

C# Essentials

Name: _____

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Date: _____

Total Marks : 30

Duration : 30 min

1. The application's entry point is required to implement which one of the following?

- a) A "static" access modifier
- b) An "abstract" access modifier
- c) A version that accepts a string array
- d) A "void" return type
- e) A version that does not accept parameters

2. Which one of the following code samples correctly implements the use of an "if" statement?

- a)
`int i = 0;
if (i == 0) Console.WriteLine("i is 0");`
- b)
`int i = 0;
if (i)
{
Console.WriteLine("I is 0");
}`
- c)
`int i = 0;
if ((bool)i) Console.WriteLine("i is 0");`
- d)
`int i = 0;
if (i) Console.WriteLine("i is 0");`
- e)
`int i = 0;
if (i = 0) Console.WriteLine("i is 0");`

3. When are finalizer/destructor methods called?

- a) When the object explicitly is set to nothing
- b) When the object falls out of scope
- c) When the object explicitly is set to null
- d) When the Dispose method is called
- e) When the object is garbage collected

4. When a new instance of a type is created, what is the type of method implicitly called?

- a) Generation
- b) Constructor
- c) New

5. What C# keyword class access modifier specifies that the class is concrete and CANNOT be derived from?

- a) notinheritable
- b) final
- c) internal
- d) abstract
- e) sealed

6. What is the name of the implicit input parameter of a set accessor for any property?

- a) value
- b) this
- c) The name of the property
- d) RHS
- e) rhs

7.

`public void Increase (int i){...}`

```
public void Increase (long i){...}
```

Given the above overloaded methods, which one of the following results in calling the overloaded Increase method with the long parameter?

- a) `Increase(new long {5});`
- b) `Increase(5L);`
- c) `Increase(5);`
- d) `Increase(new System.Int64(5));`
- e) `Increase(CLng(5));`

8. All types derive from a single base type called:

- a) `System.Base`
- b) `System.Object`
- c) `System.Root`
- d) `System.Type`

9. In C#, which of the following is not a valid C# jump statement?

- a) `jump`
- b) `goto`
- c) `return`
- d) `throw`

10. The statement that is used to replace multiple if statements is called

- a) The case statement
- b) The switch statement
- c) The nested statement
- d) The #endif statement

11. Which of the following is not a C# keyword?

- a) `if`
- b) `delegate`
- c) `private`
- d) `implements`

12. What is the minimum number of assemblies a .NET application can have?

- a) 0
- b) 1
- c) 2
- d) 3

13. To join two strings together, we use

- a) concat
- b) +
- c) &
- d) nothing

14. Reading an integer is done with

- a) `Console.ReadLine();`
- b) `int.Parse(Console.ReadLine());`
- c) `int.Parse(Console.ReadLine());`
- d) `Parse(Console.ReadLine());`

15. A significant difference between a property and a field is

- a) capitalization
- b) parentheses
- c) accessibility modifiers
- d) how they are declared

16. If a is an object and p is a property and we assign `a.p = x`, x is represented in p by

- a) value
- b) x
- c) p.x
- d) p

17. A type can have several constructors provided that

- a) they all have different names
- b) they all have different parameter lists (signatures)
- c) at least one is the default constructor
- d) one constructor initializes all the locally declared fields

18. Which statement is true?

- a) A property must have the same name as a field in that type, but with a capital letter.

- b) A property must always be public.
- c) A property defines get and set behaviour.
- d) A property defines get or set behaviour or both.

19. If the following is written in a program, what will happen?

```
double[] a = new double[10];  
for (int i=1; i<=10; i++)  
    a[i] = i;  
Console.WriteLine("Completed");
```

- a) Completed will be printed
- b) IndexOutOfRangeException will be raised
- c) Compilation error at line 3 because a is a double array
- d) Compilation error because a[0] does not have a value

20. Overloading of methods means that

- a) They have the same names
- b) They have the same names but are different classes in a hierarchy
- c) They have the same names and the same parameter lists
- d) They have the same names and different parameter lists

21. If a method is declared as virtual, then any derived class

- a) may provide an alternative (overridden) version of it with exactly the same parameters
- b) must provide an alternative (overridden) version of it with exactly the same parameters
- c) may provide an alternative (overridden) version of it with the same or different parameters
- d) must provide an alternative (overridden) version of it with the same or different parameters

22. A loop to print the first 10 odd numbers would be

- a)

```
for (int i=1; i<=10; i+=2)  
    Console.WriteLine(i);
```
- b)

```
for (int i=1; i<19; i+=2)  
    Console.WriteLine(i);
```
- c)

```
for (int i=0; i<10; i++)  
    Console.WriteLine(i*2+1);
```

(d)
for (int i=0; i<=10; i++)
 Console.WriteLine(i*2+1);

23. If we have declared a method

```
void Update (x, out y){...}
```

which of the following is completely correct?

- a) Update(w, z)
- b) Update(w, out z);
- c) Update(in w, out z);
- d) Both (b) and (c)

24. If a switch statement does not include a default clause, the effect is

- a) a compilation error
- b) that if the value of the selector expression does not match any of the labels, then the case with a label closest to the selector value is chosen
- c) that if the value of the selector expression does not match any of the labels, then execution continues at the statement after the switch
- d) an execution error

25. A valid switch statement for setting the days in a month (ignoring leap years) would be:

a)

```
int DaysIn(int month) {  
    switch (month) {  
        case 9: case 4: case 6: case 11: return 30;  
            break;  
        case 2 : return 28;  
            break;  
        else return 31;  
            break;  
    }  
    else return 31;  
}  
b)  
int DaysIn(int month) {  
    switch (month) {
```

```
        case 9, 4, 6, 11: return 30;
            break;
        case 2 : return 28;
            break;
        default: return 31;
            break;
    }
}
```

c)

```
int DaysIn(int month) {
    switch (month) {
        case 9: case 4: case 6: case 11: return 30;
        case 2 : return 28;
        default: return 31;
    }
}
```

d)

```
int DaysIn(int month) {
    int days;
    switch (month) {
        case 9: case 4: case 6: case 11: days = 30;
            break;
        case 2 : days = 28;
            break;
        default: days = 31;
            break;
    }
}
```

26. An array type is classified as a

- a) value type
- b) reference type
- c) either value or reference
- d) neither value nor reference, it is in a group of its own

27. To declare a jagged array with 4 rows and 1 more column than the row index (i.e. a triangle), we can use:

a)

```
int a[][];  
for (int i=0; i<4; i++)  
    int a[][i] = new int[4][i+1];
```

b)

```
int a[][] = new int[4][];  
for (int i=0; i<4; i++)  
    a[i] = new int[i+1];
```

c)

```
int a[][] = new int[4][Row+1];
```

d)

```
int a[][] = new int[4][];  
for (int i=0; i<4; i++)  
    a[i] = new int[i];
```

28. If IAnything is an interface, and Type1 and Type2 are classes which implement the interface, which statement about the following assignment sequence is correct?

```
IAnything var1;  
Type1 var2 = new Type1();
```

```
var1 = var2;           // 1  
var2 = var1;           // 2  
var2 = (Type1) var1;   // 3
```

- a) The sequence will always execute correctly
- b) 1 will execute correctly; 2 and 3 might fail at runtime
- c) 1 will fail at runtime because var1 has not been instantiated yet; 2 and 3 will execute correctly
- d) 1 will execute correctly; 2 will not compile; 3 might fail at runtime

29. If B which has a constructor with two fields initialized in its constructor and C derives from this class and has one additional field 'cField' of its own, then which of these C constructors would instantiate a C variable and initialize all three fields?

a)

```
C(int i, int j, int k) : base(i, j) {  
    cField = k;  
}
```


b)
C(int i, int j, int k) {
 B(i, j);
 cField = k;
}

c)
C(int i, int j, int k) {
 base(i, j)
 cField = k;
}

d)
C(int i, int j, int k) {
 super(i, j)
 cField = k;
}

30. When will the garbage collector run?

- a) Every 15 minutes
- b) Once every day at 1:00 am
- c) When the application is low on memory
- d) Randomly based on the resource load on the system