

## **Five years Integrated M.Sc.(IT)(Semester 4)**

### **Question Bank**

060010408: GUI Programming

#### **Unit -1 Introduction to .NET Framework and C# Fundamentals**

**Answer the following questions in short.**

1. What is .net framework?
2. What is JIT?
3. What is garbage collection?
4. What does assemblies include?
5. State whether True or False –“Variable naming can be start with @ Character.”
6. Which of the following is not a legal variable name:
  - myVariableGood
  - 99Flake
  - \_floor
  - time2GetJiggyWidIt
  - wrox.com
7. Is the string “supercalifragilisticexpialidocious” too big to fit in a string variable? If so,why?
8. What is CLR?
9. State difference between managed and unmanaged code.
10. Where to place the reusable code accessible to all applications?
11. What do you mean by native code?
12. Define linking process.
13. Justify- “c# is a type safe language.”
14. List three common types of applications.
15. What is the difference between executable application file and libraries?
16. State difference between private and shared assemblies.
17. What is CIL?
18. By considering operator precedence, list the steps involved in the computation of the following expression:

- `resultVar += var1 * var2 + var3 % var4 / var5;`
19. What is intellisense?
  20. What is a satellite assembly?
  21. State the difference between `Write()` and `WriteLine()` with example.
  22. Give the difference between `ReadLine()`, `Read()`, `ReadKey()` in C#.
  23. What are Console Applications and Windows Forms Applications?
  24. What are the similarities between C# and JAVA?
  25. What are namespaces in C#.NET?
  26. Can we use multiple inheritances in C#? Justify your answer.
  27. Write at least four advantages of C#.
  28. List at least four features supported in C#.
  29. What assembly manifest store?
  30. What is the difference between public, static and void in C#?

**Answer the following questions in detail.**

1. Write a short note on .net framework and its architecture.
2. Write down the steps to create .net application.
3. Write a note on CLR.
4. Explain in detail types of application in c#.
5. Write a note on main features of Visual studio.
6. Write down the steps to create console application and explain each in detail.
7. Write a note on: Solution explorer, Property window and error window.
8. Write down the steps to create window form application and explain each in detail.
9. Explain steps to create c# application.
10. Explain .net class library and common language specification.
11. What is assembly explain in detail.
12. Compare and Contrast c# and Java.
13. Explain features of c# in detail.

**Select most appropriate answer from the given options.**

1. Which of the following statements are TRUE about the .NET CLR?
  1. It provides a language-neutral development & execution environment.
  2. It ensures that an application would not be able to access memory that it is not authorized to access.
  3. It provides services to run "managed" applications.
  4. The resources are garbage collected.

5. It provides services to run "unmanaged" applications.
- A. Only 1 and 2
  - B. Only 1, 2 and 4
  - C. 1, 2, 3, 4
  - D. Only 4 and 5
  - E. Only 3 and 4
2. Which of the following are valid .NET CLR JIT performance counters?
- 1. Total memory used for JIT compilation
  - 2. Average memory used for JIT compilation
  - 3. Number of methods that failed to compile with the standard JIT
  - 4. Percentage of processor time spent performing JIT compilation
  - 5. Percentage of memory currently dedicated for JIT compilation
- A.1, 5  
B.3, 4  
C.1, 2  
D.4, 5
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B.3, 4  
C.1, 2  
D.4, 5
4. Which of the following jobs are NOT performed by Garbage Collector?
- 1. Freeing memory on the stack.
  - 2. Avoiding memory leaks.
  - 3. Freeing memory occupied by unreferenced objects.
  - 4. Closing unclosed database collections.
  - 5. Closing unclosed files.
- A.1, 2, 3

- B.3, 5  
C.1, 4, 5  
D.3, 4
5. Which of the following assemblies can be stored in Global Assembly Cache?
- A. Private Assemblies
  - B. Friend Assemblies
  - C. Shared Assemblies
  - D. Public Assemblies
  - E. Protected Assemblies
6. Which of the following is the root of the .NET type hierarchy?
- A. System.Object
  - B. System.Type
  - C. System.Base
  - D. System.Parent
  - E. System.Root
7. Which of the following security features can .NET applications avail?
- 1. PIN Security
  - 2. Code Access Security
  - 3. Role Based Security
  - 4. Authentication Security
  - 5. Biorhythm Security
- B. 1, 4, 5
  - C. 2, 5
  - D. 2, 3
  - E. 3, 4
8. Which of the following components of the .NET framework provide an extensible set of classes that can be used by any .NET compliant programming language?
- A. NET class libraries
  - B. Common Language Runtime

- C. Common Language Infrastructure
  - D. Component Object Model
  - E. Common Type System
9. Which of the following statements are correct about a .NET Assembly?
- 1. It is the smallest deployable unit.
  - 2. Each assembly has only one entry point - Main(), WinMain() or DLLMain().
  - 3. An assembly can be a Shared assembly or a Private assembly.
  - 4. An assembly can contain only code and data.
  - 5. An assembly is always in the form of an EXE file.
- A. 1, 2, 3  
B. 2, 4, 5  
C. 1, 3, 5  
D. 1, 2
10. The \_\_\_\_ model does not offer a model for source code reuse.
- A. COM+
  - B. DCOM
  - C. COM
11. \_\_\_\_ allow custom items of information about a program element to be stored with an assembly's metadata.
- A. Properties
  - B. Attributes
  - C. Methods
  - D. Classes
12. What does IDE stand for?
- A. Integrated Development Environment
  - B. Integrated Design Environment
  - C. Interior Development Environment
  - D. Interior Design Environment
  - E. None of the above.
13. Which of the following is not part of the IDE:
- A. Code editor window
  - B. Properties window

- C. Form layout window
  - D. General window
14. The application name always appears in the:
- A. Properties window
  - B. Intermediate window
  - C. Code window
  - D. Title bar
15. In the IDE, which of following is used to design the layout of an application?
- A. Form Designer window
  - B. Project Explorer window
  - C. Context Menu
  - D. Form Layout window
16. Which task is accomplished in the Code editor?
- A. Adding forms to the project
  - B. Adding controls to the form
  - C. Adding event procedures to the form
  - D. Both a and b.
17. Which class is used to run the EXE application file in C#.NET?
- A. Process
  - B. Application
  - C. Exe
  - D. Execute
18. The Visual Studio environment contains many different windows. Which window will be the user interface when the project is running?
- A. The Toolbox
  - B. The Solution window
  - C. The Properties window
  - D. The Form Designer window
19. Which window do you open if you want to see all of the objects that you can add to a form?
- A. The Toolbox
  - B. The Solution window

- C. The Properties window
- D. The Form Designer

20. How many levels of compilation happens in .NET framework.

- A. One
- B. Two
- C. Three
- D. Four

**Fill in the blanks.**

1. You can have \_\_\_\_\_ number of global.asax file per project.
2. CLR is the dot net equivalent of \_\_\_\_\_.
3. The .NET framework has two core components namely:\_\_\_\_\_and \_\_\_\_\_.
4. \_\_\_\_\_manages the loading and layout of classes.
5. \_\_\_\_\_manages code execution.
6. BCL comprises\_\_\_\_\_.
7. CTS stands for\_\_\_\_\_.
8. \_\_\_\_\_and \_\_\_\_\_are types of CTS.
9. \_\_\_\_\_provides marshaling to and from COM component.
10. \_\_\_\_\_namespace is used to define classes related to ADO.NET.

## **Unit-2 C# Language basics.**

### **Answer the following questions in short.**

1. "C# is block structured programming language"- state true or false with justification.
2. What is indentation?
3. What are the types of comments in C#?
4. List out feature of C# language.
5. What are the Data Types in C#?
6. Write down two variable naming rules.
7. List types of operators available.
8. List string literals.
9. What is expression?
10. List operator precedence.
11. What is namespace?
12. What are bitwise operators?
13. Write down syntax of GOTO statement.
14. Write down syntax of ternary operator.
15. What is switch statement?
16. What are the types of loops available?
17. List types of variable conversions available.
18. What is array? What are the types of array?
19. What is Event-Driven Programming?
20. What is Event Handler?
21. What is structured exception handling?
22. What is Error handling?
23. What is the use of "object" data type in C#.NET?
24. Give the difference between Boxing and Unboxing.
25. Which operator is used to concatenate two strings? Give proper example.
26. Explain the implicit variable declaration in brief.
27. What is enum in C#?
28. What is the different between Convert.ToInt16(), Convert.ToInt32() and Convert.ToInt64()?
29. What is the difference between "out" and "ref" parameters in C#?
30. What is method overloading?
31. What is the Difference between Array and ArrayList in C#.Net?



- 32. What is the difference between “finalize” and “finally” methods in C#?
- 33. Difference between Throw Exception and Throw Clause.
- 34. List down the commonly used types of exceptions in .Net.
- 35. Can Multiple Catch Blocks executed in C#? Justify your answer.
- 36. In the following code, how would you refer to the name great from code in the namespace fabulous?

```
namespace fabulous
{
    // code in fabulous namespace
}
namespace super
{
    namespace smashing
    {
        // great name defined
    }
}
```

- 22. By considering operator precedence, list the steps involved in the computation of the following expression:  
resultVar += var1 \* var2 + var3 % var4 / var5;
- 23. Write a console application that obtains four int values from the user and displays the product.  
Hint: You may recall that the Convert.ToDouble() command was used to convert the input from the console to a double; the equivalent command to convert from a string to an int is Convert.ToInt32().
- 24. What is wrong with the following code? int i;  
for (i = 1; i <= 10; i++)  
{  
 if ((i % 2) = 0)  
 continue;  
 Console.WriteLine(i);  
}
- 25. The following two functions have errors. What are they? static bool Write()

```
{  
    Console.WriteLine("Text output from function.");  
}  
static void MyFunction(string label, params int[] args, bool showLabel)  
{  
    if (showLabel)  
        Console.WriteLine(label);  
    foreach (int i in args)  
        Console.WriteLine("{0}", i);  
}
```

**Answer the following questions in detail.**

1. Explain C# console application structure in detail.
2. Write a note on variable and its types.
3. Describe variable naming, declaration and assignment in detail.
4. Write a note on Expression and operators.
5. Explain operator precedence with proper example.
6. Write a note on branching and its types with example.
7. Write a note on looping with its types and example.
8. Explain Interrupting loops and infinite loops.
9. Explain type conversion with example.
10. Explain enumeration with suitable example.
11. What is struct and how to define it?
12. What is array and how to declare it?
13. Explain multidimensional array and array of array with example.
14. If you have two integers stored in variables var1 and var2, what Boolean test can you perform to determine whether one or the other (but not both) is greater than 10?

15. Write an application that includes the logic from above question, obtains two numbers from the user, and displays them, but rejects any input where both numbers are greater than 10 and asks for two new numbers.
16. Show the code for a color enumeration based on the short type containing the colors of the rainbow plus black and white. Can this enumeration be based on the byte type?
17. Write a console application that accepts a string from the user and outputs a string with the characters in reverse order.
18. Write a console application that places double quotes around each word in a string.
19. Write a console application that accepts a string and replaces all occurrences of the string no with yes.
20. Explain Function with its return value and parameter types with example.
21. Explain variable scope with example.
22. Explain function overloading in detail.
23. Write a note on delegates.
24. Create a delegate and use it to impersonate the Console.ReadLine() function when asking for user input.
25. Add another function to the order struct that returns a formatted string as follows (as a single line of text, where italic entries enclosed in angle brackets are replaced by appropriate values):  
Order Information: <unit count> <item name> items at \$<unit cost> each, total cost \$<total cost>
26. Given the enumeration data type orientation defined in the following code, write an application that uses structured exception handling (SEH) to cast a byte-type variable into an orientation type variable in a safe way. (Note: You can force exceptions to be thrown using the checked keyword, an example of which is shown here. This code should be used in your application.)  
enum Orientation : byte  
{  
North = 1,  
South = 2,  
East = 3,  
West = 4  
}  
myDirection = checked((Orientation)myByte);

**Select most appropriate answer from the given options.**

1. Correct Declaration of Values to variables 'a' and 'b'?  
a. int a = 32, b = 40.6;  
b. int a = 42; b = 40;  
c. int a = 32; int b = 40;  
d. int a = b = 42;

2. Select error in the given program :

```
Static Void Main(String[] args)
{
    const int m = 100;
    int n = 10;
    const int k = n / 5 * 100 * n ;
    Console.WriteLine(m * k);
    Console.ReadLine();
}
```

- 'k' should not be declared constant
  - Expression assigned to 'k' should be constant in nature
  - Expression (m \* k) is invalid
  - 'm ' is declared in invalid format
3. Arrange the following datatype in order of increasing magnitude sbyte, short, long, int.
- long < short < int < sbyte
  - sbyte < short < int < long
  - short < sbyte < int < long
  - short < int < sbyte < long
4. Which Conversion function of 'Convert.ToInt32()' and 'Int32.Parse()' is efficient?
- Int32.Parse() is only used for strings and throws argument exception for null string
  - Convert.ToInt32() used for datatypes and returns directly '0' for null string
- 2
  - Both 1,2
  - 1
  - None of the mentioned
5. Correct way to assign values to variable 'c' when int a=12, float b=3.5,int c;
- c = a + b;
  - c = a + int(float(b));

c. `c = a + convert.ToInt32(b);`

d. `c = int(a + b);`

6. select the output of the following set of code

? `static void Main(string[] args)`

{

`int x = 1;`

`float y = 2.4f;`

`short z = 1;`

`Console.WriteLine((float) x + y * z - (x += (short) y)`  
    `); Console.ReadLine();`

}

a. 0.4000004

b. 0.4000023

c. 0.0400021

d. 0.4000001

7. What does the following C#.NET code snippet

will print? `int i = 0, j = 0;`

label:

`i++;`

`j+=i; if`

`(i < 10)`

    {

`Console.Write(i`  
        `+" "); goto label;`

    }

a. Prints 1 to 9

b. B. Prints 0 to 8

c. C. Prints 2 to 8

d. D. Prints 2 to 9

- e. E. Compile error at label:.
8. Which of the following statements is correct?
- a. It is not possible to extend the if statement to handle multiple conditions using the else-if arrangement.
  - b. The switch statement can include any number of case instances with two case statements having the same value.
  - c. A jump statement such as a break is required after each case block excluding the last block if it is a default statement.
  - d. The if statement selects a statement for execution based on the value of a Boolean expression.
9. Operator overloading is creating functions with special names, the keyword \_\_\_\_\_operator followed by the symbol for the operator being defined.
- a. Overload
  - b. Update
  - c. Operator
  - d. Implement
10. Which of the following is the correct way to find out the number of elements currently present in an ArrayList Collection called arr?
- a. arr.Count
  - b. arr.GrowSize
  - c. arr.MaxIndex
  - d. arr.Capacity
11. Which of the following statements is correct?
- a. A constructor can be used to set default values and limit instantiation.
  - b. C# provides a copy constructor.
  - c. Destructors are used with classes as well as structures.
  - d. A class can have more than one destructor.
12. How many values is a function capable of returning?
- a. 1
  - b. 0
  - c. Depends upon how many params arguments does it use.

d. Any number of values.

13. How many times can a constructor be called during lifetime of the object? a. As many times as we call it.

b. Only once.

c. Depends upon a Project Setting made in Visual Studio.NET.

d. Any number of times before the object gets garbage collected.

14. Which of the following is the correct output of the C#.NET code snippet given below?

```
int[ , , ] a = new int[ 3, 2, 3 ];  
Console.WriteLine(a.Length);
```

a. 20

b. 4

c. 18

d. 10

15. How will you complete the foreach loop in the C#.NET code snippet given below such that it correctly prints all elements of the array a?

```
int[][]a = new int[2][];  
a[0] = new int[4]{6, 1, 4, 3};  
a[1] = new int[3]{9, 2,  
7}; foreach (int[ ] i in a)  
{  
    /* Add loop here */  
    Console.Write(j + " ");  
    Console.WriteLine();  
}
```

a. foreach (int j = 1; j < a(0).GetUpperBound; j++)

b. foreach (int j = 1; j < a.GetUpperBound (0); j++)

c. foreach (int j in a.Length)

d. foreach (int j in i)

16. How many enumerators will exist if four threads are simultaneously working on an ArrayList object?

a. 1

- b. 3
- c. 2
- d. 4

17. Which of the following is NOT a .NET Exception class?

- a. Exception
- b. StackMemoryException
- c. DivideByZeroException
- d. OutOfMemoryException
- e. InvalidOperationException

18. Which of the following statements are correct about the exception reported

below? Unhandled Exception: System.IndexOutOfRangeException:

Index was outside the bounds of the array.

at MyConsoleApplication.Program.Main(String[]

args) in D:\ConsoleApplication\Program.cs:line 14

- 1. The program did not handle an exception called IndexOutOfRangeException.
- 2. The program execution continued after the exception occurred.
- 3. The exception occurred in line number 14.
- 4. In line number 14, the program attempted to access an array element which was beyond the bounds of the array.
- 5. The CLR could not handle the exception.

- a. 1 only
- b. 1, 2 and 3 only
- c. 2 and 5 only
- d. 1, 3 and 4 only

19. Which of the following is NOT an Exception?

- a. StackOverflow
- b. Division By Zero
- c. Insufficient Memory
- d. Incorrect Arithmetic Expression
- e. Arithmetic overflow or underflow



20. Which of the following statements is correct about the C#.NET program given below if a value "ABCD" is input to it? using System;

```
namespace MyConsoleApplication
{
    class MyProgram
    {
        static void Main(string[] args)
        {
            int index; int
            vat = 88;
            int[] a = new
            int(5); try
            {
                Console.Write("Enter a number: ");
                index = Convert.ToInt32(Console.ReadLine());
                a[index] = val;
            }
            catch(Exception e)
            {
                Console.Write("Exception occurred");
            }
            Console.Write("Remaining program");
        }
    }
}
```

- a. It will output: Exception occurred
- b. It will output: Remaining program
- c. It will output: Remaining program Exception occurred
- d. It will output: Exception occurred Remaining program
- e. The value 88 will get assigned to a[0].

**Fill in the blanks.**

- 1. Default Type of number without decimal is \_\_\_\_\_.
- 2. \_\_\_\_\_ Bytes are stored by 'Long' Datatype in C# .net.

3. From \_\_\_\_\_ “.NET class” name datatype “UInt” is derived .
4. Object is \_\_\_\_\_ reference types.
5. When a value type is converted to object type, it is called\_\_\_\_\_.
6. Checking for object type variables takes place at\_\_\_\_\_in dynamic types.
7. \_\_\_\_\_is base class to all arrays.
8. Param Arrays is used for\_\_\_\_\_.
9. \_\_\_\_\_ is the advantage of using 2D jagged array over 2D rectangular array.
10. The default value of numeric array elements is \_\_\_\_\_.

### **Unit -3 OOP in C#**

**Answer the following questions in short.**

1. What is a Class?
2. What is difference between method overloading and method overriding?
3. What is static class member?
4. What is the use of sealed class?
5. What are access modifiers available in C#?
6. Can we create the instance for abstract classes?
7. What are interfaces?
8. In what scenarios will you use an abstract class and in what scenarios will you use an interface?
9. How to prevent class being inherited?
10. When you use shadowing, if you want to access the base class method with derived class objects how can you access it?
11. List 5 interfaces available in C#.
12. List 5 sealed classes available in C#.
13. List 5 static classes in C#.
14. List 5 abstract classes in C#.
15. How will you typecast to a baseclass?
16. What is the use of base keyword?
17. What is virtual method?
18. What is Indexer?
19. What is Property?
20. What are hashtable collections?
21. What are Queues and stack collection?
  
22. What is an Object?
23. What is Data Encapsulation? Give example.
24. State the difference between late binding and early binding in C#.
25. Can "this" be used within a static method? Justify your answer.
26. What is the difference between Interface and Abstract Class in .NET?
27. List different types of Constructors used in C#.
28. Write down difference between shallow copy and deep copy.

29. What is wrong with the following code? public sealed class MyClass

```
{  
    // Class members.  
}  
public class myDerivedClass : MyClass  
{  
    // Class members.  
}
```

24. How to refactor class members?

25. What is automatic properties?

26. What is as operator?

27. What is overloading conversion operators?

28. What is the use of ?? operator?

29. List out Generic types.

30. How to define a generic type parameter as contra variant?

**Answer the following questions in detail.**

1. What is object oriented programming? Explain objects its properties ,field and methods in detail.
2. Explain lifecycle of object in detail.
3. What are static and instance class members?
4. Explain inheritance and polymorphism in detail.
5. Explain relationship between object in detail.
6. Discuss the use of Virtual Keyword in C# with proper example.
7. Explain difference between reference type and value type.
8. Draw a UML diagram for the following classes and interface:
  - An abstract class called HotDrink that has the methods Drink, AddMilk, and AddSugar, and the properties Milk and Sugar
  - An interface called ICup that has the methods Refill and Wash, and the properties Color and Volume
  - A class called CupOfCoffee that derives from HotDrink, supports the ICup interface, and has the additional property BeanType
  - A class called CupOfTea that derives from HotDrink, supports the ICup interface, and has the additional property LeafType
8. Explain constructor and destructor with example.
9. Explain interfaces vs. abstract class.

10. How would you define a noncreatable class? Why are noncreatable classes still useful? How do you make use of their capabilities?
11. What are class members? How to define them?
12. What is interface? How to implement it.
13. Partial method definitions must use the void return type. Provide a reason why this might be so.
14. Explain Iterator and Collection.
15. Explain Type and Value comparison with example.
16. Explain in detail the IComparable and IComparer interfaces with example of sorting collection.
17. What is Generics? Explain System.Collections.Generic Namespace in detail.
18. How to sort and search Generic list?
19. Explain Generic types in detail.
20. Explain the default keyword, Constraining types, Inheriting from generic classes and Generic operators in detail.

**Select most appropriate answer from the given options.**

1. Which of the following are real levels of accessibility in OOP?
  - a. Secure
  - b. Protected
  - c. Loose
  - d. Wildcard
2. Which of the following cannot be generic?
  - a. Classes
  - b. Operator overloads
  - c. Structs
  - d. Enumerations
3. Which feature enables to obtain information about use and capabilities of runtime?
  - a. Runtime type ID
  - b. Reflection
  - c. Attributes
  - d. None of the mentioned
4. Choose the class From which the namespace 'System.Type' is derived:
  - a. Systems.Reflection

- b. System.Reflection.MemberInfo
  - c. Both a&b
  - d. None of the mentioned
5. What will be the output of the given set of code?
- ```
static void Main(string[] args)
{
    int a = 5;
    int b = 0, c = 0; method (a, ref
    b, ref c); Console.WriteLine(b
    + " " + c); Console.ReadLine();
}
static int method(int x, int p, ref int k)
{
    p = x + x * x;
    k = x * x +
    p; return 0;
}
```
- a. 30, 55
  - b. 55, 30
  - c. Compile time error
  - d. 0, 0
6. Keyword used to define call by reference parameter in C# .NET?
- a. &
  - b. Out
  - c. Ref
  - d. &&
7. Correct way of defining constructor of the given class as and when objects of classes are created is:
- ```
maths s1 = new maths();
maths s2 = new maths(5, 5.4f);
```
- a. public maths(int pp, single tt)
 {
 p = pp;

```

        t = tt;
    }
b. sample s;
c. public sample()
{
    p = 0; t
    = 0.0f;
}
public sample(int pp, single tt)
{
    p = pp;
    t = tt;
}
d. s = new sample();

```

8. What is the return type of constructors?
  - a. int
  - b. float
  - c. void
  - d. None of the mentioned
9. If no access modifier for a class is specified, then class accessibility is defined as?
  - a. public
  - b. protected
  - c. private
  - d. internal
10. Which of the following is used to define the member of a class externally?
  - a. :
  - b. ::
  - c. #
  - d. none of the mentioned
11. The operator used to access member function of a class?
  - a. :
  - b. ::

- c. .
  - d. #
12. Correct way of declaration of object of the following class is  
? class name
- a. name n = new name();
  - b. n = name();
  - c. name n = name();
  - d. n = new name();
13. What object can help you maintain data across users?
- a. Application Object
  - b. Session object
  - c. Server Object
  - d. Response Object
14. You are creating a new collection type and you want to make sure the elements in it can be easily accessed. What should you add to the type?
- a. Indexer property
  - b. Constructor
  - c. Generic type parameter
  - d. Static property
15. "In C#, by default structs are passed how?"
- a. By value
  - b. By reference
  - c. By address
  - d. By memory
16. Which among the following is not an interface declared in System.Collection namespace?
- a. IDictionaryComparer
  - b. IEnumerable
  - c. IEnumerator
  - d. Icomparer
17. Among the given collections which one is I/O index based?
- a. ArrayList
  - b. BitArray
  - c. Stack
  - d. Queue



18. A HashTable t maintains a collection of names of states and capital city of each state. Which among the following finds out whether "New delhi" state is present in the collection or not?
- t.HasValue("New delhi");
  - t.ContainsKey("New delhi");
  - t.HasKey("New delhi");
  - t.ContainsValue("New delhi");
19. Which among the following is correct way to find out the number of elements currently present in an ArrayListCollection called arr?
- arr.Capacity
  - arr.Count
  - arr.MaxIndex
  - arr.UpperBound
20. Which operator among the following signifies the destructor operator?
- ::
  - :
  - ~
  - &

**Fill in the blanks.**

- The variable defined in a class represent the \_\_\_\_\_ of a visible thing of a certain type.
- \_\_\_\_\_ is defined as a class type data which separated interface from implementation.
- Creation of a class variable is known as \_\_\_\_\_.
- The properties of an object are exactly those described by its \_\_\_\_\_.
- OOP seems to be effective in solving the \_\_\_\_\_.
- Message passing is a principle to initialize an action by means of a \_\_\_\_\_.
- \_\_\_\_\_ symbol is used for public member and \_\_\_\_\_ symbol is used for private symbol.
- Properties does not provide \_\_\_\_\_ to data.
- \_\_\_\_\_ specify that class is accessible only from within the current project.
- Object browser is an expanded version of \_\_\_\_\_.
- \_\_\_\_\_ is the powerful feature of VS.
- \_\_\_\_\_ specifies members are accessible only from code within the assembly (project) where they are defined.
- \_\_\_\_\_ allow class to provide array-like access.

## **Unit-4 GUI Design and Event Driven Programming**

### **Answer the following questions in short**

1. What is anchoring and docking of controls?
2. List form lifecycle events.
3. List important properties of Label control.
4. List important properties of radiobutton control.
5. List default events of button and form control.
6. How to add textbox on form using code behind?
7. Which property allows multiple selection in listbox control.
8. State difference between groupbox and panel control
9. What is MDI?
10. Write a code to display message when left mouse button is clicked.
11. Give an example of PictureBox control.
12. How to display scrollbar in multiline textbox?
13. What is toolstrip? Write down important properties of toolstrip control.
14. Write a code to display system date and time in listview control on particular interval using timer.
15. How to split form in multiple panel.
16. Write a code that will perform numeric validation on contact number textbox using keypressed event.
17. How to set shortcut keys for textboxes?
18. Which property of form allow startup and closeup events to be fired?
19. State the use of input controls.
20. List at least four input controls.
21. Which property is used to display multiple lines in textbox control?
22. List at least four properties of ListBox control.
23. Which property is used to add the items in ListBox controls?
24. What is the usage of SelectedIndex property of ListBox?
25. List at least four properties of Timer control.
26. By which statement you can open and manipulate forms?
27. Which property is used for positioning each form in your project?

### **Answer the following questions in detail.**

1. Explain in detail Label and LinkLabel controls with its important properties, methods, events and example.
2. Explain textbox control in detail with an example of applying various validation on it.

3. Discuss Timer control in detail with its properties and example.
4. Explain ToolStrip control and its properties with example.
5. Explain in detail radiobutton and checkbox control with example.
6. What is container control? Explain groupbox with an example of changing font of label available in it without affecting other labels outside it.
7. List out difference between combobox and listbox control also explain combobox control with the code of adding items to it using code behind.
8. Suppose your application is maintaining employee records. Write down the code for storing multiple records of employee in an object array when save button is clicked. Clicking on Previous and Next buttons will display details of previous and next employee respectively.
9. Suppose your application is maintaining employee records. Write Down the code to create object array of employee that will store employee data. Selecting department detail from combobox will display employee information belongs to selected department.

**Note:**

Department name must be unique.

Details of all employees belongs to the same department must displayed in listbox.

8. Write a code for object oriented application that will save customer account and balance details using following:
  - Save customer personal details and banking details.
  - Perform withdraw and deposit of specific amount.
  - Display balance.
9. Write a code to create an interface called Stack with methods Push(), Pop() and property Length. Create a class that implements this interface. Use an array to implement stack data structure.
10. Write a code to demonstrate the use of collection by saving data of five items and display item with maximum and minimum price respectively.
11. Write a code to create a class required to store data of employees. All employees have Id, name, designation, salary, department, specialism. Provide facility of search employee depends upon their designation and specialism.

**Select most appropriate answer from the given options.**

1. Which is not a property of the Common control class?
  - a.) Show
  - b.) BackColor
  - c.) Font

- d.) ForeColor
2. Which property determines whether a control is displayed to the user? a.) Hide  
b.) Show c.) Visible d.) Enabled
3. The Button control can be activated:  
a.) programmatically through the click event.  
b.) by clicking the button with the mouse. c.) with the form's DefaultButton property. d.) Both a and b.
4. The CancelButton property belongs to which object? a.) Button  
b.) Form c.) Label d.) TextBox
5. A click event procedure stub for the label control can be created by:  
a.) selecting the object and event from the code editor window's drop-down boxes.  
b.) typing the code in the code editor window.  
c.) by double clicking the control.  
d.) Both a and b.  
e.) All of the above.
6. In event-driven programming an event is generated by: a.) the system.  
b.) a user's action. c.) the program itself. d.) Both a and b.  
e.) All of the above.
7. Which is not a common control event? a.) Click  
b.) SingleClick  
c.) DoubleClick  
d.) MouseMove

8. The Tick event is found only in which object?  
a.) Form  
b.) Button  
c.) Label  
d.) Timer
9. The Activated event is found only in which object?  
a.) Form  
b.) Button  
c.) TextBox  
d.) Label
10. In order to process a number typed in a TextBox the programmer must:  
a.) use the Val function to convert the Text value.  
b.) use the Convert function to convert the Text value.  
c.) use the IsNumeric function to convert the Text value.  
d.) Both a and b.
11. Which TextBox method does not use the clipboard?  
a.) Clear  
b.) Copy  
c.) Cut  
d.) Paste
12. Which TextBox property should always be changed first?  
a.) AcceptsReturn  
b.) BorderStyle  
c.) Font  
d.) Name
13. Which is not a valid value for the ListBox SectionMode Property?  
a.) None  
b.) One  
c.) MultiSimple  
d.) MultiExtended  
e.) All of the above.
14. Setting the SelectedIndex property of a ListBox to -1 will:  
a.) cause an error.  
b.) cannot be done.

- c.) de-select any selected item.
  - d.) Both a and b.
15. Which method of a ListBox will remove just one item at a time? a.) Items.RemoveAt  
b.) Item.RemoveAt  
c.) Items.ClearAt  
d.) Item.ClearAt

**Fill in the blanks.**

1. \_\_\_\_\_ value for the ComboBox DropDownStyle property allows a user to type in data.
2. \_\_\_\_\_ and \_\_\_\_\_ controls are combine to form combobox control.
3. \_\_\_\_\_ is the most number of states a CheckBox can have.
4. \_\_\_\_\_ is the standard prefix for the name of a CheckBox.
5. A CheckBox can also appear as \_\_\_\_\_ control.
6. \_\_\_\_\_ is the standard prefix for the name of a RadioButton.
7. \_\_\_\_\_ numbers of RadioButtons in a Group Box can be selected at the same time.
8. \_\_\_\_\_ event is activated when a RadioButton is selected.
9. \_\_\_\_\_ argument in the KeyPress parameter list contains the Handled property.
10. \_\_\_\_\_ menu object property places a check mark in the display of the menu text.

## **Unit-5 Advanced GUI controls**

### **Answer the following questions in short**

1. List important properties of richtextbox control.
2. List important methods of richtextbox control.
3. Write a code to select all text appear in richtextbox.
4. How to copy selected text to clipboard?
5. How to paste copied text from clipboard?
6. Write a code to perform undo and redo operation using richtextbox control.
7. List out types of dialogues available .
8. Write a code to change background color of form to the color selected from colordialog.
9. Write a code to display selected font type,style,size from fontdialog.
10. Write a code to display openfile dialog to open content of selected file to richtextbox control.
11. Write a code to save file to specific path using savefiledialog.
12. What does showplusminus property of treeview indicates?
13. Write a code to display all nodes of treeview control.
14. List important properties and methods of listview control.
15. What is the child class of listview and treeview class.
16. What is the difference between TextBox and RichTextBox?
17. List out at least four properties of TreeView control.
18. What is the usage of MenuStrip control?
19. Explain FontDialog box with example.
20. What is the use of ColorDialog control? Give example.
21. How can you add Root node and Child node in TreeView?

### **Answer the following questions in detail.**

1. Explain richtextbox control in detail with example of selecting and deselecting text entered in it.
2. Write a code to display image file in richtextbox control using openfiledialog.
3. List all Dialog Boxes. Explain any three with example.
4. Describe MenuStrip control with example. List and explain at least four properties of it.
5. Explain ListView Control with an example.
6. Explain in detail colordialog.

7. Explain in detail openFileDialog with example.
8. Explain in detail savefiledialog with example.
9. What is fontdialog?Mention its usage with appropriate example.
10. Explain treeview control with adding,removing nodes using codebehind.
11. Write a code to add and search treeview node by its text,tag and name.
12. Write a code to create a simple text editor using richtextbox control.
13. Write a code that will bind listview control to an object array and display data columnwise.

**Select most appropriate answer from the given options.**

1. \_\_\_\_\_ is the standard prefix for dialogues.
2. \_\_\_\_\_ is the method used to activate the color dialog box.
3. \_\_\_\_\_ class is used to programmatically create a color dialog box.
4. \_\_\_\_\_ class is used to programmatically create a font dialog box.
5. \_\_\_\_\_ class is used to programmatically create a openfile dialog box.
6. \_\_\_\_\_ class is used to programmatically create a savefile dialog box.
7. \_\_\_\_\_ property specifies the choices in the “Files of type” dropdown box in openFileDialog.
8. \_\_\_\_\_ property is the same in the OpenFileDialog and the SaveFileDialog control.
9. \_\_\_\_\_ method of treeview expand nodes.
10. Treeview control represents\_\_\_\_\_ structure.

**Select most appropriate answer from the given options.**

1. Properties are used to represent: a.) actions. b.) classes. c.) data. d.) events.
2. Methods are used to represent: a.) actions. b.) classes. c.) data. d.) events.
3. Which of the following objects is a container? a.) MaskedTextBox



- b.) GroupBox c.)  
RadioButton d.)  
RichTextBox
- 4. In code, you can make the text in a text box display left-aligned by using \_\_\_\_\_.
  - a.)     ObjectName.TextAlign = HorizontalAlignment.Left
  - b.)     ObjectName.Alignment = Left
  - c.)     ObectName.Left = True
  - d.)     ObjectName.HorizontalAlignment = Left
- 5. Which of the following is the best choice when the user needs to input her social security number? a.) RichTextBox  
b.) TextBox  
c.) MaskedTextBox  
d.) GroupBox
- 6. A RichTextBox Control support ..... file
  - [a] .doc
  - [b] .txt
  - [c] .rtf
  - [d] None.
- 7. What is the method used to activate the color dialog box?
  - [a] ActivateDialog
  - [b] DisplayDialog
  - [c] ExhibitDialog
  - [d] ShowDialog
  - [e] StartDialog
- 8. The name of the class used to programmatically create a font dialog box is:
  - [a] Font.
  - [b] FontBox.
  - [c] FontDialog.
  - [d] FontDisplay.
  - [e] FontDialogBox.
- 9. Which control lets you display information in a hierarchical structure.
  - [a] TreeView
  - [b] ListView
  - [c] ListBox

- [d] StatusBar
- 10. Which style of StatusBar panel can be modified by your program ?
  - [a] sbrText
  - [b] sbrCaps
  - [c] sbrNum
  - [d] sbrIns
- 11. What property of the ProgressBar determines how much of the bar is filled.
  - [a] Min
  - [b] Max
  - [c] Value
  - [d] All of the above.
- 12. All of the following statement are true about toolbars except :
  - [a] You can have only one toolbar on a form
  - [b] Toolbar can be positioned anywhere on the form
  - [c] Toolbars can be customized by the user.
  - [d] Toolbar buttons can display both text and images.
- 13. How many root nodes can a TreeView control have ?
  - [a] One
  - [b] Up to five
  - [c] Maximum of two
  - [d] No limit
- 14. Which property of the ListView control determines which field a sort I
  - [a] Sorted
  - [b] SortOrder
  - [c] SortField
  - [d] SortKey

## **Unit-6 Database Programming with ADO.NET**

### **Answer the following questions in short**

1. What is ADO.NET?
2. What are dataproviders? Give examples.
3. What do you mean by disconnected architecture?
4. What is datareader?List important properties of it.
5. What is dataadapter?List methods and properties of it.
6. Write a code to perform database connection using ODBC data provider.
7. Write down connection string for ODBC data provider.Also explain each parameter of it.
8. Write down important methods of commandobject with example.
9. What is datatablereader? State important properties and methods of it.
10. How to fetch data and display it in listview control.
11. Write a code to display total number of rows fetch by dataset.
12. Write a code for passing parameters in update query.
13. Write a code for calling stored procedure named insert data with passing arguments to insert person details.
14. List important properties of datagridview control.
15. State difference between datatablereader and datareader.
16. Write a code to fetch table data using datareader.
17. Differentiate ExecuteNonQuery() and ExecuteReader().
18. Explain the usage of SqlCommand and SqlDataReader.
19. List at least four properties of DataGridView control and explain any one of it.
20. What is Data Binding? Give one advantage and dis-advantage of it.
21. Give the use of ExecuteScalar() method.
22. What is RDLC?

### **Answer the following questions in detail.**

1. Explain ADO.NET object model in detail.
2. Explain accessing data with ADO.NET.
3. Explain DataGridView control with proper example.
4. Explain ADO.NET architecture.
5. Explain ADO.NET disconnected datamodel in detail.
6. Write step by step procedure for creating database of student.create a table name tblstudent and fill combobox with Course details from student table using datareader object.

7. With the help of ADO.NET disconnected data structure, Write down the code for application that will display details of student when appropriate course is selected from combobox also draw GUI for it.
8. Suppose your application maintaining family table. Write a code to adding, displaying and removing nodes in hierarchical way (i.e. grand\_father(root)->father->child) using treeview control.
6. Write a code to save patient details in database table and also display patient data in listview control based on selection of appointment date from combobox.
7. Suppose your application is maintaining records of country wise states and state wise cities. Write a code to retrieve states in combobox from database table depends upon country selected from combobox and display cities in combobox depends upon state selected from combobox.
8. Suppose your application is maintaining records of category wise products. Write a code to retrieve subcategory in combobox from database table depends upon category selected from combobox. Also display total product retrieve from database table in a label.
9. Explain dataadapter object in detail. Explain code for updation and retrieval of data through dataadapter object.
10. Write down steps for creating and displaying data using RDLC.
11. Write down code for creating stored procedure and also use it to insert records in student table.

**Select most appropriate answer from the given options.**

1. \_\_\_\_\_ is disconnected object in ADO.NET
2. \_\_\_\_\_ method is used to execute insert, update and delete command.
3. Command object having \_\_\_\_\_ property that define command to be passed.
4. Connection object is having \_\_\_\_\_ and \_\_\_\_\_ important methods.
5. Dataadapter is having \_\_\_\_\_ method used to fill dataset.
6. Datareader is \_\_\_\_\_ model.
7. Dataset is having \_\_\_\_\_ collections.
8. \_\_\_\_\_ propertie of dataset is used to display tablerows.
9. \_\_\_\_\_ file is necessary to display record using reportviewer control.
10. \_\_\_\_\_ property is used to bind data to datagridview control.

**Select most appropriate answer from the given options.**

1. Which database is the ADO.NET SqlConnection object designed for? a.) Access  
b.) Microsoft SQL Server c.) MySQL  
d.) Oracle  
e.) None of the above.

2. Which property of the database must the connection object contain? a.) Location  
b.) Type  
c.) Query  
d.) Both a and b.  
e.) All of the above.
3. The first step of configuring a DataAdapter is to select: a.) an adapter object.  
b.) a connection object.  
c.) a database object.  
d.) a dataset object. e.)  
None of the above.
4. Which DataAdapter Query Type can be used with the Access database? a.) Use SQL statements.  
b.) Create new stored procedure.  
c.) Use existing stored procedure.  
d.) Both a and b.  
e.) All of the above.
5. Which is not an ADO.NET DataAdapter Object?  
a.) OleDbDataAdapter  
b.) SqlDataAdapter  
c.) QueryDataAdapter  
d.) Both a and b.  
e.) All of the above.
6. Which is the appropriate prefix for a DataAdapter object? a.) da  
b.) daa  
c.) dad  
d.) dt  
e.) dta
7. Which type of object has the Generate Dataset method? a.) Adapter object

- b.) Connection object
  - c.) Database object
  - d.) Dataset object e.)
  - None of the above.
8. Which is the appropriate prefix for a Dataset object? a.) da
- b.) das
  - c.) dat
  - d.) ds
  - e.) dst
9. Which object does the data-aware control bind to? a.) Dataset
- b.) DataAdapter c.)
  - Connection d.)
  - Both a and b. e.) All
  - of the above.
10. What is the proper code to put data into the dataset called CustomerDataset using the CustomerDataAdapter object? a.) CustomerDataset.Fill(CustomerDataAdapter)
- b.) CustomerDataAdapter.Fill(CustomerDataset)
  - c.) CustomerDataset.Load(CustomerDataAdapter)
  - d.) CustomerDataAdapter.Load(CustomerDataset)
  - e.) None of the above.
11. Which object contains the Position property of the current record in a dataset? a.) BindingContext
- b.) BindingData
  - c.) DataBinding
  - d.) DataBound
  - e.) DataContext
12. The first record in a dataset has a position property of:
- a.) zero.
  - b.) one.
  - c.) any value defined by the
  - programmer. d.) Both a and b.
  - e.) All of the above.

13. Which below is specified by the DataMember Property? a.) Connection object  
b.) DataAdapter object  
c.) Database field  
d.) Database table  
e.) Dataset object
14. Which below is specified by the DataSource Property? a.) Connection object  
b.) DataAdapter object  
c.) Database field  
d.) Database table  
e.) Dataset object
15. Which is a property of the DataGrid control? a.) DataMember  
b.) DataSource c.) DataQuery d.) Both a and b. e.) All of the above.