# CSC 103
## TEST II

**Date:** 13\(^{th}\) May 2015  
**Time:** 11:00 - 12:15

<table>
<thead>
<tr>
<th>STUDENT NAME</th>
<th>KEY Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENT ID #</td>
<td>2 0</td>
</tr>
<tr>
<td>SECTION #</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QUESTION #</th>
<th>MARKS</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>Mr. Yaser</td>
</tr>
<tr>
<td>TOTAL</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** THERE ARE SIX (6) PAGES IN THIS TEST  
ONLY ONE SOLUTION WILL BE CONSIDERED FOR EACH QUESTION  
WRITE YOUR ANSWERS CLEARLY  
LAST PAGE IS EMPTY
Question 1

Show the output of each code in the corresponding box to the right.

(1) int a = 1, b = 2, c = 1;
    int s = b*b-4*a*c;
    if ( s == 0 && a == 1 )
        cout << "Factored" << endl;
    else
        cout << "Imaginary" << endl;
    cout << "Coefficient = " << s << endl;

(2) int y = 5, x = 49;
    cout << "X = " << x / 7 << endl;
    switch (x / 7)
    {
        case 1: y++; break;
        case 2: y = y + 2; break;
        case 3:
            y = y % 3;
            break;
        case 7:
            y = y % 3;
    }
    cout << "Y = " << y << endl;

(3) int Sp = 100;
    while ( Sp <= 101 )
    {
        cout << "Speed = " << Sp << endl;
        Sp++;
    }
    cout << "Fast & Furious";

(4) int p, m;
    for ( p = 1 ; p <= 3 ; p++ )
    {
        for ( m = 9 ; m > 8 ; m-- )
            cout << "[" << m - p << "]" << endl;
    }

Factored
Coefficient = 0

X = 7
Y = 2

Speed = 100
Speed = 101
Fast & Furious

[8]
[7]
[6]
Question 2

Write a C++ program to calculate and display the net price of pasta based on two user inputs: Type (C for chicken, M for Meat, or V for Vegetable) and the number of appetizers. The net price of pasta is the sum of the following:

1. Base price of the pasta is 2.5 BD for chicken, 2.5 BD for Meat, and 2.1 for Vegetable.
2. Each appetizer is an additional 1.2 BD.

SAMPLE INPUT/OUTPUT

Enter pasta type: C for Chicken, M for Meat, V for Vegetable
C
Enter number of appetizers:
2
Net price = 4.9

Answer

```c++
int main()
{
    char type;
    int appetizer;
    float price;

    cout<<"Enter pasta type: C for Chicken, M for Meat, V for Vegetable ";
    cin >> type;

    cout<<"Enter number of appetizers: ";
    cin >> appetizer;

    if ( type=='C' )
        price = 2.5;
    else if ( type=='M' )
        price = 2.5;
    else if ( type == 'V' )
        price = 2.1;

    price += appetizer*1.2;

    cout<<"Net price = " << price << endl;

    return 0;
}
```
Question 3

A supply chain is performing end of the year store inventory. Write a C++ program that asks the user to enter the **Type** (D for Deskjet, L for Laser) and **price** for 120 printers. The program then displays how many Deskjet printers, how many Laser printers and how many other printers.

**Answer**

```cpp
int main()
{
    char type;
    float price;
    int Deskjet = 0, Laser = 0, unknown = 0;

    for (int i=1; i<= 120 ; i++)
    {
        cout<<"Enter price and type (D Deskjet, L Laser) ";
        cin>> price >> type;
        if ( type== 'D')
            Deskjet++;
        else if ( type== 'L')
            Laser++;
        else
            unknown++;
    }

    cout<<"Deskjet Printers = " << Deskjet << endl;
    cout<<"Laser Printers = " << Laser << endl;
    cout<<"Other Printers = " << unknown << endl;

    return 0;
}
```
Question 4 (10 marks)

Assume that we have a file called `savings.txt` with unknown number of lines. Each line contains the client `name` and his/her saving `money` in the bank. Below is a sample file.

Write a C++ program that reads all the lines from the file and prints on screen on separate lines the client name and the saved money. The program should also display the total saving money in the bank and the name of the customer who has the highest saving money.

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

int main()
{
    int saving, ts=0, max=0;
    string name, nameswap;

    ifstream infile;
    infile.open("comp.txt");

    cout<<"name"<<"\t"<<"saving"<<endl;

    while(!infile.eof())
    {
        infile>>name>>saving;
        ts=ts+saving;
        cout<<name<<"\t"<<saving<<endl;

        if(saving > max)
        {
            max=saving;
            nameswap=name;
        }
    }

    cout<<"Total saving amount ="<<ts<<endl;
    cout<<nameswap<<" has the highest saving money = "<<max<<endl;
}
```
} cout<<"total saving ="<<ts<<endl;  
cout<<nameswap<<" has the highest saving";
infile.close();

return 0;
}