

Dr. Babasaheb Ambedkar Open University, Ahmedabad

Term-End Examination : January-2026

Course Name : MSCIT

Date : 16-02-2026

Subject Name : Web Development Tools

Time : 03:00PM TO 05:15PM

Subject Code : MSCIT-301

Max Marks : 70

Section A

Q.-1. Answer the following (Attempt any three) (30)

- (1) Describe the process of .NET program execution, explaining the roles of specific compilers, MSIL, and the JIT compiler.
- (2) Explain the concept of Assemblies, including the differences between Static/Dynamic and Private/Shared assemblies.
- (3) Detail the importance of Metadata in .NET, its stored information, and its advantages like language interoperability.
- (4) Discuss Garbage Collection in .NET, explaining how it manages memory and its primary benefits for developers
- (5) Detail the concept of Inheritance in C#, including types of inheritance supported and the use of 'virtual' and 'override' keywords

Section B

Q.-2. Write short notes on any four of the following topics. (20)

- (1) List the main components of the .NET Framework.
- (2) List the advantages of Metadata in .NET.
- (3) Describe the three types of comments available in C#.
- (4) Explain Boxing and Unboxing with an example.
- (5) How does the 'continue' statement work in a C# loop?
- (6) What is the role of the 'finally' block in exception handling?

Section C

Q.-3. Multiple Choice Questions. (10)

(1) Which component of the .NET Framework acts as the virtual machine that compiles and executes programs?

- | | |
|--------|---------|
| A) BCL | B) CLR |
| C) CTS | D) MSIL |

(2) What is the platform-independent code generated by C# or VB.NET compilers called?

- | | |
|-----------------|----------------|
| A) Native Code | B) MSIL |
| C) Machine Code | D) Binary Code |

(3) Where is Metadata and MSIL stored together in memory?

- | | |
|------------|-------------|
| A) PE file | B) .cs file |
| C) GAC | D) BCL |

(4) Which JIT compiler compiles all source code to machine code at the time of application deployment?

- | | |
|---------------|-------------|
| A) Normal JIT | B) Pre-JIT |
| C) Econo JIT | D) Real JIT |

(5) Which process manages the allocation and auto clean-up of memory for objects no longer in use?

- | | |
|-----------------------|---------------------|
| A) JIT Compilation | B) MSIL Execution |
| C) Garbage Collection | D) Metadata Mapping |

(6) Which keyword is used to declare a class in C#?

- A) define
- B) struct
- C) class
- D) object

(7) Which keyword is used to create a concrete entity (object) based on a class?

- A) static
- B) new
- C) this
- D) void

(8) Which statement is used to terminate a looping or switch statement?

- A) continue
- B) break
- C) goto
- D) exit

(9) What is the ultimate base class of all other classes in the .NET framework?

- A) System.Base
- B) System.Root
- C) System.Object
- D) System.Exception

(10) Which keyword allows a derived class to provide a new implementation of a virtual base class member?

- A) virtual
- B) override
- C) new
- D) abstract

Section D

Q.-4. Indicate whether the following statements are True or False.

(10)

- (1) The .Net Framework acts like a virtual machine that compiles and executes programs in different languages like VB.Net and C#.
- (2) The Common Language Runtime (CLR) provides services such as memory management and thread management for .Net programs.
- (3) Dynamic Assemblies run directly from memory and are not saved to disk before execution.
- (4) The Econo JIT compiler stores compiled code in the cache so it can be used again when called.
- (5) Reference types store the memory address (reference) of where the actual value is stored.
- (6) Unboxing is the process of converting a value type to a reference type data type.
- (7) A "get" property accessor is used to assign a new value to a private field.
- (8) C# supports multiple class inheritance, allowing one class to be derived from more than one base class.
- (9) Background threads prevent a process from being stopped by the CLR.
- (10) The StreamReader class is used specifically to read from text files.
