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nirajs9kr@gmail.com

NPTEL (https://swayam.gov.in/explorer?ncCode=NPTEL) » Programming In Modern C++ (course)

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Thank you for taking the Week 02: Assignment 2.

Week 02: Assignment 2

Your last recorded submission was on 2023-07-29, 11:25 IST Due date: 2023-08-09, 23:59 IST.

1) ***2 points***

Consider the following program.

```
#include <iostream>
using namespace std;
int add(int n1 = 0) { return n1; }
int add(int n1 = 0, int n2 = 0) { return n1 + n2 - 1;}
int add(int n1 = 0, char c1 = 'a'){ return n1 + c1 - 1; }
int add(int n1 = 0, int n2 = 0, int n3 = 0) { return n1 + n2 + n3 - 1; }
int main() {
    int c = add(2, 5);
    cout << c << endl;
    return 0;
}
```

What will be the output/error(s)?

a) 6

b) 99

c) Compilation Error: default argument missing for "int add(int, int, int)"

d) Compilation Error: call of overload "add(int, int)" is ambiguous

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- ○ a
- ○ b
- ○ c
- ◉ d

2) Consider the code segment given below. ***2 points***

```
#include <iostream>
using namespace std;
#define Times(x, y) (x * y)

int main() {
    int a = 4;
    cout << Times(a + 3, 5) << endl;
    return 0;
}
```

What will be the output?

a) 35

b) 20

c) 19

d) 23

- ○ a
- ○ b
- ◉ c
- ○ d

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3) Consider the following code segment. **2 points**

```
#include<iostream>
#define X 1
using namespace std;
int main(){
    int i;
    const int i1 = 2;
    const int i2 = i1;    //LINE-1
    i2 = X + 5;           //LINE-2
    i = i1;               //LINE-3
    i1 = 4+5;             //LINE-4
    return 0;
}
```

Which line/s will give compilation error/s?

a) LINE-1

b) LINE-2

c) LINE-3

d) LINE-4

- [ ] a
- [x] b
- [ ] c
- [x] d

4) **2 points**

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Consider the code segment given below.

```
#include <iostream>
using namespace std;
int& func(int& i) {     //LINE-1
    return i = i+5;
}
int main() {
    int x = 1, y = 2;
    int& z = func(x);
    cout << x << " " << z << " ";
    func(x+1) = y;
    cout << x << " " << z;
    return 0;
}
```

What will be the output/error?

a) 6 6 2 2

b) 7 7 3 3

c) 6 6 3 2

d) Compilation error: invalid initialization of non-const reference of type 'int&' from an rvalue of type 'int'

- ○ a
- ○ b
- ○ c
- ◉ d

5) ***2 points***

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Consider the code segment.

```
#include<iostream>
using namespace std;
int main(){
    const int a = 5;
    int &b = a+1;
    b = a*b;
    cout << a << " " << b;
    return 0;
}
```

What will be the output?

a) 5 30

b) 30 25

c) 25 36

d) Compilation error: invalid initialization of non-const reference

- ○ a
- ○ b
- ○ c
- ◉ d

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

```
#include <iostream>
using namespace std;
int main() {
    int a = 2, *b;
    *b = a;
    const int *ptr = &a;      // LINE-1
    *ptr = *b;                // LINE-2
    cout << *ptr;
    return 0;
}
```

Which line will generate compilation error?

a) LINE-1

b) LINE-2

c) Both LINE-1 and LINE-2

d) No error

- ○ a
- ◉ b
- ○ c
- ○ d

7) **2 points**

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Consider the code segment below.

```
#include<iostream>
using namespace std;
struct complex{
    int re, im;
    void show(){ cout << re << " + i" << im; }
};
_______________________________{ //LINE-1
    c2.re = c1.re - c2.re;
    c2.im = c1.im - c2.im;
    return c2;
}
int main(){
    struct complex c1={2,5},c2{3,-2};
    struct complex t = c1 - c2;
    t.show();
    return 0;
}
```

Fill in the blank at LINE-1 so that the output is -1 + i7.

a) `complex operator-(const complex &c1, complex &c2)`

b) `complex operator-(complex &c1, const complex &c2)`

c) `complex operator-(complex &c1, complex &c2)`

d) `complex operator-(const complex &c1, const complex &c2)`

- [ ] a
- [ ] b
- [x] c
- [ ] d

8) ***2 points***

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Consider the code segment given below.

```
#include <iostream>
using namespace std;
char fun(int a, char b){
    char c = a+b;
    return c;
}
char fun(char a, int b){
    char c = a-b;
    return c;
}
int main(){
    cout << fun(100,10); //LINE-1
    return 0;
}
```

What will be the output/error?

a) n

b) Z

c) NULL

d) Compilation error at LINE-1: call of overload 'fun(int, int)' is ambiguous

- ○ a
- ◉ b
- ○ c
- ○ d

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9) Consider the code segment given below. **2 points**

```
#include <iostream>
using namespace std;
#define MAXVAL(X, Y) (X > Y ? X : Y)
inline int maxval(int x, int y){
    return x > y ? x : y;
}
int main(){
    int x1 = 3, x2 = 4;
    cout << MAXVAL(++x1, ++x2) << " ";
    cout << maxval(++x1, ++x2) << " ";
    return 0;
}
```

What will be the output?

a) 5 6

b) 6 6

c) 6 5

d) 6 7

- ○ a
- ○ b
- ○ c
- ◉ d

You may submit any number of times before the due date. The final submission will be considered for grading.

Submit Answers