Name: _____   Index No.: _____

Part I

Multiple Choice Questions

1. What will be the output of the code snippet?

   class Program

   {

   static void Main(string[] args)

   {

   String s1 = "Hello";

   String s2 = s1.Substring(0, 3);

   Console.WriteLine(s2);

   Console.ReadLine();

   }

   }

   A. Hel   B. Hell   C. Hello   D. H

2. Which of the following .NET components can be used to remove unused references from the managed heap?

   A. Common Language Infrastructure   B. CLR   C. Garbage Collector   D. Class Loader

3. Which of the following statements correctly define .NET Framework?

   A. It is an environment for developing, building, deploying and executing Desktop Applications, Web Applications and Web Services.

   B. It is an environment for developing, building, deploying and executing only Web Applications.

   C. It is an environment for developing, building, deploying and executing Distributed Applications.

   D. It is an environment for developing, building, deploying and executing Web Services.

4. Which of the following constitutes the .NET Framework?

    I ASP.NET Applications

    II CLR

    III Framework Class Library

    IV WinForm Applications

    V Windows Services

    A. I, II   B. II, III   C. III, IV   D. II, V

5. Which of the following statements are correct about data types?

    I If the integer literal exceeds the range of byte, a compilation error will occur.

    II We cannot implicitly convert non-literal numeric types of larger storage size to byte.

    III Byte cannot be implicitly converted to float.

    IV A char can be implicitly converted to only int data type.

    V We can cast the integral character codes.

    A. I, II, V   B. II, IV   C. III, V   D. I, II, V

6. Which of the following is an 8-byte Integer?
    A. Char   B. Long   C. Short   D. Byte

7. Which of the following is NOT an Integer?
    A. Char   B. Byte   C. Integer   D. Short

8. Which of the following does not store a sign?
    A. Short   B. Long   C. Integer   D. Byte

9. What is the size of a Decimal?   A. 4 byte   B. 8 byte   C. 16 byte   D. 32 byte

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 statement correctly assigns a value 33 to a variable c given that, byte a = 11, b = 22?

A. $c = (byte)(a + b)$; B. $c = (byte)a + (byte)b$; C. $c = (int)a + (int)b$; D. $c = (int)a + (int)b$;

12. Which of the following is the correct default value of a Boolean type?

A. 0 B. 1 C. True D. False

13. 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.

14. Which of the following are the correct ways to increment the value of variable a by 1?

I $++a++$;

II $a+ = 1$;

III $a + +1$;

IV $a = a + 1$;

V $a = +1$;

A. I, III B. II, IV C. III, V D. IV, V

15. Which of the following is NOT an Arithmetic operator in C#.NET?

A. $**$ B. $\backslash$ C. % D. $-$

16. Which of the following are NOT Relational operators in C#.NET?

I $>=$

II $! =$

III Not

IV $<=$

V $<>=$

A. I, III B. II, IV C. III, V D. IV, V

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

$Console.WriteLine(13/2 + \text{""} + 13\%2)$;

A. 6.51 B. 6.50 C. 60 D. 61

18. Which of the following is NOT an Assignment operator in C#.NET?

    A. \ =   B. / =   C. * =   D. + =

19. Which of the following statements are correct about functions and subroutines used in C#.NET?

    I A function cannot be called from a subroutine.

    II The ref keyword causes arguments to be passed by reference.

    III While using ref keyword any changes made to the parameter in the method will be reflected in that variable when control passes back to the calling method.

    IV A subroutine cannot be called from a function.

    V Functions and subroutines can be called recursively.

    A. I, II, IV   B. II, III, V   C. III, V   D. IV, V

20. How many values is a method capable of returning?   A. 1   B. 0   C. Depends upon how many params arguments it uses.   D. Any number of values.

21. Which of the following is the correct way to create an object of the class Sample?

    I Sample s = new Sample();

    II Sample s;

    III Sample s; s = new Sample();

    IV s = new Sample();

    A. I, III   B. II, IV   C. I, II, III   D. I, IV

22. Which of the following statements are correct about the C#.NET code snippet given below?
    sample c;
    c = new sample();

    I It will create an object called sample.

    II It will create a nameless object of the type sample.

    III It will create an object of the type sample on the stack.

    IV It will create a reference c on the stack and an object of the type sample on the heap.

    V It will create an object of the type sample either on the heap or on the stack depending on the size of the object.

    A. I, III   B. II, IV   C. III, V   D. IV, V

4

23. Which of the following statements is correct about classes and objects in C#.NET?

    A. Class is a value type.   B. Since objects are typically big in size, they are created on the stack.

    C. Objects of smaller size are created on the heap.   D. Objects are always nameless.

24. 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.

25. Which of the following statements is correct about constructors?

    A. If one-argument constructor is provided then compiler still provides a zero-argument constructor.

    B. Static constructors can use optional arguments.   C. Overloaded constructors cannot use optional
    arguments.   D. If a constructor is not provided, then compiler provides a zero-argument constructor.

26. 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.

27. Which of the following statements is correct?   A. There is one garbage collector per program running in
    memory.   B. There is one common garbage collector for all programs   C. An object is destroyed by
    the garbage collector when only one reference refers to it.   D. We have to specifically run the garbage
    collector after executing Visual Studio.NET.

28. Which of the following statements are correct about static functions?

    A. Static functions are invoked using objects of a class.   B. Static functions can access static data
    as well as instance data.   C. Static functions are outside the class scope.   D. Static functions are
    invoked using class.

29. Which of the following statements is correct about constructors in C#.NET?

    A. A constructor cannot be declared as private.   B. A constructor cannot be overloaded.   C. A
    constructor can be a static constructor.   D. A constructor cannot access static data.

30. In an inheritance chain which of the following members of base class are accessible to the derived class
    members?

       I static

      II protected

     III private

      IV shared

5

V public

A. I, III   B. II, V   C. III, IV   D. IV, V

31. Assume class B is inherited from class A. Which of the following statements is correct about construction of an object of class B?   A. While creating the object firstly the constructor of class B will be called followed by constructor of class A.   B. While creating the object firstly the constructor of class A will be called followed by constructor of class B.   C. The constructor of only class B will be called. D. The constructor of only class A will be called.

32. Which one of the following statements is correct?   A. Array elements can be of integer type only. B. The rank of an Array is the total number of elements it can contain.   C. The length of an Array is the number of dimensions in the Array.   D. The default value of numeric array elements is zero.

33. Which of the following is the correct output of the C#.NET code snippet given below?
$int[,,]a = newint[3, 2, 3];$
$Console.WriteLine(a.Length);$
A. 20   B. 4   C. 18   D. 10

34. Which of the following statements are correct about the C#.NET code snippet given below?
$int[][]intMyArr = newint[2][];$
$intMyArr[0] = newint[4]\{6, 1, 4, 3\};$
$intMyArr[1] = newint[3]\{9, 2, 7\};$
A. $intMyArr$ is a reference to a 2-D jagged array.   B. The two rows of the jagged array $intMyArr$ are stored in adjacent memory locations.   C. $intMyArr[0]$ refers to the zeroth 1-D array and $intMyArr[1]$ refers to the first 1-D array.   D. $intMyArr$ refers to $intMyArr[0]$ and $intMyArr[1]$.

35. Which of the following will be the correct output for the C#.NET code snippet given below?
String s1 = "ALL MEN ARE CREATED EQUAL";
String s2;
s2 = s1.Substring(12, 3);
Console.WriteLine(s2);
A. ARE   B. CRE   C. CR   D. REA

36. If s1 and s2 are references to two strings, then which of the following is the correct way to compare the two references?
A. s1 is s2   B. s1 = s2   C. s1 == s2   D. s1.Equals(s2)

37. Which of the following will be the correct output for the C#.NET code snippet given below? String s1="Kicit";

6

Console.Write(s1.IndexOf('c') + " ");

Console.Write(s1.Length);

A. 3 6   B. 2 5   C. 2 6   D. 3 5

38. Which of the following statements about a String is correct?.   A. A String is created on the stack.
B. Whether a String is created on the stack or the heap depends on the length of the String.   C. A
String can be created by using the statement String s1 = new String;   D. A String is created on the
heap.

39. Which of the following statement is correct about a String in C#.NET? A. A String is mutable because
it can be modified once it has been created.   B. A number CANNOT be represented in the form of
a String.   C. Methods of the String class can be used to modify the string.   D. A String has a
zero-based index.

40. Which of the following will be the correct output for the C#.NET code snippet given below?
String s1 = "Five Star";

String s2 = "FIVE STAR";

int c;

c = s1.CompareTo(s2);

Console.WriteLine(c);

A. 0   B. 1   C. 2   D. -1

41. Which of the following statements are correct about the String Class in C#.NET?

   I Two strings can be concatenated by using an expression of the form s3 = s1 + s2;

   II String is a primitive in C#.NET.

   III A string built using StringBuilder Class is Mutable.

   IV A string built using String Class is Immutable.

   V Two strings can be concatenated by using an expression of the form s3 = s1&s2;

   A. I, II, V   B. II, IV   C. I, III, IV   D. III, V

42. Which of the following statements are correct?

   I A struct can contain properties.

   II A struct can contain constructors.

   III A struct can contain protected data members.

   IV A struct cannot contain methods.

V A struct cannot contain constants.

A. 1, 2   B. 3, 4   C. 1, 2, 4   D. 3, 5

43. When would a structure variable get destroyed?   A. When no reference refers to it, it will get garbage collected.   B. Depends upon whether it is created using new or without using new.   C. When it goes out of scope.   D. Depends upon the Project Settings made in Visual Studio.NET.

44. Which of the following statements is correct about the C#.NET code snippet given below?
struct Book
{
private String name;
private int noofpages;
private Single price;
}
Book b = new Book();
A. The structure variable b will be created on the heap.   B. We can add a zero-argument constructor to the above structure.   C. When the program terminates, variable b will get garbage collected.
D. The structure variable b will be created on the stack.

45. Which of the following statements is correct?
A. A struct never declares a default constructor.   B. All value types in C# inherently derive from ValueType, which inherits from Object.   C. A struct never declares a default destructor.   D. In C#, classes and structs are semantically same.

46. Which of the following statements are correct about Structures used in C#.NET?

I A Structure can be declared within a procedure.

II Structs can implement an interface but they cannot inherit from another struct.

III Struct members cannot be declared as protected.

IV A Structure can be empty.

V It is an error to initialize an instance field in a struct.

A. I, II, IV   B. II, III, V   C. II, IV   D. I, III

47. Which of the following statements is true about an enum used in C#.NET?   A. An implicit cast is needed to convert from enum type to an integral type.   B. An enum variable cannot have a public access modifier.   C. An enum variable cannot have a private access modifier.   D. An enum variable can be defined inside a class or a namespace.

48. Which of the following statements are correct about an enum used in C#.NET?

    I To use the keyword *enum*, we should either use [*enum*] or *System.Enum*.

    II Enum is a keyword.

    III Enum is class declared in System.Type namespace.

    IV Enum is a class declared in the current project's root namespace.

    V Enum is a class declared in System namespace.

    A. I, III   B. II, IV   C. II, V   D. III, IV

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

```
enum color: int
{
red,
green,
blue = 5,
cyan,
magenta = 10,
yellow
}
Console.Write( (int) color.green + ", " );
Console.Write( (int) color.yellow );
```

    A. 2, 11   B. 1, 11   C. 2, 6   D. None of the above

50. Which of the following CANNOT be used as an underlying datatype for an *enum* in C#.NET? A. byte   B. short   C. float   D. int

51. Which of the following statements are correct about enum used in C#.NET?

    I Every enum is derived from an Object class.

    II Every enum is a value type.

    III There does not exist a way to print an element of an enum as a string.

    IV Every enum is a reference type.

    V The default underlying datatype of an enum is int.

    A. I, II, V   B. I, IV   C. III, V   D. II, III, IV

52. Which of the following statements is correct about an enum used in C#.NET?

    A. enum is a reference type.   B. enum is a value type.   C. Whether it a value type or a reference type depends upon size.   D. Whether it a value type or a reference type depends upon a Project Setting made in Visual Stiiclio.NET.

53. If a namespace is present in a library then which of the following is the correct way to use the elements of the namespace?   A. Add Reference of the namespace. Use the elements of the namespace.   B. Add Reference of the namespace. Import the namespace. Use the elements of the namespace.   C. Import the namespace. Use the elements of the namespace.   D. Copy the library in the same directory as the project that is trying to use it. Use the elements of the namespace.

54. Which of the following statements is correct about a namespace in C#.NET?   A. Namespaces help us to control the visibility of the elements present in it.   B. A namespace can contain a class but not another namespace.   C. If not mentioned, then the name 'root' gets assigned to the namespace.   D. It is necessary to use the using statement to be able to use an element of a namespace.

55. A derived class can stop virtual inheritance by declaring an override as

    A. inherits   B. inheritable   C. extends   D. sealed

56. Which of the following statements is correct?

    A. When used as a modifier, the new keyword explicitly hides a member inherited from a base class.   B. Operator overloading works in different ways for structures and classes.   C. It is not necessary that all operator overloads are static methods of the class.   D. The cast operator can be overloaded.

57. Which of the following statements is correct?

    A. Static methods can be a virtual method.   B. Abstract methods can be a virtual method.   C. It is necessary to override a virtual method.   D. When overriding a method, the names and type signatures of the override method must be the same as the virtual method that is being overriden.

58. Which of the following statements is correct?

    A. The conditional logical operators cannot be overloaded.   B. When a binary operator is overloaded the corresponding assignment operator, if any, must be explicitly overloaded.   C. We can use the default equality operator in an overloaded implementation of the equality operator.   D. A public or nested public reference type does not overload the equality operator.

59. Which of the following modifier is used when a virtual method is redefined by a derived class?

    A. overloads   B. override   C. overridable   D. virtual

60. Which of the following statements is correct?

    A. Only one object can be created from an abstract class.   B. By default methods are virtual.   C. If

a derived class does not provide its own version of virtual method then the one in the base class is used.
D. If the method in the derived class is not preceded by override keywords, the compiler will issue a warning and the method will behave as if the override keyword were present.

Part II

Indicate whether the following are True/False (T/F)

61. ____ When using the *ref* parameter modifier arguments must be assigned before leaving method scope.

62. ____ Like a *ref* parameter, an *out* parameter is passed by reference.

63. ____ Mandatory parameters and *params* modifiers must occur before *optional* parameters in both the method declaration and the method call.

64. ____ Static procedures access instance data.

65. ____ It is possible to invoke Garbage Collector explicitly.

66. ____ It is possible for you to prevent an object from being created by using zero argument constructor?

67. ____ C#.NET structures are always value types.

68. ____ An enum can be declared inside a class, struct, namespace or interface.

69. ____ The finally block is used to execute a given set of statements, whether exception is thrown or not.

70. ____ Generics are the same as generics in Java and templates in C++.

Part III

Fill-in the blanks

71. The acronym CLR stands for _____.

72. Object Oriented Programming (OOP) is a style of programming in which your code is broken up into units, known as _____.

73. Pointer variable is used to hold the _____ of the variable.

74. The size of the char pointer is _____?

75. The namespace in which the string class is built is _____.

76. _____ is the method used to remove white space from string.

77. The term _____ is used to refer to parameterized types in C#.

78. The _____ reference gets created when a member function (non-shared) of a class is called.

79. The space required for structure variables is allocated on the _____.

80. The _____ modifier must necessarily be placed as the last argument of a method.