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10CS761

**Seventh Semester B.E. Degree Examination, June/July 2019**

**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. Explain features and building blocks of .Net framework. (10 Marks)  
b. What is an assembly? Explain each component of an assembly. Differentiate between single file and multi file assembly. (10 Marks)
- 2 a. Explain how csc.exe command is used to build C# applications on .NET. Explain any five flags with appropriate examples. (06 Marks)  
b. What is cordbg.exe? List and explain any five command line flags recognized by cordbg.exe while running .NET assemblies under debug mode. (08 Marks)  
c. Explain any three C# preprocessor directives. (06 Marks)
- 3 a. What is the role of master node System.Object? Explain the functionality of the methods Equals( ) and ToString( ). (06 Marks)  
b. Write a C# program to read a jagged array and display the product of all the elements of the three inner arrays. (06 Marks)  
c. Explain the following terms with an example:  
i) ref parameter  
ii) params  
iii) out  
iv) boxing and unboxing (08 Marks)
- 4 a. What are the three pillars of object oriented programming in C#? Differentiate between “is-a” and “has-a” relationship with examples. (08 Marks)  
b. Write a C# application which defines a class shape. With four data members length, breadth, height and radius, appropriate constructors and methods to calculate the volume of cube, cone and sphere. Also write shapeapp, which creates three objects ie cube, cone and sphere using appropriate constructors and calculate their volume with the help of the above class methods. (08 Marks)  
c. Write a C# program to explain sealed class and method. (04 Marks)

**PART – B**

- 5 a. What are bugs, errors, and exception? List and explain core members of System.Exception type. (10 Marks)  
b. Explain any five methods of file System.GC type. (10 Marks)
- 6 a. What is an Interface? Explain with an example any three Interfaces of System.Collection namespace. (08 Marks)

- b. Write a C# program which contains the following:
- An Interface dimension with methods length( ) and width( ) which returns length and width in centimeters.
  - Another Interface called metric dimension with methods lengthinches( ) and widthinches( ) which returns length and width in inches.
  - A class box that implements both the above said interfaces. This class has two members lengthinches and widthinches. Define appropriate constructors for the class box. Write main program to create an instance of box and to display box length and width in inches and centimeters by invoking the appropriate methods of two interfaces. (08 Marks)
- c. Briefly explain with an example, explicit interface implementation. (04 Marks)
- 7 a. What are delegates? Explain the members of System.Multicast delegates. Give a small program to implement multicast delegate. (10 Marks)
- b. Write a C# program to overload plus and minus operator for two square matrices. (06 Marks)
- c. What is an event? Explain with an example event declaration. (04 Marks)
- 8 a. With a neat diagram, explain physical view and logical view of .NET Assemblies. (06 Marks)
- b. List the key elements and core CIL Assembly Manifest. (10 Marks)
- c. Write short notes on private assemblies. (04 Marks)

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