

**DiplETE – CS**

Time: 3 Hours

**DECEMBER 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. The code that satisfies the CLR at runtime in order to execute is referred to as \_\_\_\_\_ code.

- (A) source (B) object  
(C) managed (D) None of these

b. C# supports multiple-inheritance.

- (A) True (B) False

c. \_\_\_\_\_ are symbols used for grouping and separating code. They define the shape and function of a program.

- (A) Literals (B) Operators  
(C) Punctuators (D) None of these

d. \_\_\_\_\_ Strings are those strings that start with @ symbol

- (A) Verbatim (B) To  
(C) Concatenating (D) System

e. \_\_\_\_\_ is not a method of a Thread class

- (A) Join (B) Start  
(C) Stop (D) Resume

f. It is possible to create methods that have the same name, but different parameter lists and different definitions. This is called method \_\_\_\_\_

- (A) overcreating (B) overtaking  
(C) protecting (D) overloading

- g. When we call a method in an object, C# matches up the method name first and then the number and type of parameter to decide which one of the definitions to execute. This process is known as\_\_\_\_\_.
- (A) Encapsulation (B) Polymorphism  
(C) IDE (D) None of these
- h. Which of the following is not from the Input / Output streams?
- (A) Console.In (B) Console.Out  
(C) Console.InOut (D) Console.Error
- i. An exception is a condition that is caused by a \_\_\_\_\_ error in the program.
- (A) Compiling (B) Runtime  
(C) Both (A) & (B) (D) None of these
- j. After a priority is set for a thread, the thread runs according to its priority. This means that a Below Normal Priority thread runs after the\_\_\_\_\_ priority thread but before the \_\_\_\_\_ priority thread.
- (A) Normal, Lowest (B) Lowest, Normal  
(C) Above Normal, Lowest (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. What features of C++ have been dropped from C# and what enhancements have been made to C++ in C#? (8)
- b. What is boxing? Illustrate through examples. (6)
- c. When unboxing, we need to use explicit cast. Why? (2)
- Q.3** a. What are the various forms of if statement? Give uses of any two forms of if statement. (8)
- b. Write a program to count the even and odd numbers in a list of numbers (103, 112, 11, 23, 40, 58, 50, 60, 56, 71, 81). (8)
- Q.4** a. What is “VALUE PARAMETER”? Illustrate through an example. (8)
- b. What do the System.Array Class methods Sort( ) and Reverse( ) do? Write a program to demonstrate to sort and reverse an array, by sorting the list of numbers ( 88, 76, 55, 49, 90, 22, 104).What will be the output after Sorting? What will be the output after reversing? (8)
- Q.5** a. What are “regular expressions”? What are they used for? State any four examples of regular expressions. (8)

- b. What is a struct? What are the differences between classes and structs? (8)
- Q.6** a. Describe the concept of member access modifiers. List the C# access modifiers alongwith their accessibility controls. Illustrate with an example.Can we declare more than one member under a visibility modifier? (8)
- b. What is an containment inheritance? Explain by giving an example. (4)
- c. What is a subclass Constructor? (4)
- Q.7** a. How an interface can be extended? Can you combine several interfaces together into a single interface? Can subinterfaces define the methods declared in the superinterfaces? Explain. (8)
- b. What is the need for operator overloading? (4)
- c. What can be the possible programming errors while implementing operator overloading? (4)
- Q.8** a. What is another name for of multicast delegates? What conditions must be satisfied by of multicast delegates? Write a small C# code to illustrate implementation of multicast delegates. What would be the output? (8)
- b. Write a C# code to display the following on the screen:
- Display Begin
- ```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
6 6 6 6 6 6
7 7 7 7 7 7 7
8 8 8 8 8 8 8 8
9 9 9 9 9 9 9 9 9
```
- Display End (8)
- Q.9** a. Write a program to show a simple implementation of nested try blocks. (8)
- b. What is thread pooling? How is it implemented in the .NET framework? (8)