ROLL NO. _____

Code: AC73/AT73   **Subject: C# AND .NET**

AMIETE – CS/IT

Time: 3 Hours | **DECEMBER 2013** | **Max. Marks: 100**

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.
- **Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.**
- **The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.**
- **Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

Q.1   **Choose the correct or the best alternative in the following:**   **(2×10)**

    a. Dataset is a collection of multiple?

       (A) Datatable   **(B)** Data Row
       (C) Gridview   **(D)** SQL Command

    b. Derivation of Base Class From Derived Class Is

       (A) ABSTRACTION   **(B)** INHERITANCE
       (C) ENCAPSULATION   **(D)** None of these

    c. Which of the following operators cannot be overloaded?

       (A) ==   **(B)** <<
       (C) &&   **(D)** !=

    d. What is .NET?

       (A) a programming language
       (B) an operating system
       (C) a layer between the operating system and the programming language
       (D) None of these

    e. Delgates in C# are used for

       (A) Callbacks   **(B)** Event Handling
       (C) Overloading   **(D)** Both **(A)** & **(B)**

f. Expansion for acronyms CTS, CLS and CLR are:

   (A) Common Technology System, Common Language Specification and
          Common Language Runtime
   (B) Common Type System, Common Language Specification and Common
          Language Runtime
   (C) Common Type System, C# Language Specification and Common Language
          Runtime
   (D) Common Type System, Common Language Specification and Common
          Language Routines

g. **.**Net framework automatically supports the use of following type(s) of delegates:

   (A) Synchronous   **(B)** Asynchronous
   (C) Both **(A)** and **(B)**   **(D)** None of these

h. This Windows based application allows you to browse the underlying C# type
   definition in the base class libraries.

   (A) wincv.exe   **(B)** wincv.dll
   (C) ildasm.exe   **(D)** TestApp.exe

i. A strong name is composed of the following information

   (A) The name of the binary without its file extension and version number of the
   assembly
   (B) A public key and a culture identity
   (C) Both **(A)** and **(B)**
   (D) None of these

j. The _____ is a set of guidelines that describe in vivid detail, the minimal
   and complete set of features a given .Net aware compiler must produce to code
   that can be hosted by the CLR, while at the same time be accessed in a uniform
   manner by all languages that target the .Net platform.

   (A) CTS   **(B)** CLS
   (C) CLI   **(D)** CIL

Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

Q.2 a. Give a brief description of the SIX core features provided in .NET   **(9)**

      b. Draw a workflow diagram and explain the workflow that takes place between
   your source code (which is making use of base class library types), a given
   .NET compiler, and the .NET execution engine.   **(7)**

Q.3 a. How can you compile an application when the logic is split among multiple files? Illustrate through a code example. **(9)**

b. Why XML rather than HTML is used to document type definitions? Briefly explain the meaning of following predefined XML documentation element: <param>, <paramref> **(7)**

Q.4 a. Using a suitable program illustrate basic IO function using the Console class that prompts the user for some bits of information and echoes each item to the standard output stream. **(8)**

b. What is the purpose of Boxing and Unboxing? Explain using suitable examples. **(8)**

Q.5 a. What do you mean by "Inheritance"? In C#, how "is-a" relationship established? Explain using a suitable C# program. **(9)**

b. What is "protected" keyword. Illustrate with example and provide at least one benefit and one downfall of using protected members of a base class. **(7)**

Q.6 a. Can you handle multiple exceptions using a single program of C#? Illustrate using a sample program. What do you mean by "nearest available" catch? **(8)**

b. How is the garbage collection handled in .NET? How does the runtime determine when an object is "no longer needed"? Illustrate with example. **(8)**

Q.7 a. Explain how Interfaces can be implemented using VS.NET using an appropriate piece of code. **(8)**

b. Give a complete list of core collection centric interfaces along with their meanings. **(8)**

Q.8 a. Discuss any four important members of System.Multicast Delegate/System. Delegate? What do they represent? **(8)**

b. What is the purpose of an Event? Where is it used? How is it established? **(8)**

Q.9 a. Give an overview of .NET Assemblies. What are the names of five major elements of a .NET binary? **(8)**

b. What are the Key Elements of an Assembly Manifest? What are their meanings? **(8)**