

AMIETE – CS/IT (Current Scheme)

Time: 3 Hours

DECEMBER 2015

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. .NET execution engine is represented by an assembly named _____.
- (A) mscoree.com (B) mcoree.com
(C) mscoree.dll (D) mcoree.dll
- b. _____ provides a hierarchical means to organize elements of class library.
- (A) using keyword (B) namespace
(C) CLS (D) metadata
- c. The System.Array.Clone () function
- (A) Copies elements into another existing array
(B) Returns a shallow copy object containing all elements in original array
(C) Returns a deep copy object containing all elements of original array
(D) Creates a new instance resulting in identical object
- d. SOAP stands for
- (A) Simple object access protocol
(B) Specific object access protocol
(C) Simple object application protocol
(D) Special object access protocol
- e. Classes declared with sealed keyword
- (A) Behaves like abstract class
(B) Allows class to be inherited
(C) Allows methods of the class to be overridden
(D) Prevents class from being inherited

- f. Which of the following statement is not true for multicast delegates?
- (A) Maintains a list of functions that can be called when delegate is invoked
 - (B) Are used with events
 - (C) The return type of methods pointed by delegate can return different value from delegate return type
 - (D) Multicast delegate can have arguments
- g. What will be the output when the following code is executed?
- ```
using System;
public class test
{
 Public static void Main()
 {
 int i=250;
 string s="hello all";
 object o=s;
 try
 {
 i= (int) o;
 }
 finally
 {
 Console.Write("i = {0}", i)
 }
 }
}
```
- (A) Compile-time error
  - (B) Runtime error message generates and finally block is executed
  - (C) Runtime error message generates but finally block is not executed
  - (D) Runs successfully and displays result
- h. Shared assemblies are deployed in
- (A) Client's subdirectory
  - (B) CLS
  - (C) CTS
  - (D) GAC
- i. C# provides special methods called \_\_\_\_\_ to access data members of a class.
- (A) Accessors
  - (B) delegates
  - (C) events
  - (D) Functions
- j. The code `public class P :Q { }`
- (A) Defines a class that inherits all the methods of Q
  - (B) P Cannot be inherited from Q
  - (C) Defines a class that inherits the public and protected methods of Q only
  - (D) (A) & (C)

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

- 
- Q.2** a. What features makes .NET Platform suitable for developing applications which integrates programs in different languages? (6)
- b. Give a brief description of Common Language Runtime (CLR). Also, explain the workflow between source code, .NET compiler and .NET execution engine diagrammatically. (10)
- Q.3** a. Explain how C # application is build using CSC. exe compiler? Also, explain output centric options of C# compiler. (8)
- b. How can you debug a C# application using command line debugger (cordbg.exe)? Mention five command line flags also. (8)
- Q.4** a. What are various method parameter modifiers in C#? Explain each modifier with suitable function definition and call. (10)
- b. How System.Text.StringBuilder class differs from System.String class? Explain with suitable example. (6)
- Q.5** a. Give the concept of abstraction in object oriented programming. Also, demonstrate a C# abstract class having properties and abstract methods. (10)
- b. What are the advantages of using member hiding in inheritance? Illustrate with suitable example. (6)
- Q.6** a. What is the purpose of garbage collector? Also, describe the role of finalize() method and the process of finalization. (8)
- b. What do you mean by an exception? What are different types to handle an exception in C#? Explain throwing an exception with the help of a custom exception. (8)
- Q.7** a. Demonstrate resolving name clashes by using an explicit interface implementation. (8)
- b. Explain IComparable interface with the help of an example. (8)
- Q.8** a. What are the advantages of implementing callbacks using delegates in .NET Framework? Write a delegate in C# to add two integers. (8)
- b. Demonstrate how events are handled in C# with the help of a simple example. (8)
- Q.9** a. Describe single-file and multi-file assemblies. What are the benefits of constructing multi-file assemblies? (10)
- b. Briefly explain the probing process of private assembly. (6)