



NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
MARCH/APRIL 2016 EXAMINATION

SCHOOL OF SCIENCE AND TECHNOLOGY

COURSE CODE: CIT 351
COURSE TITLE: C# Programming

TIME ALLOWED: 2½ Hours
INSTRUCTION: Answer any four (4) questions.

QUESTIONS

- 1a. State the general syntax for declaring a variable in C# (4 marks)
1b. State the main role of each part of the syntax. (4 marks)
- 1c. 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)
- 1d. Enumerate 4 most commonly used data types in C# programming (3½ marks)
[Total = 17½ marks]
- 2a. Describe how memory leaks are handled in C# programming? (5½ marks)
- 2b. Give a brief explanation of any 3 template types accessible in Visual C# projects.
(3 x 4 = 12 marks)
[Total = 17½ marks]
- 3a. What is the main significance of VisualStudio.NET with respect to having an Integrated Development Environment? (2½ marks)
3b. List 3 regular programming tasks carried out in VisualStudio.NET. (6 marks)
3c. What is the implication of using the Microsoft's .NET Framework libraries when naming objects in C#? (4 marks)

3d. 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 = 17¹/₂ marks]

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

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

4c. 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 = 17¹/₂ marks]

5. 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;}
    }
}

```

- 5a. Identify and name the object within the source code. (3 marks)
- 5b. Write the command line for compiling this object. (10¹/₂marks)
- 5c. Name any 2 operators in this source code. (4 marks)

[Total = 17¹/₂ marks]

- 6a. Write down the source code for compiling a file named **Economy.cs** on the hard drive of a computer. (6¹/₂ marks)
- 6b. Provide the appropriate comment for the following:
 i. XML documentation) 3 marks each; 3x3=9 marks
 ii. Multiple line
 iii. Single line
- 6c. What is the implication of declaring a Method as static? (2 marks)

[Total = $17\frac{1}{2}$ marks]