COMP 1601: Computer Programming 1
Course Work Exam #1
Duration: 50 minutes

Instructions:

1. Answer **ALL** questions.
2. All answers must be written on the answer booklet provided.

1. What is printed by the following?

```
a = 25;
b = a + 15;
cout << a << " " << b << endl;
b = 10;
a = a - 15;
c = 20 - a;
cout << a << " " << b << " " << c;
```

2. If **myAge** and **yourAge** are numeric variables, which of the following statements will give a compilation error? There may be more than one statement that gives a compilation error.

a. `myAge = 23;`
b. `myAge = yourAge;`
c. `yourAge = myAge / 2;`
d. `42 = myAge;`

3. Assuming that 7 and 8 are entered as data for **a** and **b**, respectively, what is displayed by the last line of the following code?

```
cout << "Enter a number: " ;
cin >> a;
cout << "Enter a number: " ;
cin >> b;
c = (b % 2) / 2;
b = (a - 2) * a / 2;
c = b - a;
a = a * c;
cout << a << " " << b << " " << c;
```

4. Consider the following statements, where x and y are **int** variables:

```
x = ceil (2.9) + floor (5.9) + 17;
y = ceil (2.9 + 5.9 + 17);
```

What are the values of x and y after the statements are executed?

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5. For each of the statements in Box A and Box B, what is the output generated if the value of mark is 85 in both cases?

Box A

```
if (mark >= 50)
   cout << "You have passed! ";
else
   cout << " You have failed. ";
```

Box B

```
if (mark >= 50)
   cout << "You have passed! ";
if (mark >= 75)
   cout << "You got an A! ";
```

6. What does this code print?

```
int i;
for(i = 10; i < 20; i = i + 4)
   cout << i << endl;
```

10
14
18

7. What does this code print?

```
int i, check;
for(i = 10; i < 20; i = i + 1){
   cout << i << " ";
   check = i % 3;
   if (check == 0)
         cout << endl;
}
```

8. What is generated by the following fragment of code?

```
int i;
for (i = 25; i > -4; i = i - 5) {
   cout << i << " ";
}
```

25
20
15
10
5
0

9. The following code is written to calculate and display the sum of the integers from 1 to 100. However, it does not work correctly. Explain why.

```
int i, sum;
for (i = 1; i <= 100; i = i + 1) {
   sum = 0;
   sum = sum + i;
}
cout << sum;
```

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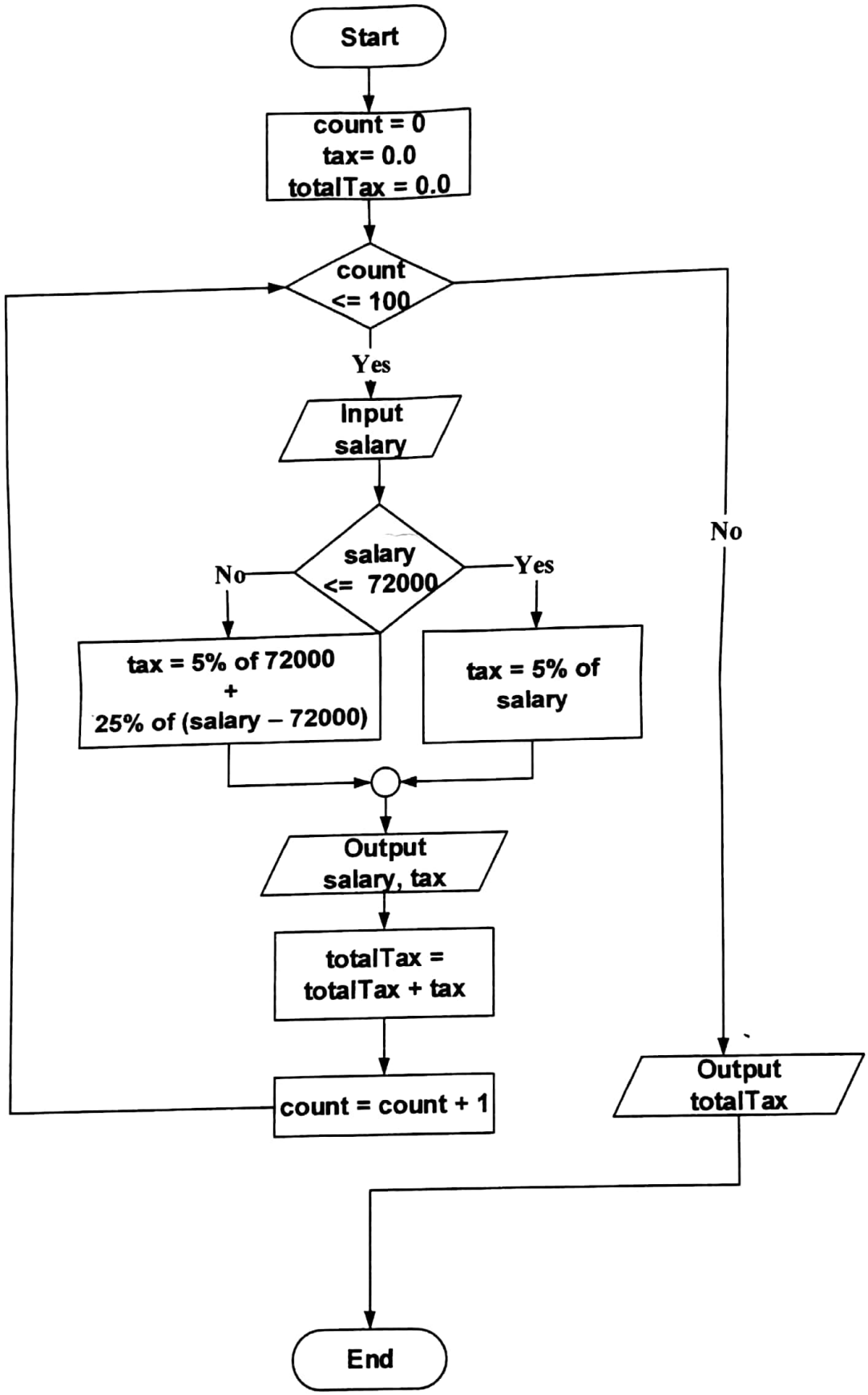
10. Write the C++ program corresponding to the flow chart given below.



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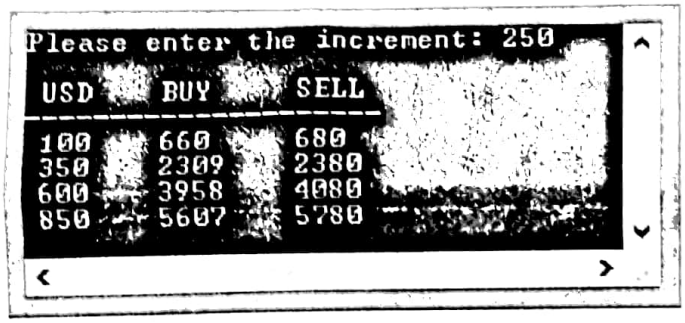
11. A divisor **d**, of an integer **n**, is a number which divides into **n** without a remainder. For example 3 is a divisor of 6. The divisor of **n** can be found by checking each number from 2 to `n/2` to determine if it divides n without a remainder.

    Write a program which prompts the user for a number `n` and prints all the divisors of `n`. Divisors are printed one per line.

12. A bank sells US dollars (USD) at a rate 6.7994 Trinidad dollars (TTD) for each US dollar. The bank buys USD at 3% less than it sells it.

    Write a program to generate a table showing the cost in TTD to buy and sell USD starting from 100 USD to 1000 (USD). The user is prompted to specify the increment in USD between lines of the table. The dollar values are rounded up to the next dollar.



End of Question Paper