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Department of Library
 SRM Institute of Technology
 S.S.N. 2nd Stage, BANGALORE - 7

06CS/IS761

Seventh Semester B.E. Degree Examination, May/June 2010
C# Programming and .NET

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting
 at least TWO questions from each part.**

PART - A

- 1
 - a. Briefly explain the history of .NET. Explain the building components of .NET and their responsibilities. (06 Marks)
 - b. Explain Jitter, along with its benefits. Explain how CLR host an application on .NET platform. Give the block diagram. (06 Marks)
 - c. What is an assembly? Explain each component of an assembly. Differentiate between single file assembly and multifile assembly. (08 Marks)

- 2
 - a. Explain how CSC. exe computer is used to build C # application. Explain any five flags with appropriate examples. (06 Marks)
 - b. Write a program to count the number of object instances created inside or outside of an assembly. (08 Marks)
 - c. With a program, demonstrate, how an assignment operation, between value types and reference types differ. (06 Marks)

- 3
 - a. Explain the method parameter modifiers. Demonstrate with a function definition and function call for each modifier. (06 Marks)
 - b. Explain the functions of system, object class. Give overridden definition for ToString() and equals (). (08 Marks)
 - c. Write a program in C# to read a Jagged array and display the sum of all the elements of three inner arrays. (06 Marks)

- 4
 - a. Explain how encapsulation is enforced in C#, with a small program for each method. (08 Marks)
 - b. Implement the following hierarchy of classes to demonstrate abstract functions in C#.


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          Class employee : [Fields : name, Emp_id, Basic_sal,
                        Methods : abstract method compute-Bonus( )
                        virtual method calculate - Sal( )
                        ]
          Class manager : Derived from employee
                        [ Fields : Total_Sales
                        Methods : comute_Bonus( ) to give
                        - 5 % of basic_Sal as bonus if
                        Total_Sales > 10,000
                        - 2 % of basic_Sal as bonus if
                        Total_Sales < 10,000
                        Calculate_Sal( ) to calculate the salary as basic + 12 % DA + Bonus.
                        ]
          Write driver program to create an array of 3 managers and display their total salary.
          Use appropriate constructors. (12 Marks)
          
```

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
 2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

PART – B

- 5 a. Explain the process of finalizing objects in .NET environment. Give the members of system.GC and explain their usage, with examples. (09 Marks)
- b. Write a program in C# to throw and handle the following exceptions in banking application.
MinimumBalanceException : when balance is less than 1000
ArgumentOutOfRangeException : If the amount deposited is greater than the capacity of an int. which is an argument to deposit function. Display the details of each exception. Use required members and methods to support the logic. (11 Marks)
- 6 a. What is an interface? With a program demonstrate the implicit and explicit access of interfaces. (08 Marks)
- b. Write a program in C# to sort an array of student objects having rollno, name and marks in two subjects.
– display the array sorted on names
– display the array based on average marks. (12 Marks)
- 7 a. What are delegates? Explain the members of system. MulticastDelegates : Give a small program to implement multicasting. (10 Marks)
- b. Write a program in C# to implement operator over loading of + and – for adding subtracting two square matrices. (10 Marks)
- 8 Write short notes on :
- a. Interfaces of system collection
- b. Indexers
- c. Shared assemblies
- d. Mutable and immutable strings. (20 Marks)
