << y << "\n";
    }
    CIA operator+(const CIA& c) {
      CIA tmp(x + c.x, y + c.y);
      return tmp;
    }
  private:
    const int x; int y;
};

CIA CIA::operator+(const CIA& c) {
  CIA tmp(x + c.x, y + c.y);
  return tmp;
}

int main() {
  CIA c1(4, 3);
  CIA c2(6, 7);
  CIA result = c1 + c2;
  result.print();
  return 0;
}
```

a) Compilation error as data members are const
b) x= 10 y= 10
c) Compilation error as no copy constructor has been defined
d) The output is indeterminate

No, the answer is incorrect.
Score: 0
Accepted Answers:
b) x= 10 y= 10

1 point
Question 8

Choose the correct function header to fill the blank

```cpp
#include <iostream>
using namespace std;

class Complex {
    double re, im;
    public:
        explicit Complex(double r = 0, double i = 0) : re(r), im(i) { }
        void disp() { cout << re << " + " << im << "i" << endl; }
        friend Complex operator+(const Complex &a, const Complex &b) {
            return Complex(a.re + b.re, a.im + b.im);
        }
        friend Complex operator+(const Complex &a, double d) {
            Complex b(d);
            return a + b;
        }

       {return a + b;}
};

int main() {
    Complex d1(2.5, 3.2), d2(1.6, 3.3), d3;
    
d3 = d1 + d2; d3.disp();
    d3 = d1 + 6.2; d3.disp();
    d3 = 4.2 + d2; d3.disp();

    return 0;
}
```

Options:
- a) friend Complex operator+(double d, const Complex &a)
- b) friend Complex operator+(const Complex &b, double d)
- c) friend Complex operator+(double b, double d)
- d) friend Complex operator+(double d, const Complex &b)

No, the answer is incorrect.

Score: 0

Accepted Answers:
- d) friend Complex operator+(double d, const Complex &b)