NATIONAL OPEN UNIVERSITY OF NIGERIA,
PLOT 91 CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY,
JABI – ABUJA
FACULTY OF SCIENCES

APRIL 2019 EXAMINATION

COURSE CODE: CIT 351
COURSE CREDIT: 2
COURSE TITLE: C# PROGRAMMING
TIME ALLOWED: 2 Hours
INSTRUCTION: ANSWER QUESTION 1 AND ANY OTHER THREE (3) QUESTIONS;

MARKING GUIDE

QUESTION

1a. Enumerate and write on the **three** (3) common C# type systems (9 marks)

1b. Identify five (5) statements in the following source code and specify their corresponding roles: (10 marks)

Int sampleVariable;

sampleVariable = 5;

Method();

SampleClass sampleObject = new SampleClass();

 sampleObject.ObjectMethod();

< //executing a "for" loop with an embedded "if" statement

1c. Give a brief explanation of the following statements within the context of C# Programming:

    i.   C# is a multi-paradigm programming language. (2 marks)
    ii.   Managed memory cannot be explicitly freed (2 marks)

1d. State the role of ECMA international (2 marks)

                                                 [Total = 25 marks]

2a. Give the C# statement to convert the following object box to a value-type: (4 marks)
    object box = 48;
    int i = (int)box;

2b. Specify the condition for an unboxing conversion to a given value-type to succeed at run-time. (3 marks)

2c. Memory address pointers in C# are used within unsafe blocks. Discuss (8 marks)

                                                 [Total = 15 marks]

3a. Describe the standard syntax for declaring a variable in C#. (4 marks)
3b. Briefly explain the following in C#:
    i.   bool   (4 marks)
    ii. string   (4 marks)
3c. Highlight the reason why C# disallows the integer meaning 'true or false'. (3 marks)

[Total = 15 marks]

4a. Study the lines of code in the figure below and answer the questions that follow:

```
using System;

public class Fib{
    Decimal current;
    Decimal last;
    public Fib(){
        current = 1;
        last = 0;
    }

    private Fib(Decimal last, Decimal secondToLast){
        current = last+secondToLast;
        this.last = last;
    }

    public Fib GetNext(){
        return new Fib(current, last);
    }

    public Decimal Value{
        get{return current;}
    }
}
```

    i. Identify the object within the source code.   (2 marks)
    ii. Write the command line for compiling the identified object.   (6 marks)
    iii. Name <u>two</u> operators in the source code.   (4 marks)
4b. A notable feature of C# is that there are no global functions. Explain.   (3 marks)

[Total = 15 marks]

5a. Write short notes on the following:
    i.   ASP.NET Web Application   (3 marks)
    ii.   Empty Project   (3 marks)
    iii.   Windows Application   (3 marks)
    iv.   Class Library   (3 marks)

5b. Enumerate three (3) major tasks that can be performed in a C# project within the VisualStudio.NET setting.   (3 marks)

[Total = 15 marks]