10CS/IS761

Seventh Semester B.E. Degree Examination, June/July 2018
C# Programming and .NET

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions, selecting atleast TWO questions from each part.*

PART – A

1   a. What are the building blocks of •NET with a neat diagram given the relationship between •NET runtime layer and base class library? **(10 Marks)**
    b. Explain the following terms : i) CLS ii) CIL iii) CLR iv) Manifest v) Assembly. **(10 Marks)**

2   a. What is the role of response files in C# program development using command line compiler (CSC·exe). **(07 Marks)**
    b. What is a command line Debugger? List and explain any five command line flags recognized by command line debugger. **(08 Marks)**
    c. Write a note on •NET names paces in C#. **(05 Marks)**

3   a. Explain any five members of system·object. **(05 Marks)**
    b. Write a function SearchAndReplace(src, pattern, rep) to replace the 'pattern' string with the 'rep' string in the 'src' string, if found, else leave 'src' unaltered. Use only system·string members. **(06 Marks)**
    c. Explain with examples all the parameter passing mechanisms in C#. **(09 Marks)**

4   a. What are the three pillars of object oriented programming in C#, differentiate between 'is a' relationship with appropriate examples. **(10 Marks)**
    b. How can you achieve encapsulation properties using get, set and value keyword. **(04 Marks)**
    c. Write a C# program to create a base class called BIRD and derive from this class, to new classes called flying and non-flying. Consider the name, color, and country as data member of the class BIRD. Use appropriate member function and also write a driver program. **(06 Marks)**

PART – B

5   a. What do you understand by exceptions in C#? Write a C# program to build a custom exception which raises an exception when the argument passed is a negative number. **(10 Marks)**
    b. What is object lifetime? Explain the sequence of events involved\ in finalization process. **(10 Marks)**

6   a. Explain interfaces with multiple base interfaces using suitable examples. **(10 Marks)**
    b. Design a linked list class in C# with methods to insert and delete nodes. The list should have the capacity to store any types of data. **(10 Marks)**

7   a. Explain single cast and multicast delegates in C# with examples. **(10 Marks)**
    b. Write a C# program to add and subtract two complex numbers by writing add and subtract methods which could be called through the delegate method of programming. **(10 Marks)**

8   a. It is required to maintain a dictionary of names and telephone numbers of persons we may need to retrieve the telephone numbers of a person, given his name. Design a C# program using indexers. **(10 Marks)**
    b. Explain the following : i) Events in C# ii) Garbage collection. **(10 Marks)**

* * * * *