CS201 Introduction to Programming

Mid Term Examination – Spring 2006
Time Allowed: 90 Minutes

Please read the following instructions carefully before attempting any of the questions:

1. Attempt all questions. Marks are written adjacent to each question.

2. Do not ask any questions about the contents of this examination from anyone.

>   ***a***. If you think that there is something wrong with any of the questions, attempt it to the best of your understanding.

>   ***b***. If you believe that some essential piece of information is missing, make an appropriate assumption and use it to solve the problem.

>   ***c***. Write all steps, missing steps may lead to deduction of marks.

>   ***d.*** All coding questions should be answered using the **C ++** syntax.

>   You are allowed to use the Dev-C++ compiler to write and test your code. If you do so please remember to copy and paste your code into the examination solution area. **(Do NOT share your code; your colleague could get higher marks than you!!)**

**WARNING: Please note that Virtual University takes serious note of unfair means. Anyone found involved in cheating will get an `F` grade in this course.

Question No. 1	Marks : 10

Write the function definitions for the following:

a) A function **test()** that would take three integer values **x**, **y** and **z** (as parameters), find the largest and return the result to the calling function.

b) A function **sum()** that would take the one integer array **myArray[ ]** of size **10** (as parameter), calculate the sum of the elements of **myArray[ ]** and display the result.

Note: The function **sum()** returns no value.

Question No. 2	Marks : 6

Write a program that will create and display the following series:
65, 44, 27, 14, 5, 0, -1, 2, 9, 20.
Hint:

  The series is created by the formula $2x^2 - 3x$
  for x=-5 to 4
The variable x is of type integer.

Question No. 3	Marks : 2

The value of 2*15/3*7+3*2 is

★ 146
★ 76
★ 8
★ 70

Question No. 4	Marks : 2

Carefully analyze the following lines of code and chose the correct option.
        ch1="a";
        ch2='a';

★ ch1 and ch2 are strings
★ ch1 is string and ch2 is character
★ ch2 is string and ch1 is character
★ ch1 and ch2 are characters

Question No. 5	Marks : 2

The size of a double variable is

★ 2 bytes
★ 4 bytes
★ 8 bytes
★ 10 bytes

An array is also called

- ★ an array variable
- ★ array declaration
- ★ struct
- ★ constant pointer

What will be the output of the following programs?
a) Program1

```
#include <iostream>
int main()
{
   unsigned short x = 1;

   for (int i = 0; i < 10; i++)
   {
      cout << x << endl;
      x = x << 1;
    }

   return 0;
}
```

b) Program2

```
#include <iostream.h>
int main()
{
   unsigned short x = 1024;

   while(x>=1)
   {
      cout <<x << endl;
      x =x >> 1;
   }

   return 0;
}
```

Calculate the following expressions for
x=3 and y=2
  1) ++x++*++y
  2) 3*++x+--y
  3) ++x*4*++y