ROLL NO. _____

DipIETE – CS (NEW SCHEME) - Code: DC69

Subject: C# & .NET

Time: 3 Hours **Max. Marks: 100**

DECEMBER 2011

NOTE: There are 9 Questions in all.

- **Please write your Roll No. at the space provided on each page immediately after receiving the Question Paper.**
- **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. Arrays, unlike simple built-in types, are passed by ____.

(A) type **(B)** class
(C) reference **(D)** none of the above

b. C# supports _____.

(A) Inheritance **(B)** Multiple Inheritance
(C) Both **(A)** & **(B)** **(D)** None of the above

c. Using a method name to encapsulate a series of statements is an example of the feature that programmers call ____.

(A) grouping **(B)** packaging
(C) encapsulation **(D)** abstraction

d. In some programming languages, such as C#, every class you create is a child of one ultimate base class, often called the ____ class.

(A) Top **(B)** Object
(C) Main **(D)** method

e. An overloaded method is not ambiguous on its own—it becomes ambiguous only if you create an ambiguous situation.

(A) True **(B)** False

f. A method ____ (or method declaration) is the entry point to the method.

(A) title **(B)** space
(C) header **(D)** opener

g. *Arraylist cities = new ArrayList ( )*
will create cities list with the capacity to store ___ objects.

(A) 0 **(B)** 1
(C) 16 **(D)** None of the above

h. By default, the type of an enum is___

(A) int **(B)** byte
(C) short **(D)** None of the above

i. Creating an object is also called instantiating an object.

(A) False **(B)** True

j. Ability to hide the internal details of an object from its users is called_____

(A) Inheritance **(B)** Polymorphism
(C) Encapsulation **(D)** None of the above

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

Q.2 a. What is C#? **(4)**

b. What prompted Microsoft to come up with .NET? **(4)**

c. Explain what is CLR. **(4)**

d. Explain what is MSIL. **(4)**

Q.3 a. By considering operator precedence, list the steps involved in the computation of the following expression:
resultVar += var1 * var2 + var3 % var4 / var5; **(4)**

b. Write an application to prompt for and read two lines of text from the user, extract the integers from that text with the ToInt32 method of class Convert, and store them in variables number1 and number2. Then the application must compare the numbers and display the results of the comparisons that are true. **(12)**

Q.4 a. Write short notes on Method Overloading with examples. How is method overriding different from method overloading? **(8)**

b. Explain in detail the concept of jagged arrays with examples. **(8)**

Q.5 a. String comparisons using == seem to be case-sensitive? How to do a case-insensitive string comparison? **(3)**

b. Some string literals use the @ symbol, and some don't. Comment. **(3)**

c. Explain the concepts of Structures and Enumerators with examples. **(10)**

Q.6 a. How Destructors Work? Compare Destructors with Dispose. **(8)**

b. What is an abstract class? Demonstrate with an example. **(4)**

c. What is the purpose for the classes to be marked sealed? **(4)**

Q.7 a. With the help of examples, explain what is the difference between class and interface in C#? **(8)**

b. Discuss the concept of operator overloading in C#. When is it advisable not to use operator overloading? Provide examples. **(8)**

Q.8 a. Write C# code to illustrate declaring, instantiating, and using a delegate. It must encapsulate a bookstore database that maintains a database of books. It should expose a method, which finds all paperback books in the database and calls a delegate for each one. It must use a class to print out the titles and average price of the paperback books. **(10)**

b. What do you mean by Console class in C#? Distinguish between Read and ReadLine methods. **(6)**

Q.9 a. Using C#, is there a better way to handle multiple types of exceptions rather than a bunch of ugly catch blocks. **(6)**

b. What are the things to avoid when throwing exceptions? **(4)**

c. What is a ThreadPool? Describe the steps involved in using a ThreadPool. **(6)**