4. What is the output of the following C++ statement?

```cpp
int x = 3;
if ( (x % 2 == 1) && (x % 2) )
    cout << "It is True." << endl;
else
    cout << "It is False." << endl;
```

a. It is True.
b. It is False.
c. Nothing.
d. None of the above.

5. What does the `continue` statement do?

a. Skips the remaining statements in the body of a while, for, and do/while repetition structure and proceeds with the next iteration of the loop.
b. Prints the word continue on the screen.
c. Causes immediate exit from a `while`, `for`, `do/while`, and `switch` structure.
d. None of the above.

PART III – SHORT PROBLEMS (18 Points)

1. Write the following equation in C++:

$$sum = \frac{-x + 2x^2 - 4y}{2z}$$

(6 Points)

Assume that the variables sum, x, y, and z are already declared and initialized to 0, 2, 5 and -3 respectively. What will be the value of sum.

-1   Sum = (-x + 2*(pow(x,2)) - 4*y) / (2*z) =

-3

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

int main()
{
    int a;
    cout << "Enter a value:" << endl;
    cin >> a;
```

2. Transform the following `if` into a `switch`. (6 Points)

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

int main()
{
    int a;
    cout << "Enter a value:" << endl;
    cin >> a;

    if (a==5)
        cout << "Nice Number"<<endl;
    else
        if (a==7 || a==9)
            cout <<"Lucky Number"<<endl;
        else
            cout <<"Just a number"<<endl;

    return 0;
}
```

Answer

```
cout << "Enter value:";
cin >> a
switch
{
case 5:
    cout << "Nice Number" <<endl;
    break;
case 7:
    cout << "Lucky Number" <<endl;
case 3:
    cout << "Lucky Number" <<endl;
    break;
case 9: a+a+a+a;
    cout << "Just a number" <<endl;
return 0;
}
```

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If (x && x > 5) cout << "Nice Try" <<endl;
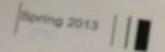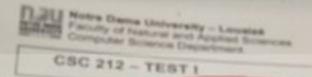
4. T ① : In a switch statement the variable that we need to test can be o
double.

5. T ① : You can place the pseudocode in a C++ file and it will be corre
the C++ compiler into machine code.

6. T ① : The Modulus operator returns the remainder of an integer
operands are not integer we get a syntax error.

PART II – MULTIPLE CHOICE (10 Points: 2 points for each

1. Suppose int x = 9;, which of the following sets x to 4?
   a. x = x * 1/2;
   b. x *= 2;
   c. x /= 3;
   d. None of the above.

2. How many times does the following for loop get executed?

```
for (int i = 4; i <= 10; i=i+2)
    cout << i;
```

   a. 5 times.
   b. 4 times.
   c. 6 times.
   d. None of the above.

3. Which of the following C++ statements is incorrect?
   a. if (mark == 0) mark--;
   b. if (mark == 0) mark++;
   c. if (mark != 0) mark+=1;
   d. if (mark =< 0) ++mark;

PART I - TRUE/FALSE QUESTIONS (9 Pts; 1.5 pts for each Question)

1. T F : The keyword break is used to exit from a function.

2. T F : In C++, "#include <iomanip>" is a preprocessor directive.

3. T F : Suppose int x = 10; then the following condition evaluates to true:
   if (x && x > 5) cout << "Nice Try" <<endl;

4. T F : In a switch statement the variable that we need to test can be of type int, char double.

5. T F : You can place the pseudocode in a C++ file and it will be correctly translate the C++ compiler into machine code.

6. T F : The Modulus operator returns the remainder of an integer division. operands are not integer we get a syntax error.

PART II - MULTIPLE CHOICE (10 Points: 2 points for each Quest

1. Suppose int x = 9;, which of the following sets x to 4?
   a. x = x * 1/2;
   b. x *= 2;
   c. x /= 3;
   d. None of the above.

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```

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  times.
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of the following C++ statements is incorrect?