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Unit 5 - Week 3

Assignment 3

The due date for submitting this assignment has passed. **Due on 2020-10-07, 23:59 IST.**

Assignment submitted on 2020-10-05, 10:06 IST

1) Consider the program below. **2 points**

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

class Sample {
    string name;
public:
    Sample() {
        cout << "s" << " ";
    }
    Sample(string s) : name(s) {
        cout << name << " ";
    }
};

int main() {
    Sample s1;    // LINE-1
    Sample *s2 = new Sample("s2");
    Sample *s3;

    new Sample("s4");

    return 0;
}
```

What will be the output?

a) compilation error: at LINE-1

b) s s2 s s4

c) s2 s s4

d) s s2 s4

Yes, the answer is correct.
Score: 2

Accepted Answers:
d) s s2 s4

2) Consider the program below. ***2 points***

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

int i = 0;

class myClass {
public:
    myClass() { i = 1; }
    ~myClass() { i = 5; }
};

void f() {
    myClass m;
}

int fun() {
    i = 3;
    f();

    return i++;
}

int main() {
    cout << fun() << " ";
    cout << i << endl;

    return 0;
}
```

What will be the output?

- a) 1 5
- b) 3 4
- c) 5 6
- d) 3 5

Yes, the answer is correct.
Score: 2
Accepted Answers:
c) 5 6

3) Consider the program below. **2 points**

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

class Data {
    int x;
    void fun1() {
        cout << "inside fun1";
    }
public:
    int y;
    void fun2() {
        cout << "inside fun2";
    }
};

int main() {
    Data t;
    t.x = 5;  // LINE-1
    t.fun1(); // LINE-2
    t.y = 8;  // LINE-3
    t.fun2(); // LINE-4

    return 0;
}
```

Which line/lines will give error?

- [x] a) LINE-1
- [x] b) LINE-2
- [ ] c) LINE-3
- [ ] d) LINE-4

Yes, the answer is correct.
Score: 2

Accepted Answers:
a) LINE-1

b) LINE-2

4) Consider the program below. **2 points**

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

class MyClass {
public:
    MyClass() { cout << "1"; }
    MyClass(const MyClass &t) { cout << "2"; }
};

int main() {
    MyClass *t1, *t2;          // LINE-1

    t1 = new MyClass();        // LINE-2
    t2 = new MyClass(*t1);     // LINE-3

    MyClass t3 = *t1;          // LINE-4
    MyClass t4 = t3;           // LINE-5

    return 0;
}
```

What will be the output?

- a) 111222
- b) 1112
- c) 1212
- d) 1222

Yes, the answer is correct.
Score: 2

Accepted Answers:
d) 1222

5) **2 points**

Consider the program below.

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

class MyClass {
    char _____________; // LINE-1: declare the data members
public:
    MyClass(char* _fname, char* _mname, char* _lname) :
        fname(setFname(_fname)), mname(setMname(_mname)),
        lname(setLname(_lname)) { }
    char* setFname(char* fn) {
        cout << fn << " ";
        return strdup(fn);
    }
    char* setMname(char* mn) {
        cout << mn << " ";
        return strdup(mn);
    }
    char* setLname(char* ln) {
        cout << ln << " ";
        return strdup(ln);
    }
};

int main() {
    MyClass obj("Ram", "Mohan", "Roy");

    return 0;
}
```

Fill in the blank at LINE-1 such that the output is as follows:

```
Roy Mohan Ram
```

- a) `*lname, *fname, *mname`
- b) `*mname, *lname, *fname`
- c) `*fname, *lname, *mname`
- d) `*lname, *mname, *fname`

Yes, the answer is correct.
Score: 2

Accepted Answers:
d) `*lname, *mname, *fname`

6) Consider the code segment. **2 points**

```
class Test {
    // code...
};

int main() {
    const Test t; // LINE-1
    return 0;
}
```

What is the type of **this** pointer associated with the object t?

- [ ] a) `const Test* this;`
- [x] b) `Test* const this;`
- [ ] c) `Test const* const this;`
- [ ] d) `const Test* const this;`

No, the answer is incorrect.
Score: 0

Accepted Answers:
c) `Test const* const this;`
d) `const Test* const this;`

7) Consider the following program. **2 points**

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

class Test {
    int _x;
    int _y;
    Test(int x, int y) {
        _x = x;
        _y = y;
        cout << _x << " " << _y;
    }
};

int main() {
    Test t(5, 6);

    return 0;
}
```

What will be the output / error?

- ( ) a) `0 0`
- ( ) b) `5 6`
- ( ) c) `compilation error: no default constructor`

d) compilation error: constructor is private

Yes, the answer is correct.
Score: 2

Accepted Answers:
d) compilation error: constructor is private

8) Consider the program below. **2 points**

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

class Data {
    int _d;
public:
    int set_d(int d) const {
        _d = d;
    }
    int get_d() const {
        return _d;
    }
};

int main() {
    Data obj;

    obj.set_d(5);
    cout << obj.get_d();

    return 0;
}
```

What will be the output / error?

a) 0

b) 5

c) compiler error: assignment of data-member Data::_d is read-only object

d) compiler error: cannot have const function for non-const object

Yes, the answer is correct.
Score: 2

Accepted Answers:
c) compiler error: assignment of data-member Data::_d is read-only object

9) Consider the program below. **2 points**

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

class Point {
    int x, y;
public:
    Point(int _x, int _y) : x(_x), y(_y) { }
    void changePoint(Point *new_pt) { this = new_pt; }
    void show() { cout << x << ", " << y << endl; }
};

int main() {
    Point p1(10, 20);
    Point p2(20, 50);

    p1.changePoint(&p2);
    p1.show();

    return 0;
}
```

What will be the output / error?

a) 10, 20

b) 20, 50

c) Compiler Error: lvalue required as left operand of assignment

d) Compiler Error: private x, y are inaccessible

Yes, the answer is correct.
Score: 2

Accepted Answers:
c) Compiler Error: lvalue required as left operand of assignment