Fifth Semester MCA Degree Examination, June/July 2018
Programming using C# and .NET

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions.*

1   a.   Explain the architecture and components of .NET frame work.   **(10 Marks)**
    b.   What are CTS types? Explain in brief.   **(06 Marks)**
    c.   Explain the benefits of .NET framework.   **(04 Marks)**

2   a.   List and explain preprocessor directives that are supported in C#. Write a code snippet to illustrate conditional preprocessor directives.   **(10 Marks)**
    b.   Bring out the differences between value types and reference types. Also explain boxing and unboxing in C#.   **(06 Marks)**
    c.   Write the output of the following set of code and justify your answer:

```
class Program {
        public static void Main(stry[ ]args)
        {
            int i,  j;
            for (i = 1; i ≤ 3 ; i++ )
            {
              j = 1;
              while(i%j = = 2)
                 j++;
              console.WriteLine(i + " " + j) ;
            }
        }
    }
```
                                                                      (04 Marks)

3   a.   Write a program in C# to demonstrate array of objects, considering Employee class with suitable methods to read and display Employee details.   **(10 Marks)**
    b.   Explain the following :
         (i)   Static constructor and methods
         (ii) Namespaces in C#.   **(10 Marks)**

4   a.   Explain with example the method of implementing encapsulation with the general method and using class properties.   **(10 Marks)**
    b.   Distinguish between the following :
         (i)   Compile time polymorphism and runtime polymorphism.
         (ii) Sealed class and abstract class.   **(10 Marks)**

5   a.   Define a method that would sort an array of integers. Incorporate exception handling mechanism for "Index out of bounds" situation. Develop a main method that employs this method to sort a given set of integers.   **(10 Marks)**
    b.   What are delegates? Define a delegate in C# and demonstrate multicasting of delegates.
                                                                      (06 Marks)
    c.   Write a short note on events in C#.   **(04 Marks)**

6 a. Design an event driven GUI and write a windows forms application to display the square of a number entered through a textbox. **(06 Marks)**

   b. List and explain the control class properties and methods. **(10 Marks)**

   c. Write a short note on the following controls:
      (i)   Check Box
      (ii) Text Box **(04 Marks)**

7 a. Explain the architecture of ADO.Net with a neat diagram. **(10 Marks)**

   b. Explain the procedure of getting connected to a database and running insert, delete and select queries considering the database student containing the table tbl_attendance (usn, name, percentage). **(10 Marks)**

8 a. What do you mean by validating input in a web form? Explain different validation controls in ASP.Net web forms. **(10 Marks)**

   b. Explain session tracking using cookies and Http session state. **(10 Marks)**

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