**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:

1. C# is a multi-paradigm programming language. (2 marks)
2. 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#:

1. bool (4 marks)
2. 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:



i. Identify the object within the source code. (2 marks)

ii. Write the command line for compiling the identified object. (6 marks)

iii. 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:

1. ASP.NET Web Application (3 marks)
2. Empty Project (3 marks)
3. Windows Application (3 marks)
4. 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]**