

**National School of Business Management**  
**Name of the Degree Programme BSc in Software Engineering-13.2**  
**Semester of the Examination 1<sup>st</sup> Year 1<sup>st</sup> Semester**  
**Module Name Software Engineering**  
**Module Code XXXXXXXX**

Time: 03Hrs

Answer all questions

Date: 25 February 2014

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**A - Mark True or False (20 marks)**

- 1) C#.NET is a structured programming language. **True / False**
- 2) Every data type is either a value type or a reference type. **True / False**
- 3) Data members of a class are by default public. **True / False**
- 4) Member function of a class are by default private. **True / False**
- 5) For every try block there must be a corresponding finally block. **True / False**
- 6) Value types are always created on the heap. **True / False**
- 7) Constructors never return any value. **True / False**
- 8) Boolean variable cannot have a value of null. **True / False**
- 9) Most **languages** support object-oriented programming **True / False**
- 10) Classes provide **modularity** and **structure** in an object-oriented computer program  
**True / False**
- 11) The set of values of the attributes of a particular **object** is called its **state**. **True / False**
- 12) C# is not **case-sensitive**. So **num** and **Num** are same identifiers. **True / False**
- 13) Integers do have a fractional part. **True / False**
- 14) Variable Identifiers begin with a letter and are followed by any number of alphanumeric characters **True / False**
- 15) Methods are portions of **code** which can **accept data** and can **return data**. **True / False**
- 16) If /else statement is a repetition structure. **True / False**
- 17) Switch / Case can be used as a selection. **True / False**
- 18) To compare two strings, **String.Compare()** method is used. **True / False**
- 19) C# methods can accept up to 5 arguments. **True / False**
- 20) You can use both public and private modifiers for one variable. **True / False**

**B - Underline the Correct answer (2 X 15 = 30 Marks)**

1) Underline the **incorrect** statement

- a. A class defines the abstract characteristics of a thing
- b. Properties and methods defined by a class are called **members**
- c. A class can create only one instance of its type.
- d. A **class** is the blueprint from which **individual objects** are created

2) Which of the following statements is correct?

- a. Object Oriented Programming paradigm stresses on dividing the logic into smaller parts and writing procedures for each part.
- b. Classes and objects are corner stones of structured programming paradigm.
- c. Object Oriented Programming paradigm gives equal importance to data and the procedures that work on the data.
- d. C#.NET is a structured programming language.

3) What is the size of a Decimal?

- a. 4 byte
- b. 8 byte
- c. 16 byte
- d. 32 byte

4) Which of the following statements are correct?

- 1. C# allows a function to have arguments with default values.
- 2. C# allows a function to have variable number of arguments.
- 3. Omitting the return value type in method definition results into an exception.
- 4. Redefining a method parameter in the method's body causes an exception.
- 5. Parameters is used to specify the syntax for a function with variable number of arguments.

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

5) 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.

6) Which of the following statements are incorrect?

- a. Instance members of a class can be accessed only through an object of that class.
- b. A class can contain only instance data and instance member function.
- c. All objects created from a class will occupy equal number of bytes in memory.

d. A class is a blueprint or a template according to which objects are created.

7) Which one of the following statements is correct?

- a. Array elements can be of integer type only.
- b. The length of an Array is the number of dimensions in the Array.
- c. The default value of numeric array elements is zero.
- d. The Array elements are guaranteed to be sorted.

8) Which of the following statements is correct about an Exception?

- a. It occurs during compilation.
- b. It occurs during linking.
- c. It occurs at run-time.
- d. It occurs during loading of the program.

9) Which of the following is NOT an Exception?

- a. StackOverflow
- b. Division By Zero
- c. Insufficient Memory
- d. Incorrect Arithmetic Expression

10) What will be the output of the following code snippet when it is executed?

```
int x = 1;
float y = 1.1f;
short z = 1;
Console.WriteLine((float) x + y * z - (x += (short) y));
```

- |        |        |
|--------|--------|
| a. 0.1 | b. 1.0 |
| c. 1.1 | d. 11  |

11) Which of the following statements is correct about the C#.NET code snippet given below?

```
short s1 = 20;
short s2 = 400;
int a;
a = s1 * s2;
```

- a. A value 8000 will be assigned to a.
- b. A negative value will be assigned to a.
- c. During arithmetic if the result exceeds the high or low value of the range the value wraps around till the other side of the range.
- d. An error is reported as widening conversion cannot take place.

12) What will be the output of the C#.NET code snippet given below?

```
namespace ConsoleApplication
```

```

{
    class SampleProgram
    {
        static void Main(string[] args)
        {
            int[] arr = new int[] { 1, 2, 3, 4, 5 };
            fun(arr);
        }
        static void fun(int[] a)
        {
            for (int i = 0; i < a.Length; i++)
            {
                a[i] = a[i] * 5;
                Console.Write(a[ i ] + " ");
            }
        }
    }
}

```

- a. 1 2 3 4 5
- b. 6 7 8 9 10
- c. 5 10 15 20 25
- d. 5 25 125 625 3125

13) What will be the output of the C#.NET code snippet given below?

```

namespace ConsoleApplication
{
    class SampleProgram
    {
        static void Main(string[] args)
        {
            int i = 10;
            double d = 34.340;
            fun(i);
            fun(d);
        }
        static void fun(double d)
        {
            Console.WriteLine(d + " ");
        }
    }
}

```

- a. 10.000000 34.340000
- b. 10 34
- c. 10 34.340
- d. 10 34.34

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

```

class Sample
{
    private int i;
    public Single j;
    private void DisplayData()
    {
        Console.WriteLine(i + " " + j);
    }
    public void ShowData()
    {
        Console.WriteLine(i + " " + j);
    }
}

```

- a. DisplayData() cannot be declared as private.
- b. DisplayData() cannot access j.
- c. ShowData() cannot access to i.
- d. There is no error in this class.

15) 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 ConsoleApplication
{
    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] = vat;
            }
            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

### **C – Write short answers (5 X 10 = 50 Marks)**

- 1) How to print following output in the console?

```
1
22
333
4444
55555
```

- 2) Write C# code to display the asterisk pattern as shown below.

```
*****
*****
*****
*****
*****
```

- 3) How to print following output?

```
4 x 1 = 4
4 x 2 = 8
4 x 3 = 12
4 x 4 = 16
4   x 5 = 20
```

- 4) Write C# code to declare a variable to store the age of a person. Then the output of the program is as an example shown below.

You are 20 years old.

- 5) Write C# code to declare two integer variables, one float variable, and one string variable and assign 10, 12.5, and "C# programming" to them respectively. Then display their values on the screen.

- 6) Write a program of sorting an array. Declare single dimensional array and accept 5 integer values from the user. Then sort the input in ascending order and display output.

- 7) Write a program to create two multidimensional arrays of same size. Accept value from user and store them in first array. Now copy all the elements of first array are second array and print output.

- 8) Define a new class in its own file. Call the class Car. Give it a single method called "Start". Make the method simply print "Car started!". In your main program, create a new Car object and call its Start() method. Your final program should simply therefore display the text "Car started!".

- 9) Rewrite the following program with exception handling. (Use Try, Catch and finally statement in relevant places)

```
private void TestMethod()  
{  
    int numerator;  
    int denominator;  
    int result;  
  
    numerator = Convert.ToInt32(txtTop.Text);  
    denominator = Convert.ToInt32(txtBtm.Text);  
  
    result = numerator / denominator;  
  
    lblresult.Text = Convert.ToString(result);  
}
```

10) Briefly explain followings

- a. Syntax errors
- b. Data type mismatch
- c. Logical errors
- d. Run time errors