



UNIVERSITY OF RUHUNA

Faculty of Engineering

End-Semester 1, Examination in Engineering - Part II, September 2014

Module No: EE1102 Module Name: Introduction to Programming

[1 hour and 30 minutes]

[Answer all questions. Each question carries 10 marks]

Q1. a) Consider the following code.

```
if(x>y) z=x*y;
```

- i. What are variables found in this code?
- ii. What is the condition that the statement $z=x*y$; will *not* be executed?

[2 Marks]

b) Consider the following code, where i is a integer type variable.

```
for(i=0; i<100; ++i)  
{  
    Console.WriteLine("{0}, ", i);  
}
```

- i. What is displayed when the given code is execute?
- ii. Write an equivalent while loop to the given for loop.
- iii. Write a for loop to display even numbers between 0 and 100.
- iv. Write a for loop to display odd numbers between 0 and 100.
- v. Write a for loop to display even numbers between 0 and 100, only if the number is less than or equal to x . Assume that x is a variable that contain a user input number between 20 and 80.

[5 Marks]

c) Consider the if–elseif–else format given below.

```
if(Condition1)    { Statement1; }  
else if(Condition2) { Statement2; }  
..
```

```
else if(ConditionN) { StatementN; }  
else                { StatementL; }
```

Show how to use if–elseif–else to display the Grade for user input marks myMark based on the marks ranges given in the table below.

Grade	Marks Range
A	80-100
B	60-79
C	40-59
F	0-39

[1 Mark]

- d) i. How to define and allocate memory to an array in C#?
ii. Write code fragment that would calculate the average of 100 numbers in the array myNum.

[2 Marks]

Q2. a) Consider the definition of the method given below.

```
static int add3ints(int a, int b, int c)
{
    int result;
    result = a + b + c;
    return result;
}
```

- i. What is the name of the method?
- ii. What are the input parameters of the method?
- iii. What is the return parameter of the method?
- iv. What is the type of return parameter?
- v. what is the local variable of the method?
- vi. If the method is called as
x=add3ints(2, 5, 458);
then what would be the value assigned to x?
- vii. If the method is called as
p=3; q=45;r=78;
x=add3ints(r, q, p);
what would be the values of a, b and c during the execution of the method??

[7 Marks]

b) Write the definition of a method which returns the product (multiplication) of four fractional (floating point type) numbers, given as input parameters. [1 Mark]

c) Consider the switch format given below.

```
switch(int x)
{
    case a: StatementsA; break;
    case b: StatementsB; break;
    case c: StatementsC; break;
    ..
    default: StatementsX; break;
}
```

How does switch statement works? You may explain by using an example and/or flowchart. [2 Mark]