

DipIETE – CS (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. _____ represents a compliance level that most languages should adhere to attain interoperability.
- (A) Common Type System
(B) Common Language Runtime
(C) Common Language Specification
(D) Unified Base Classes
- b. C# is _____ language
- (A) Functional (B) Procedural
(C) Structured (D) Object-oriented
- c. Which of the following is not a reference type in C#?
- (A) struct (B) class
(C) interface (D) array
- d. In C# variable number of arguments can be passed by using _____ keyword.
- (A) ref (B) out
(C) static (D) params
- e. _____ class modifier is used to prevent further inheritance.
- (A) abstract (B) static
(C) sealed (D) virtual

- f. Structure's data members are _____ by default.
- (A) public (B) private
(C) protected (D) internal
- g. Which of the following statement is false with regard to abstract methods?
- (A) It cannot have implementation
(B) It can be declared only in abstract class
(C) It can take static or virtual modifier
(D) An abstract declaration is permitted to override a virtual method
- h. _____ operator cannot be overloaded.
- (A) & (B) !=
(C) ++ (D) &&
- i. In C# Thread.Sleep(time) method takes time in
- (A) minutes (B) seconds
(C) milliseconds (D) nanoseconds
- j. Which of the following is not a .NET exception class?
- (A) ArgumentNullException (B) StackOutOfRangeException
(C) DivideByZeroException (D) FormatException

Answer any FIVE Questions out of EIGHT Questions.

Each question carries 16 marks.

- Q.2** a. Briefly explain the advantage of framework base classes in .NET. (5)
b. What is the purpose of 'using' directive in C# program? Explain with example. (5)
c. With a suitable example explain the concept of boxing and unboxing. (6)
- Q.3** a. Explain how a conditional operator evaluates an expression in C# to make decision? Also, compare it with if-else statements. (8)
b. How does foreach statement differs from for loop? Using foreach statement, write a program in C# to print all values in an integer array. (8)
- Q.4** a. What is method overloading? Demonstrate it with the help of C# code. (8)
b. What are jagged arrays? Write a program in C# to sort a list of numbers. (3+5)

- Q.5** a. What are mutable strings? Explain the following methods and properties of StringBuilder class. (8)
- (i) Append()
 - (i) Insert()
 - (ii) Replace()
 - (iv) Remove()
 - (v) Capacity
 - (vi) Length
- b. What do you mean by a structure? How a structure is declared in C#? Illustrate nesting of structures with an example. (8)
- Q.6** a. What do you mean by a property? What are various features of property? Why they are referred to as smart fields? (8)
- b. What is polymorphism? Show how polymorphic behaviour can be achieved with the help of virtual methods. (8)
- Q.7** a. Demonstrate the use of interface to support the concept of multiple inheritance. (8)
- b. What is an operator method? Describe its syntax. Show how a binary operator “+” can be overloaded in C#. (8)
- Q.8** a. What do you mean by multicast delegates? Demonstrate with an example. (8)
- b. Briefly describe System.Console class and its various Console input and output methods. (8)
- Q.9** a. What are run-time errors? Give some examples. (4)
- b. Briefly describe the usage and purpose of finally statement while handling exceptions. (6)
- c. Briefly describe the process of creating and starting up threads with an example. (6)