

C#

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Science Information Technology

TYBSc-IT

Semester 6

University Exam

University of Mumbai

- N.B.**
- (1) Question No. 1 is **compulsory**.
 - (2) From question Nos. 2 to 7, attempt any **four** questions.
 - (3) Make suitable assumptions wherever **necessary** and state the assumptions made.
 - (4) Answer to the **same** question **must be written together**.
 - (5) Numbers to the **right** indicates marks.
 - (6) Draw **neat** labelled diagrams wherever **necessary**.

1. Answer the following questions :-

- (a) What is Virtual Object System ? Explain the need of virtual object system in C#. 5
- (b) List the languages supported by the .NET Framework. And state the benefits of .NET strategy. 5
- (c) What is label ? Explain with an example. 5
- (d) What is namespace ? Explain the use of system.Text namespace. 5

2. (a) Explain the concept of early binding and late binding with an example. 7
- (b) Explain how class is different from interface. 7
- (c) Write a program to print a multiplication table from 1 X 1 to 10 X 10 as shown below :- 6

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1 2 3 4 5 6 7 8 9 10
2 4 6 8 ..... 20
.....
9 18 27 ..... 100

```

3. (a) What is delegate ? Where it is used ? Write all the steps for creating and using delegate. 7
- (b) Explain the concept of abstract classes and methods with an example. 7
- (c) Explain the concept of finally statement using an example. 6
4. (a) What is an event ? Give two examples where events are used. 7
- (b) What is property ? Why are they referred to as smart fields ? Also explain the read_only property. 7
- (c) Define a base class called Animal with following members :- 6
 - A string type data member to store the name of the animal
 - An integer member to store the age of the animal in years
 - A method to display the name and age of the animal. Derive two classes Cat and Dog from Animal class. Then, write a driver program to create Cat and Dog objects with suitable values. Display the contents of the objects by calling the Display method on the derived objects.
5. (a) What is overriding a method ? How is it achieved in C# ? 7
- (b) Explain the concept of jagged array with an example. 7
- (c) Give comparison between *for* and *for each* loop with an example. 6

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6. (a) Discuss the differences between overloading comparison operators and overloading arithmetic operators. 7
- (b) What is "fallthrough" in switch statement? How it is achieved in C#? 7
- (c) Find the errors, if any :- 6
- (i) structure Employee
 { string name;
 float age;
 }
- (ii) enum Color : byte
 { Red, Blue = 300, Green }
- (iii) interface A
 { void Mul(); }
 interface B: A
 { void Mul(); }
7. (a) Explain verbatim and immutable strings with an example. 7
- (b) What is .NET framework? Explain the role of CLR in .NET framework. 7
- (c) Solve the following :- 6
- (i) x = 1; y = 1;
 if(n>0)
 x = x+1; y = y-1;
 What will be the values of x and y if n assumes a value (a) 1 and (b) 0?
- (ii) State whether the following statements would accomplish :-
- int m = s1.IndexOf("CSHARP");
 - string s2 = s1.Insert(s1.IndexOf("OK"), "not");
 - int n = string.Compare(s1, s2, false);