

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)