MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) Given the following function definition

```c
void calc(int a, int& b) {
    int c;
    c = a + 2;
    a = a * 3;
    b = c + a;
}
```

What is the output of the following code fragment that invokes calc?
(All variables are of type int)

```c
x = 1;
y = 2;
z = 3;
calc(x, y);
cout << x << " " << y << " " << z << endl;
```

A) 1 6 3
B) 3 6 3
C) 1 2 3
D) 1 14 9
E) None of these
2) What is the output of the following program?

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

void showDub(int);

int main()
{
    int x = 2;

    showDub(x);
    cout << x << endl;
    return 0;
}

void showDub(int num)
{
    cout << (num * 2) << endl;
}
```

A) 4  B) 2  C) 2  D) 4

3) What is the output of the following program?

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

void doSomething(int);

int main()
{
    int x = 2;

    cout << x << endl;
doSomething(x);
    cout << x << endl;
    return 0;
}

void doSomething(int num)
{
    num = 0;
    cout << num << endl;
}
```

A) 2  B) 2  C) 0  D) 2

4) What is the output of the following program?

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

void doSomething(int&);

int main()
{
    int x = 2;

    cout << x << endl;
    doSomething(x);
    cout << x << endl;
    return 0;
}

void doSomething(int& num)
{
    num = 0;
    cout << num << endl;
}
```

<table>
<thead>
<tr>
<th></th>
<th>A) 2</th>
<th>B) 2</th>
<th>C) 2</th>
<th>D) 0</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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</tbody>
</table>

5) Which line in the following program contains the header for the showDub function?

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

void showDub(int);

int main()
{
    int x = 2;

    showDub(x);
    cout << x << endl;
    return 0;
}

void showDub(int num)
{
    cout << (num * 2) << endl;
}
```

<table>
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<tr>
<th></th>
<th>A) 10</th>
<th>B) 6</th>
<th>C) 15</th>
<th>D) 4</th>
</tr>
</thead>
</table>
6) Which line in the following program contains the prototype for the showDub function? 6)

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

void showDub(int);

int main()
{
    int x = 2;
    showDub(x);
    cout << x << endl;
    return 0;
}

void showDub(int num)
{
    cout << (num * 2) << endl;
}
```

A) 10  B) 6  C) 4  D) 15

7) Which line in the following program contains a call to the showDub function? 7)

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

void showDub(int);

int main()
{
    int x = 2;
    showDub(x);
    cout << x << endl;
    return 0;
}

void showDub(int num)
{
    cout << (num * 2) << endl;
}
```

A) 15  B) 4  C) 10  D) 6
8) Here is the header for a function named computeValue:

```cpp
void computeValue(int value)
```

Which of the following is a valid call to the function?
A) computeValue(10)  
B) computeValue(10);
C) void computeValue(int x);  
D) void computeValue(10);

9) How many times will the following function call itself, if 5 is passed as the argument?

```cpp
void showMessage(int n)
{
    if (n > 0)
    {
        cout << "Good day!" << endl;
        showMessage(n - 1);
    }
}
```

A) 5  
B) 4  
C) 1  
D) An infinite number of times

10) How many times will the following function call itself, if 5 is passed as the argument?

```cpp
void showMessage(int n)
{
    if (n > 0)
    {
        cout << "Good day!" << endl;
        showMessage(n + 1);
    }
}
```

A) 4  
B) 1  
C) 5  
D) An infinite number of times

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

11) Look at the following structure declaration.

```cpp
struct Circle
{
    double centerX;
    double centerY;
    double radius;
};
```

Assume that circle1 and circle2 are variables of the Circle type, and their members have been
initialized. Is it true or false that the following if statement correctly determines whether the two
variables' members contain the same data:

```cpp
if (circle1 == circle2)
```
MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

12) For the following code, which statement is not true? 12) ______

```cpp
class Point {
    private:
        double y;
        double z;
    public:
        double x;
};
```

A) The name of the class is Point.
B) x is available to code that is written outside the class.
C) x, y, and z are called members of the class.
D) z is available to code that is written outside the class.

13) Assume that myCar is an instance of the Car class, and that the Car class has a member function named accelerate. Which of the following is a valid call to the accelerate member function? 13) ______

A) myCar::accelerate();  B) Car->accelerate();
C) myCar.accelerate();  D) myCar.accelerate();

14) What is the output of the following program? 14) ______

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

class TestClass {
    public:
        TestClass(int x) {
            cout << x << endl;
        }

        TestClass() {
            cout << "Hello!" << endl;
        }
};

int main() {
    TestClass test;
    return 0;
}
```

A) The program runs, but with no output.  B) Hello!
C) 0  D) The program will not compile.
15) What is the output of the following program?

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

class TestClass
{
    public:
        TestClass(int x)
        {
            cout << x << endl;
        }
        TestClass()
        {
            cout << "Hello!" << endl;
        }
};

int main()
{
    TestClass test(77);
    return 0;
}
```

A) The program runs, but with no output.  
B) 77  
C) Hello!  
D) The program will not compile.

16) What is the output of the following program?

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

class TestClass
{
    private:
        int val;
        void showVal()
        {
            cout << val << endl;
        }
    public:
        TestClass(int x)
        {
            val = x;
        }
};

int main()
{
    TestClass test(77);
    test.showVal();
    return 0;
}
```

A) The program runs, but with no output.  
B) 0  
C) 77  
D) The program will not compile.
Testname: COMP184MT2

1) A
2) D
3) A
4) B
5) C
6) C
7) C
8) B
9) A
10) D
11) FALSE
12) D
13) D
14) B
15) B
16) D