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53 (CS 814) CNFW

2014

## 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) Distinguish between the following :

2×5=10

- (i) Protected Vs Private
- (ii) Structs Vs Classes
- (iii) Value type Vs Reference type
- (iv) String class Vs String Builder Class
- (v) OLE Technology Vs COM Technology

Contd.

- (b) Mention the benefits of the .NET approach. What are the different tasks of framework base classes ?  $5+5=10$
2. (a) What are parameter arrays ? Explain with an example. Write a program to add  $n$  cities in an array list and sort them.  $2+3+5=10$
- (b) Define the terms .Net, .Net framework, .Net technology. Write a program to insert a word in a specific location of a line of text.  $1+2+2+5=10$
3. (a) What is an alias ? Where and how it is used ? Why do we use the using directive in a C# program ?  $2+3+5=10$
- (b) Write a program in C# to multiply two matrices using methods.  $10$
4. (a) Mention the steps involved in overloading an operator. Write a program to overload the binary operator plus.  $3+7=10$
- (b) Differentiate between overriding methods and hiding methods. Give an example of each.  $2+4 \times 2=10$

5. (a) Briefly explain the pillars of OOP. What is copy constructor ? Why do we need such a constructor ? 6+2+2=10

(b) Design a class to represent a bank account. Include the following as data members :

(i) Depositor name 2+8=10

(ii) A/C no

(iii) A/C type

(iv) A/C balance

Methods :

(i) to assign initial values

(ii) to deposit an amount

(iii) to withdraw an amount

(iv) to display the name and balance

Write a program to demonstrate the working of the various class members.

6. (a) Define operation polymorphism with an example. 10

(b) What do mean by inclusion polymorphism ? Explain with a suitable example. 10

7. Write short notes on the following : **(any four)**

5×4=20

- (a) Multilevel inheritance
- (b) Class visibility
- (c) Delegates
- (d) Events
- (e) Enumerations
- (f) Mutable String
- (g) CLR