

Section-A

Q3

Ans3:

Factorial of a Number is obtained from the Result of multiplying a series of descending Natural Numbers.

3 ways for finding factorial of a Number (5) ← { acc. to ques }

① Using For Loop:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
// Necessary Header files
```

```
namespace factorialof5
```

```
{
```

```
    class Program
```

```
    {
```

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

```
        {
```

```
            int i, number, fact;
```

```
            Console.WriteLine("Enter the Number");
```

```
            number = int.Parse(Console.ReadLine());
```

```
            fact = number;
```

```
            for (i = number - 1; i >= 1; i--)
```

```
            {
```

```
                fact = fact * i;
```

```
            }
```

```
            Console.WriteLine("\n Factorial of Given Number is: " + fact);
```

```
            Console.ReadLine();
```

```
        }
```

```
    }
```

Yash

Q12) Ans: NAMESPACE : It is designed for providing a way to keep one set of Names separate from another. The class Names declared in one namespace does not conflict with the same class names declared in another.

Defining a Namespace:

```
namespace namespace-name {
    // code declarations
}
```

Namespace can have following types as its members :-

1. Nested Namespaces → eg: namespace MyNamespace

2. Classes

3. Interfaces

4. Structures

5. Delegates

```
{
    namespace NestedNamespace
    {
        // Body of Nested Namespace
    }
}
```

eg: Program using NAMESPACE in C#

```
using System;
```

```
namespace first_namespace {
```

```
    class namespace-cl {
```

```
        public void func() {
```

```
            Console.WriteLine("Inside first-space");
```

```
        }
    }
}
```

_____x_____

Yash

Q5
Ans ⑤:

| Managed Code | Unmanaged Code |
|---|---|
| <ol style="list-style-type: none"> 1. It is executed by managed runtime environment or managed by the CLR. 2. It provides security to the application written in .NET Framework. 3. Memory Buffer overflow doesn't occur. 4. It provides runtime services like Garbage collection, except exception handling etc. 5. The source code is compiled in the intermediate language k/w as <u>IL or MSIL or CIL</u>. 6. It doesn't provide Low-level access to the programmer. | <ol style="list-style-type: none"> 1. It is executed directly by the operating system. 2. It doesn't provide any security to the application. 3. Memory Buffer overflow may occur. 4. It doesn't provide Runtime services like Garbage collection, exception handling etc. 5. The source code directly compile into Native Language. 6. It provides low-level access to the programmer. |

Section-04

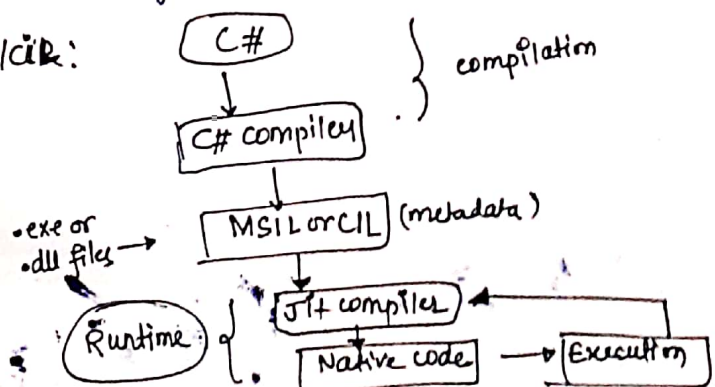
Q6
Ans ⑥:

MSIL: It stands for Microsoft Intermediate Language (MSIL), also k/w as Common Intermediate Language (CIL) is a set of instructions that are platform independent and are generated by the language specific compiler from the source code.

It is platform independent and consequently, it can be executed on any of the Common Language Infrastructure supported environments such as the Windows .NET runtime.

The MSIL is converted into particular computer environment specific machine code by the JIT compiler.

Execution process in MSIL/CIL:



Q7
Ans ①: ASSEMBLY: They are fundamental units of deployment, version control, reuse, activation scoping, and security permissions for .NET based applications. It is a collection of types and resources that are built to work together and form a logical unit of functionality.
It takes the form of executable (.exe) or dynamic link library (.dll)
eg: .dll, .exe extension files.

Q8
Ans ②: Garbage Collection in C#: When we create any object in C#, CLR (common language runtime) allocates memory for the object from Heap. This process is repeated for each newly created object, but there is a limitation to everything. Memory is not unlimited and hence we need to clean some space in order to make room for new objects.
Finally, it manages the allocation and release of memory. The garbage collector serves as an automatic memory manager.

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