# Seventh Semester B.E. Degree Examination, Jan./Feb. 2021
## 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. What are the core features provided by .NET. **(06 Marks)**
   b. Explain the .NET namespace "system". **(04 Marks)**
   c. Explain the building blocks of .NET platform, illustrate the workflow that take place between a source code .NET compiler and the .NET execution engine. **(10 Marks)**

**2**  a. Describe the output options of the C# compiler. **(05 Marks)**
   b. Write source code in C# to compute the square root of a number passed as a command line argument as a **(05 Marks)**
   c. What are C# preprocessor symbol? Explain code region and conditional code compilation. **(10 Marks)**

**3**  a. Explain any 5 members of system.Array. Illustrate the implementation of sort( ) and Reverse ( ) methods. **(10 Marks)**
   b. What is an object and how is it created? **(04 Marks)**
   c. Explain 'out' and 'params' method parameter modifiers. **(06 Marks)**

**4**  a. What are the two forms of inheritance? Explain with simple examples. **(10 Marks)**
   b. State the characteristics of abstract classes and abstract methods. **(05 Marks)**
   c. What is "Default Public Interface" of a Type? Give the distinction between method visibility and type visibility. **(05 Marks)**

## PART – B

**5**  a. What is an exception? Explain the four keywords of exception Handling with an example. **(10 Marks)**
   b. Write a note on Garbage collection optimization using generations. **(05 Marks)**
   c. Explain any five members of system.GC Type. **(05 Marks)**

**6**  a. What is an interface? How to implement an interface using C#. **(04 Marks)**
   b. Write a C# program which contains the following :
   - The class computation implements two interfaces, Addition and Multiplication
   - It declares two data members and defines the code for the methods Add ( ) and Mul ( ).
   - A main Class Test to the computation object to cast interface types to reference their members. **(10 Marks)**
   c. Write a short note on IComparable and ICollection interface. **(06 Marks)**

**7**  a. What is a delegate? Explain the members of System.MulticastDelegates. **(08 Marks)**
   b. Explain the concept of Events. **(04 Marks)**
   c. Explain the advanced keyword checked, unchecked, unsafe, and volatile. **(08 Marks)**

**8**  a. Explain Singlefile and Multifile Assemblies. **(07 Marks)**
   b. What are the two views of an Assembly? Explain them with a neat diagram. **(06 Marks)**
   c. Explain private Assemblies and shared Assemblies. **(07 Marks)**

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