### **Computer Science and Engineering**

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#### Software Engineering

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**Started on** Wednesday, 27 January 2021, 2:16 PM

State Finished

Completed on Wednesday, 27 January 2021, 3:03 PM

**Time taken** 46 mins 49 secs

**Grade 14.50** out of 15.00 (97%)

#### Question 1

Correct

Mark 1.00 out of 1.00

Flag question

What will be the output of the following program?

```
#include <iostream>
using namespace std;
class num {
    int a;
    static int n;
public:
    num(): a(0) {
        ++n;
        a += n \% 2 * n;
        cout << "a=" << a << " " << "n=" << n << endl;</pre>
    }
};
int num::n = 0;
int main() {
    num x, a[2];
    return 0;
}
```

Select one:

```
a=1 n=1
a=0 n=2
a=3 n=3
```



```
a=1 n=1
a=0 n=2
a=1 n=3

a=1 n=1
a=1 n=1
a=1 n=1
a=1 n=1
a=2 n=2
a=3 n=3
```

```
Your answer is correct.
```

The correct answer is:

```
a=1 n=1
a=0 n=2
a=3 n=3
```

#### Question 2

Incorrect

Mark 0.00 out of 0.50

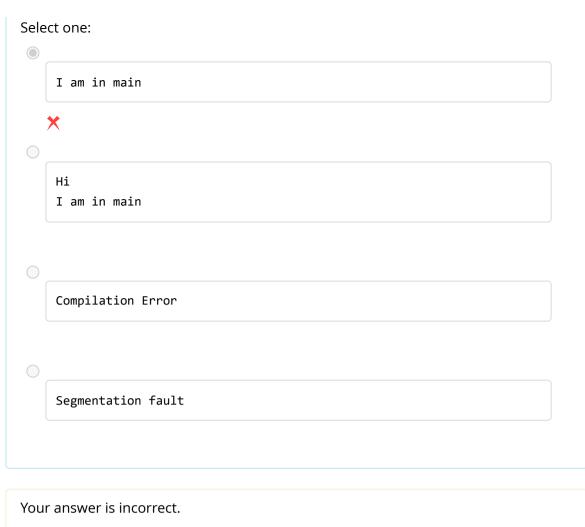
Flag question

What is the output of the following program/

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

class xyz {
public:
    xyz() {
        cout << "Hi" << endl;
    }
} p;

int main() {
    cout << "I am in main" << endl;
    return 0;
}</pre>
```



Your answer is incorrect.

The correct answer is:

Hi
I am in main

#### ${\tt Question}~3$

Correct

Mark 2.00 out of 2.00



Consider the program below where the declarator and qualifer for variable  $\, \mathbf{i} \,$  is missing.

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

int& func(int& a) {
    ______ i = a; // Declarator needed
    return i;
}

int main() {
    int a = 16;
    int& b = func(a);
    a = sqrt(sqrt(sqrt(sqrt(a))));

    cout << b + a << endl;
    return 0;
}</pre>
```

Given below are different fill-up options for the declarator,

#### Option # Declarator

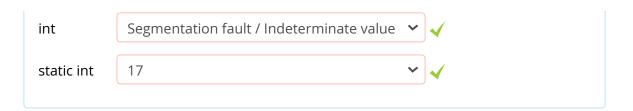
- (a) int
- (b) int&
- (c) const int
- (d) static int

and the outcome from the program as filled up.

#### Option # Outcome

- (1) Compilation Error
- (2) 17
- (3) Segmentation fault / Indeterminate value
- (4) 2

Match every fill-up option with the corresponding outcome.



The correct answer is: int&

- 2, const int
- compilation error, int
- Segmentation fault / Indeterminate value, static int
- 17

#### Question 4

Correct

Mark 1.00 out of 1.00

Flag question

Match the purpose with the mechanism between the lists.

#### Option # Purpose

- (a) Efficient transfer of value from caller to callee
- (b) Reliable transfer of value of local variable from callee to caller
- (c) Necessary to use a function as an Ivalue
- (d) Safe transfer of value from caller to callee

and the outcome from the program as filled up.

#### Option # Mechanism

- (1) Call-by-Value
- (2) Call-by-Reference
- (3) Return-by-Value
- (4) Return-by-Reference

Efficient transfer of value from caller to callee

Necessary to use a function as an Ivalue

Safe transfer of value from caller to callee

Reliable transfer of value of local variable from callee to caller



Your answer is correct.

The correct answer is: Efficient transfer of value from caller to callee

– Call-by-Reference, Necessary to use a function as an lvalue

- Return-by-Reference, Safe transfer of value from caller to callee
- Call-by-Value, Reliable transfer of value of local variable from callee to caller
- Return-by-Value

#### Question 5

Correct

Mark 1.00 out of 1.00

Flag question

#### What will be the output of the following program?

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

#define MM_1(x, y) x * y
#define MM_2(x, y) (x * y)
#define MM_3(x, y) (x) * (y)

inline int MPLY(int x, int y) { return x * y; }

int main() {
    int a = 3, b = 4;

    cout << "MM_1:" << MM_1(MM_1(a + 1, b - 1), a + b) << endl;
    cout << "MM_2:" << MM_2(MM_2(a + 1, b - 1), a + b) << endl;
    cout << "MM_3:" << MM_3(MM_3(a + 1, b - 1), a + b) << endl;
    cout << "MPLY:" << MPLY(MPLY(a + 1, b - 1), a + b) << endl;
    return 0;
}
```

#### Select one:

```
MM_1:8
MM_2:22
MM_3:22
MPLY:84
```

```
MM_1:8

MM_2:22

MM_3:84

MPLY:84
```



MM\_1:8 MM\_2:8 MM\_3:84 MPLY:84



Your answer is correct.
The correct answer is:

MM\_1:8

MM\_2:22

MM\_3:84

MPLY:84

# Question **6**Correct Mark 0.50 o

Mark 0.50 out of 0.50

Flag question

What is INCORRECT about static member functions?

Select one:

can be of private or public access type

does not have this pointer

can access both static and non-static members

**√** 

is shared by all objects of a class  $% \left( \frac{1}{2}\right) =\left( \frac{1}{2}\right) ^{2}$ 

Your answer is correct.

The correct answer is:

can access both static and non-static members

## Question 7 Consider classTest. What are the permissible signatures of a Copy Con-structor? Correct Select one: Mark 0.50 out of 0.50 Test(const Test& t), Test(Test& t); Flag question Test(const Test\* t), Test(Test\* t); Test(const Test t), Test(Test t); Test(Test& t), Test(Test\* t); Your answer is correct. The correct answer is: Test(const Test& t), Test(Test& t);

#### Question 8

Correct

Mark 0.50 out of 0.50

Flag question

Choose the equivalent expression using operator function/s for the expression in the following statement:

```
c = a + b;
```

Select one:

```
=(c, +(a, b);
```

operator+(operator=(c, a), b);

operator=(c, operator+(a, b));

```
operator=(c, add(a, b));
```

```
Your answer is correct.

The correct answer is:

operator=(c, operator+(a, b));
```

#### Question 9

Correct

Mark 1.00 out of 1.00

Flag question

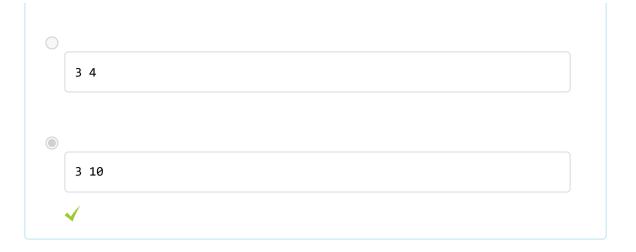
What will be the output of the following program?

```
#include <iostream>
using namespace std;
int i = 0;
class A {
public:
    \sim A() \{ i = 10; \}
};
int fun() {
    i = 3;
    A obj;
    return i++;
}
int main() {
    cout << fun() << " ";
    cout << i << endl;</pre>
    return 0;
}
```

Select one:

4 10

10 11



The correct answer is:

3 10

#### Question 10

Correct

Mark 1.00 out of 1.00

Flag question

#### Consider the following program.

```
#include <cstdio>
#include <cstdlib>
using namespace std;
int main() {
    int *p = (int*)malloc(sizeof(int));
    *p = 0x5E6A3D1B;
    unsigned char *q = (unsigned char*)p;
    printf("%X\n", *(q + 1));
    return 0;
}
```

What will be the output?

Select one:





**1**B

6A

5E

Your answer is correct.

The correct answer is:

3D

#### Question 11

Correct

Mark 1.00 out of 1.00

Flag question

#### What will be the output of the program below?

```
#include <iostream>
using namespace std;
class student {
    int mark;
public:
    student(): mark(0) { }
    student(int x): mark(x) { }
    student(const student& s): mark(s.mark) { }
    ~student() { cout << mark << " "; }
};
int main() {
    student s1(200);
    student s2();
    student s3 = 300;
    student s4 = s3;
    return 0;
}
```

#### Select one:

200 300 300

Syntax error in declaring object

```
300 300 200
```

The correct answer is:

300 300 200

#### Question 12

Correct

Mark 1.00 out of 1.00

Flag question

#### Consider the following program.

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

int main() {
   int i = 0;
   cout << sizeof(&i) << " ";
   cout << sizeof(void*);

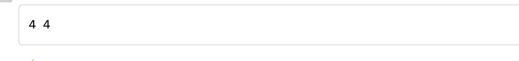
   return 0;
}</pre>
```

What are the possible outputs of the above program?

Select one or more:

```
4 8
```







8 4

```
Your answer is correct.
The correct answer is:

8 8
```

#### Question 13

Correct

Mark 1.00 out of 1.00

Flag question

What will be the output from the program below?

```
#include <iostream>
using namespace std;
class sample {
    int i;
    double d;
public:
    sample(int i\_, double d\_) : i(i\_), d(d\_) { }
    void print(int i, double d) {
        cout << i << " " << d << endl;
        cout << this->i << " " << this->d << endl;</pre>
    }
};
int main() {
    sample s(2, 3);
    s.print(5, 6);
    return 0;
}
```

Select one:

5 6
2 3

```
5 6
5 6
5 6
```

The correct answer is:

```
5 6
2 3
```

#### Question 14

Correct

Mark 1.00 out of 1.00

Flag question

#### Consider the following program.

```
int main() {
    int a[] = { 1, 2, 3, 4, 5 };
    int *arr[5] = { a, a + 1, a + 2, a + 3, a + 4 };
    int *p = a + 4;

    cout << p[*arr[1] - 5];

    cin >> *p;
    return 0;
}
```

#### What will be the output?

Select one:

```
3
```

1

garbage

②2✓

```
Your answer is correct.
The correct answer is:
```

#### Question 15

Correct

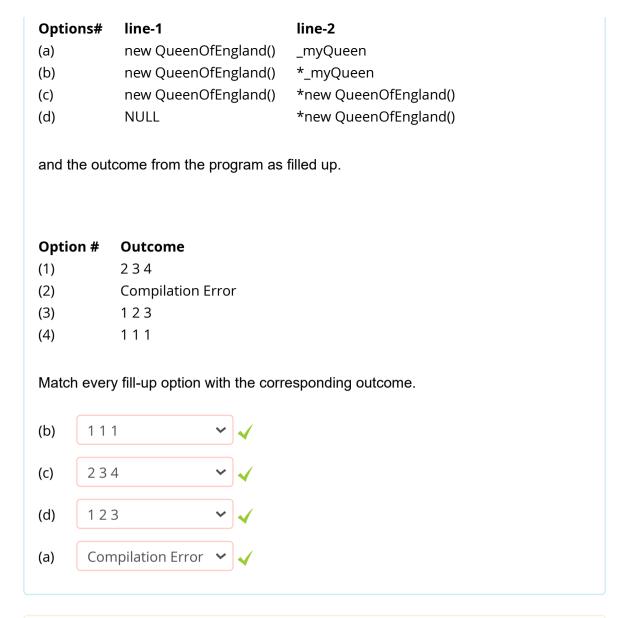
Mark 2.00 out of 2.00

Flag question

For a singleton class QueenOfEngland below, we have an application in main(). Two lines of the class (line-1 and line-2) are partially blank and need to be filled up properly.

```
#include <iostream>
using namespace std;
class QueenOfEngland {
  static QueenOfEngland* myQueen;
  static int reign;
  QueenOfEngland() { reign++; }
public:
  const static QueenOfEngland& queen() {
    if (! myQueen)
       _myQueen = _____; // line-1
    return _____; // line-2
  }
  void Reign() const { cout << reign << " "; }</pre>
};
QueenOfEngland* QueenOfEngland::_myQueen = NULL;
int QueenOfEngland::reign = 0;
int main() {
  QueenOfEngland::queen().Reign();
  QueenOfEngland::queen().Reign();
  QueenOfEngland::queen().Reign();
  return 0;
}
```

Given below are different fill-up options,





Finish review

