NATIONAL OPEN UNIVERSITY OF NIGERIA,
14/16 AHMADU BELLO WAY, VICTORIA ISLAND, LAGOS.
SCHOOL OF SCIENCE AND TECHNOLOGY
SEPTEMBER/OCTOBER 2016 EXAMINATION

COURSE CODE: CIT 351
COURSE TITLE: C# Programming_
TIME ALLOWED: $2^{1}/_{2}$ Hours
INSTRUCTION: Answer any four (4) questions.

QUESTIONS

1a. Give four (4) reasons why statements are considered to be critical for C# program execution. (4 marks)

1b. With the aid of two (2) common examples, explain why C# is said to be a case-sensitive programming language. . (4 marks)

1c. Write down the corresponding C# aliases of the following C# Primitive types:

i. Int32 ($^{1}/_{2}$ mark)
ii. Single (1 mark)
iii. Int64 (1 mark)
iv. Double (2 marks)
v. Byte (1 mark)
vi. Char (1 mark)
vii. Decimal (1 mark)
viii. SByte (1 mark)
ix. UInt32 (1 mark)

($^{1}/_{2}$ + 1 + 1 + 2 + 1 + 1 + 1 + 1 + 1 + 1 = 9 $^{1}/_{2}$ marks)

[Total = $17^{1}/_{2}$ marks]

2. Study the figure provided and answer the subsequent questions:

```
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;}
  }
}
```

2a. Identify and name the object within the source code. (3 marks)

2b. Write the command line for compiling this object. ($10^{1}/_{2}$marks)

2c. Name any 2 operators in this source code. (4 marks)

[Total = $17^{1}/_{2}$ marks]

3a. Write down the source code for compiling a file named **Economy.cs** on the hard drive of a computer. ($6^{1}/_{2}$ marks)

3b. Provide the appropriate comment for the following:

i. XML documentation) 3 marks each; 3x3=9 marks
ii. Multiple line
iii. Single line

3c. What is the implication of declaring a Method as static? (2 marks)

[Total = $17^{1}/_{2}$ marks]

4a. State the general syntax for declaring a variable in C# (4 marks)
4b. State the main role of each part of the syntax. (4 marks)

4c. Give the guiding principle for accomplishing the following:
i. Grouping statements into one unit (2 marks)
ii. Designating an end statement (2 marks)
iii. Enhancing a source code legibility (2 marks)
4d. Enumerate 4 most commonly used data types in C# programming ($3^{1}/_{2}$ marks)

[Total = $17^{1}/_{2}$ marks]

5a. Describe how memory leaks are handled in C# programming? ($5^{1}/_{2}$ marks)

5b. Give a brief explanation of any 3 template types accessible in Visual C# projects.
(3 x 4 = 12 marks)

[Total = $17^{1}/_{2}$ marks]

6a. What is the main significance of VisualStudio.NET with respect to having an Integrated Development Environment? ($2^{1}/_{2}$ marks)
6b. List 3 regular programming tasks carried out in VisualStudio.NET. (6 marks)
6c. What is the implication of using the Microsoft's .NET Framework libraries when naming objects in C#? (4 marks)

6d. Spot 5 statements in the following source code specifying their corresponding roles.

```
Int sampleVariable;

sampleVariable = 5;

Method();

SampleClass sampleObject =  new SampleClass();

 sampleObject.ObjectMethod();

< //executing a “for” loop with an embedded “if” statement
```

(5 marks)

[Total = $17^{1}/_{2}$ marks]