P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Fifth Semester, B.E. - Information Science and Engineering
Semester End Examination; Feb. - 2021
C# Programming and .NET

Time: 3 hrs   Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

1 a. Define **.**NET. Explain the limitations and complexities found within the technologies prior to **.**NET. Briefly explain how **.**NET attempts to simplify that? `10`

b. Explain the role of CLS, CTS and CLR in detail. `10`

2 a. State the purpose of CSC**.**exe. How do you build C# application using CSC**.**exe? Write source code in C# to compute the sum, subtraction and multiplication of two numbers passed as command line arguments. `10`

b. Write a C# program, to illustrate the use of at least any six C# preprocessor directives. `8`

c. List any four members of the System**.**Environment class. `2`

UNIT - II

3 a. Write a C# Program to perform simple arithmetic operations (Addition, Subtraction, Multiplication and Division) on two numbers and display the result in Decimal, Hexadecimal, Exponential and Normal forms. `6`

b. Explain how you would override the following virtual members of System**.**Object class for a user defined class:
   i) ToString( )
   ii) Equals( )
   iii) GetHashCode( ) `6`

c. Write a C# program to multiply two matrices using Rectangular arrays. `8`

4 a. Illustrate the purpose of inheritance in C# with an example. `5`

b. What is encapsulation? Explain the two ways of enforcing encapsulation with an example for each. `10`

c. Explain the need of Read-Only fields with an example. `5`

UNIT - III

5 a. With a C# program illustrate the need of Sealed Classes. `6`

b. Write a C# program that will read a name from the keyboard and display it on the screen. The program should throw an exception when the length of the name is more than 15 characters. Design your own exception. `8`

c. Explain the sequence of events involved in finalization process. `6`

6 a. Define Interface. Explain the three different ways of obtaining interface references with example. 10

  b. With examples, explain how to build cloneable and comparable objects? 10

UNIT - IV

7 a. With a C# program illustrate the use of ArrayList class. 6

  b. Illustrate the use of callback interfaces with a C# program. 6

  c. Write a complete C# program to compute and display sum, difference, and multiplication of two numbers by writing appropriate methods which could be called through multicast delegate method of programming. 8

8 a. With an example, discuss the advanced keywords of C#: checked, unsafe, stack alloc, volitle and size of. 10

  b. Write a C# program to demonstrate overloading of the following operators:

  i) +

  ii) −

  iii) *

  iv) /

  10

UNIT - V

9 a. Illustrate the use of creating custom conversion routine with a C# program. 10

  b. Explain the benefits provided by the assembly format. 10

10 a. How C# support cross language inheritance? Discuss with examples. 10

  b. What is shared assembly? How to build and consume a shared assembly? Illustrate with an example. 10

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