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

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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

1) Consider the following program.

2 points

```
#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) Consider the following code segment.   *1 point*

```cpp
#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.

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

```cpp
#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*

```cpp
#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.