

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

Question No. 6

Marks : 2

An array is also called

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

Question No. 7

Marks : 10

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) $++x*4*++y$