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53 (CS 814) CNFN

2018

C# AND .NET FRAMEWORK

Paper : CS 814

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer **any five** questions.

1. (a) Differentiate between : $2 \times 5 = 10$
- (i) Private and public
 - (ii) Value type and reference type variables
 - (iii) OLE and COM technology
 - (iv) Array Class and Arraylist Class
 - (v) String and String Builder Classes.

Contd.

(b) Define the following terms briefly :

2×5=10

(i) .NET technology

(ii) Namespace

(iii) Class

(iv) Protected

(v) Method.

2. (a) What is alias ? How can it be achieved ?

2+3=5

(b) Mention *four* benefits of .NET approach.

5

(c) Mention *five* functions of Common Language Runtime (CLR).

5

(d) Why C# is called type safe ?

5

3. (a) Define output parameters. Write a program to calculate the area of a rectangle using output parameter.

2+4=6

(b) Write a program to insert 20 cities using an ArrayList () class.

5

(c) Write a method to check whether an element is present in an array or not. If present, the method will return true.

5

(d) Define boxing and unboxing. Give an example of each.

2+2=4

4. (a) What is copy constructor? Write a program in C# showing the use of a copy constructor.

2+4=6

(b) Write a program in C# showing the use of nested method invoking.

4

(c) Define a Time class containing the following members :

10

- Two integer data members minutes and hours
- Two overloaded constructors
- One method to display the class data members

One of the constructors takes two integer parameters to assign values to two data members and the other constructor takes one integer parameter representing total number of minutes and convert it into hours and minutes.

Write a program to verify the operation of the constructors and the method.

5. (a) Give an example how Equals () method can be used for testing the equality of strings. 4
- (b) Write a program that reads the name Mother India $3 \times 2 = 6$ into two separate string objects and then concatenates them into a new string using
- (i) + Operator
- (ii) Append Method.
- (c) Write a program that reads a line of text containing three words and then replace all the blank space with an underscore (_). 5
- (d) Write a program showing the use of constructor. 5
6. (a) Give *five* differences between structures and classes. 5
- (b) What is static constructor? How does it differ from non-static constructor? $2 + 3 = 5$
- (c) Write a program showing the use of overloaded constructor. 5

- (d) Write a program that will read a string and rewrite it in alphabetical order. For example, the word STRING should be written as GINRST. 5

7. Write short notes : *(any four)*

5×4=20

- (a) Inclusion polymorphism
 - (b) Virtual method
 - (c) Param
 - (d) .NET Framework
 - (e) Switch Statement.
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