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[NPTEL \(https://swayam.gov.in/explorer?ncCode=NPTEL\)](https://swayam.gov.in/explorer?ncCode=NPTEL) » [Programming in Modern C++ \(course\)](#)**Register for Certification
exam**https://examform.nptel.ac.in/2023_01/exam_form/showcard**Course outline****How does an NPTEL
online course work? ()****Week 0 ()****Week 1 ()****Week 2 ()**

Week 2 : Assignment 2

The due date for submitting this assignment has passed.

Due on 2023-02-08, 23:59 IST.**Assignment submitted on 2023-02-05, 21:34 IST**

● Lecture 06 : Constants and Inline Functions (unit?unit=32&lesson=33)

● Lecture 07 : Reference & Pointer (unit?unit=32&lesson=34)

● Lecture 08 : Default Parameters & Function Overloading (unit?unit=32&lesson=35)

● Lecture 09 : Operator Overloading (unit?unit=32&lesson=36)

● Lecture 10 : Dynamic Memory Management (unit?unit=32&lesson=37)

● Tutorial 02 : How to build a C/C++ program?: Part 2: Build Pipeline (unit?unit=32&lesson=38)

● Week 2 Lecture Material (unit?unit=32&lesson=39)

● **Quiz: Week 2 : Assignment 2 (assessment?name=168)**

● W2_Programming_Qs-1 (/noc23_cs50/progassignment?name=169)

● W2_Programming_Qs-2 (/noc23_cs50/progassignment?)

1) Consider the following program.

```
#include <iostream>
using namespace std;
char add(char c1 = 'a') { return c1; }
char add(char c1 = 'a', char c2 = 'b') { return c1 + c2 - 'a';}
char add(char c1 = 'a', int d1 = 100){ return c1 + d1 - 'a'; }
char add(char c1 = 'a', char c2 = 'b', char c3) { return c1 + c2 + c3 - 'a'; }
int main() {
    char c = add('o', 'k');
    cout << c << endl;
    return 0;
}
```

What will be the output/error(s)?

a) y

b) z

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

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

☐ a.

☐ b.

☒ c.

☒ d.

Yes, the answer is correct.
Score: 2

Accepted Answers:

c.

d.

2 points



name=170)

☒ W2_Programming_Qs-3
(/noc23_cs50/progassignment?
name=171)

☐ Week 2 Feedback Form
(unit?unit=32&lesson=40)

☐ Assignment 2 Solution
(unit?unit=32&lesson=41)

Week 3 ()

Week 4 ()

Week 5 ()

Week 6 ()

Week 7 ()

Week 8 ()

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**Problem Solving
Session ()**

2) Consider the following code segment.

```
#include <iostream>
using namespace std;
#define SQR(x) (x)*(x)

int main() {
    int a=3;
    cout << SQR(a++) << endl;
    return 0;
}
```

What will be the output?

a) 12

b) 25

c) 9

d) 16

☒ a.

☐ b.

☐ c.

☐ d.

Yes, the answer is correct.

Score: 1

Accepted Answers:

a.

1 point



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;             //LINE-2
    i = i1;             //LINE-3
    i1 = i;             //LINE-4
    return 0;
}
```

Which line/s will give you an error?

- a) LINE-1
- b) LINE-2
- c) LINE-3
- d) LINE-4

☒ a.

☒ b.

☐ c.

☐ d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.



d.

4) Consider the following code segment.

2 points

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

What will be the output/error?

a) 36

b) 30

c) 25

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

- ☐ a.
- ☐ b.
- ☐ c.
- ☒ d.

Yes, the answer is correct.

Score: 2

Accepted Answers:

d.



5) Consider the following code segment.

2 points

```
#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) = y;
    cout << x << " " << z;
    return 0;
}
```

What will be the output?

a) 6 6 2 2

b) 6 6 7 7

c) 1 1 2 2

d) 1 1 7 7

- ☒ a.
☐ b.
☐ c.
☐ d.

Yes, the answer is correct.



Score: 2

Accepted Answers:

a.

6) Consider the following code segment.

2 points

```
#include <iostream>
using namespace std;
void compute(int n1, int n2, _____, _____){ //LINE-1
    n3 = n1 + n2;
    *n4 = n1 * n2;
}
int main(){
    int a = 100, b = 200, c = 0, d = 0;
    compute(a, b, c, &d); //LINE-2
    cout << c << ", ";
    cout << d;
    return 0;
}
```

Choose the appropriate option to fill in the blanks at LINE-1, such that the output of the code would be: 300 20000.

- a) int n3, int* n4
- b) int& n3, int *n4
- c) int* n3, int* n4
- d) int& n3, int& n4

- ☐ a.
- ☐ b.
- ☐ c.



☒ d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

7) Consider the following code segment.

2 points

```
#include <iostream>
using namespace std;
int main() {
    int a = 2, *b;
    *b = 5;
    int * const ptr;    // LINE-1
    ptr = b;            // LINE-2
    cout << *ptr;
    return 0;
}
```

What will be the output/error?

a) <garbage value>

b) 5

c) Compilation Error at LINE-1: uninitialized const 'ptr'

d) Compilation Error at LINE-2: assignment of read-only variable 'ptr'

☐ a.

☐ b.

☒ c.

☒ d.



Yes, the answer is correct.

Score: 2

Accepted Answers:

c.

d.

8) Consider the following code segment.

2 points

```
#include <iostream>
using namespace std;
void fun(int a = 5) { cout << a << endl; }           //LINE-1
int fun(int x = 10) { cout << x << endl; return 0; } //LINE-2
int main() {
    fun();
    return 0;
}
```

What will be the output/error?

a) 5

b) 10

c) 5
10

d) Compilation error at LINE-2: ambiguating new declaration of 'int fun(int)'

☐ a.

☐ b.

☐ c.

☒ d.

Yes, the answer is correct.



Score: 2

Accepted Answers:

d.

9) Consider the following code segment.

2 points

```
#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 such that the program will print 5 + i3

- a) complex operator+(complex &c1, complex &c2)
- b) complex operator+(const complex &c1, const complex &c2)
- c) operator+(complex &c1, complex &c2)
- d) complex +(complex &c1, complex &c2)



- ☐ a.
- ☒ b.
- ☐ c.
- ☐ d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

