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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Programming in C++ (course)[Announcements \(announcements\)](#) **[About the Course \(preview\)](#)** [Ask a Question \(forum\)](#)[Progress \(student/home\)](#) [Mentor \(student/mentor\)](#)

Unit 5 - Week 3

Course outline

How does an
NPTEL online
course work?

Week 0

Week 1

Week 2

Week 3

- Module 11 :
Classes and
Objects (Lecture
19) (unit?
unit=41&lesson=42)
- Module 11 :
Classes and
Objects (Contd.)
(Lecture 20)
(unit?
unit=41&lesson=43)
- Module 12 :
Access Specifiers
(Lecture 21)

Assignment 3

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

Assignment submitted on 2020-10-07, 23:22 IST

(unit?
unit=41&lesson=44)

Module 12 :
Access Specifiers
(Contd.) (Lecture
22) (unit?
unit=41&lesson=45)

Module 13 :
Constructors,
Destructors and
Object Lifetime
(Lecture 23)
(unit?
unit=41&lesson=46)

Module 13 :
Constructors,
Destructors and
Object Lifetime
(Contd.) (Lecture
24) (unit?
unit=41&lesson=47)

Module 13 :
Constructors,
Destructors and
Object Lifetime
(Contd.) (Lecture
25) (unit?
unit=41&lesson=48)

Module 14 : Copy
Constructor and
Copy Assignment
Operator (Lecture
26) (unit?
unit=41&lesson=49)

Module 14 : Copy
Constructor and
Copy Assignment
Operator (Contd.)
(Lecture 27)
(unit?
unit=41&lesson=50)

Module 14 : Copy
Constructor and
Copy Assignment
Operator (Contd.)
(Lecture 28)
(unit?
unit=41&lesson=51)

Module 15 :
Const-ness
(Lecture 29)

1) Consider the program below.

```
#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 points

2 points

(unit?
unit=41&lesson=52)

☒ Module 15 :
Const-ness
(Contd.) (Lecture
30) (unit?
unit=41&lesson=53)

☐ Lecture Materials
(unit?
unit=41&lesson=54)

☒ Quiz :
Assignment 3
(assessment?
name=133)

☐ W3_Programming-
Qs1
(/noc20_cs57/progassignment?
name=137)

☐ W3_Programming-
Qs2
(/noc20_cs57/progassignment?
name=138)

☐ W3_Programming-
Qs3
(/noc20_cs57/progassignment?
name=139)

☐ W3_Programming-
Qs4
(/noc20_cs57/progassignment?
name=140)

☐ Feedback For
Week 3 (unit?
unit=41&lesson=55)

Week 4

Week 5

Week 6

Week 7

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Assignment
Solution

2) Consider the program below.

```
#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

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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?

- ☒ a) LINE-1
- ☒ 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;`
- ☒ 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

