

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. Delegates in C# are used for

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

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

- 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)

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

- 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)