

**AMIETE – CS/IT (Current Scheme)**

Time: 3 Hours

**JUNE 2017**

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. SOAP stands for  
(A) Simple object access protocol  
(B) Specific object access protocol  
(C) Simple object application protocol  
(D) Special object access protocol
- b. Shared assemblies are deployed in  
(A) Client's subdirectory  
(B) CLS  
(C) CTS  
(D) GAC
- c. How many times can a constructor be called during lifetime of the object?  
(A) As many times as we call it  
(B) Only once  
(C) Depends upon a Project Setting  
(D) Any number of times before the object is deleted
- d. The \_\_\_\_\_ is a related specification that defines a subset of common types and programming constructs that all .NET programming languages can agree on.  
(A) Common Type System  
(B) Common Language Runtime  
(C) Common Language Specification  
(D) All of these
- e. Can you overload a function in C# with the same number and types of arguments (parameters) but with a different return type?  
(A) Yes  
(B) No  
(C) Yes, but only if function is static  
(D) Yes, but only if function is virtual

f. What happens when the below code is executed?

```
abstract class Shape
{
    public abstract void draw();
}

class Rectangle: Shape
{
    public override void draw();
    //Some more member functions....
}

class CCheck
{
    public static void Main()
    {
        Shape objShape;
    }
}
```

- (A) The code will compile and run
- (B) Compile error for draw method will be encountered first
- (C) Defining the body of the draw() method in class Rectangle would let the class compile.
- (D) None of these

g. Which of the following operators cannot be overloaded?

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

h. .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

i. How do you inherit base class from a derived class in C#.NET?

- (A) Referencing super class
- (B) By using colon and then the name of the base class
- (C) Naming base class
- (D) None of these

j. An example of a user defined integer type which provides a way for attaching names to numbers:

- (A) Class type
- (B) Array type
- (C) Enumeration
- (D) None of these

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

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- Q.2** a. Give a brief description of Common Language Runtime (CLR). Also, explain the workflow between source code, .NET compiler and .NET execution engine diagrammatically. (8)
- b. List any 4 .NET Namespaces and briefly explain their purpose. (8)
- Q.3** a. Describe System Environment class. Illustrate with the help of a program. (8)
- b. Provide reasons which explain the importance of Command Line Compiler (csc.exe) (8)
- Q.4** a. With the help of syntax and an example, explain “foreach” statement used in C# programming. (8)
- b. List and explain the string formatting flags of C#. (8)
- Q.5** a. What are the advantages of using member hiding in inheritance? Illustrate with suitable example. (8)
- b. Explain two pillars of OOP: Encapsulation and Inheritance with respect to C#. (8)
- Q.6** a. Define errors and exceptions. Explain any four members of System.Exception Type. (8)
- b. What do you understand by object lifetime? Write a program to illustrate this. (8)
- Q.7** a. Explain how Interfaces can be implemented using VS.NET using an appropriate piece of code. (8)
- b. Distinguish between shallow and deep copy, as applied to cloning. How would you implement cloning for a custom class using ICCloneable interface. (8)
- Q.8** a. Explain the meaning of following members of System. Multicast Delegate / System Delegate: (2×4)
- (i) Target (ii) Combine( )  
(iii) GetInvocation List( ) (iv) Remove( )
- b. Define Events. Write a program for listening to Incoming Events. (8)
- Q.9** a. Write short notes on the following: (4×2)
- (i) VS .NET Add References Dialog Box  
(ii) GAC Internals
- b. Write a short note on Cross language inheritance (8)