



**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#:
- bool (4 marks)
 - 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;}
    }
}
```

- Identify the object within the source code. (2 marks)
 - Write the command line for compiling the identified object. (6 marks)
 - Name two 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:

- ASP.NET Web Application (3 marks)
- Empty Project (3 marks)
- Windows Application (3 marks)
- 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]