DipIETE – CS (NEW SCHEME)

Time: 3 Hours   **JUNE 2012**   **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. In .NET, CLS means

   (A) Common language specification **(B)** Common language source
   (C) Compiler language specification **(D)** None of the above

b. In the statement, using system, system is a

   (A) namespace   **(B)** class
   (C) object   **(D)** keyword

c. The _____ compiler is used for C#

   (A) CC   **(B)** CSC
   (C) C++   **(D)** CS

d. Which of the following is not a C# keyword?

   (A) Implements   **(B)** If
   (C) Private   **(D)** Delegate

e. Which of the following Statement rethrows Exception?

   (A) throw new System.Exception();   **(B)** throw;
   (C) rethrow Exception();   **(D)** rethrow;

f. Two methods with the same name but with different parameters means_____.

   (A) loading   **(B)** duplexing
   (C) multiplexing   **(D)** Overloading

g. A variable which is declared inside a method is called a _____variable.

    (A) Serial   **(B)** Private
    (C) Local   **(D)** Static

h. What are the features of an abstract class?

    (A) It contain instance variables   **(B)** It contain constructors
    (C) It may extend another class   **(D)** All of the above

i. A Boxing in .Net allows the user to convert _____.

    (A) an integer type to double   **(B)** a reference type to a value type
    (C) a value type to a reference type   **(D)** a double type to integer

j. You can store multiple data types in System.Array.

    (A) TRUE   **(B)** FALSE

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

Q.2   a. What is .NET framework? How do you build components in the .NET Framework? Explain.   **(8)**

      b. Differentiate between value type and reference type supported by C#. Give suitable example to illustrate.   **(8)**

Q.3   a. Write a C# application that calculate and prints the sum of integers from 1 to 10.   **(8)**

      b. Explain Increment and Decrement operators with an example in C#.   **(8)**

Q.4   a. Write a program in C# to sort arrays by implementing static method of sorting on numeric as well as on string data.   **(8)**

      b. What do you mean by nesting of methods? Show by an example the typical use of method nesting.   **(8)**

Q.5   a. What are regular expressions? Where they can be applied?   **(8)**

      b. What do you mean by structures? Design a structure data type named Student containing Name, RollNumber and Total Marks. Also explain significant differences between classes and structures.   **(8)**

Q.6 a. Define a base class Called Room with length and breadth as data memb[...] extend Room to another class StudyRoom with its own data members length, breadth and volume and two methods Area and Volume. Write a program in C# to display Area and Volume on derived objects.   **(10)**

b. What do you understand by inheritance? Describe important characteristics of inheritance.   **(6)**

Q.7 a. What is an interface? What are the major differences between class and an interface?   **(4)**

b. What is operator overloading? Why is it necessary to overload an operator?**(4)**

c. Write a C# program to overload the + operator for adding two fractions.   **(8)**

Q.8 a. What are delegates? Explain with an example how to declare delegate and use of modifier on them.   **(8)**

b. Write a program to display the following output:
```
1
2  2
3  3  3
4  4  4  4
```
                                                                                                                            (8)

Q.9 a. What do you understand by errors? What are different types of errors encountered in C# applications? Identify the errors in the following program:
```
Class Error
{public static void Main()
        { int a=10;
        Int  b=5;
        Int  c=5;
        Int  x=a/(b-c)
        Consol.WriteLine("x=" +x)
        Int  y=a/(b+c)
        Consol.WriteLine("y=" +y)
        }
}
```
                                                                                                                            (8)

b. What is the significance of Mutex class? State any three methods of Mutex class.   **(8)**