



BCA/NET-404

2025

(4th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper : NET-404

(C# and ASP.NET)

Full Marks : 70

Pass Marks : 45%

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 45)

*The figures in the margin indicate full marks
for the questions*

1. (a) What is Common Language Runtime?
What are the components of Common
Language Runtime with reference
to C#? 3
- (b) What is .NET Technology? Describe
briefly its origin. 3
- (c) Define interface along with its syntax.
Write a program to demonstrate
implementation of multiple inheritance
using interface. 3

Or

- (a) What do you understand by OOP? Explain various concepts of Object-Oriented Programming. 6
- (b) Describe briefly the visibility of class members declared with the following modifiers : 3
- private
 - protected
 - public
2. With reference to C#, explain the following with suitable programs : $3 \times 3 = 9$
- (a) Augmented Assignment Operator
- (b) Conditional Operator
- (c) Comparison Operator

Or

- (a) Write the difference between Interpreted Language and Compiled Language. Mention suitable examples of each. 3
- (b) State two significant differences between classes and structs. In what ways are they similar? 3
- (c) State three important characteristics of constructors. 3

3. (a) What is the difference between static and non-static/instance variables and methods in a C# class? Explain using a suitable program. 4
- (b) What is inheritance? Describe the types of inheritance with suitable programs along with proper diagram. 5

Or

What are the steps required to create and use delegate? Explain the steps with suitable programs. 9

4. (a) How is a thread created and started? 3
- (b) What is the function of Sleep() and Join() methods of the thread class? 3
- (c) What is a thread pool? 3

Or

- (a) Explain the various components of Visual Studio IDE. 6
- (b) What are the controls in Microsoft Visual Studio? Mention five examples of control. 3

5. (a) Explain the following terms : 3
- Debugging
 - Compile-time errors
 - Run-time errors

- (b) Write a C# program to demonstrate try and catch for exception handling. 3
- (c) Explain boxing and unboxing with reference to C# with suitable programs. 3

Or

- (a) Design a class to represent a bank account. Include the following members : 6

Data members :

- Name of the depositor
- Account number
- Type of account
- Balance amount in the account

Method :

- To assign initial values
- To deposit an amount
- To withdraw an amount after checking balance
- To display the name and balance

- (b) Explain any three types of loop using suitable programs. 3

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(4th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper : NET-404

(**C# and ASP.NET**)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

1. Put a Tick (✓) mark against the correct answer in the brackets provided : 1×10=10

(a) In C#, to include any namespace in your program you use

- (i) imports ()
- (ii) include ()
- (iii) using ()
- (iv) None of the above ()

(b) _____ keyword is used to override a method without declaring it virtual. It also hides the base class method.

- (i) Base ()
- (ii) New ()
- (iii) Override ()
- (iv) Abstract ()

(c) A class that cannot be subclassed is called a/an _____ class.

(i) sealed ()

(ii) virtual ()

(iii) abstract ()

(iv) None of the above ()

(d) What is the correct syntax to output "Hello World" in C#?

(i) Console.WriteLine ("Hello World"); ()

(ii) System.out.println("Hello World"); ()

(iii) print ("Hello World"); ()

(iv) cout << "Hello World"; ()

(e) What is the correct way to create an object called myObj of MyClass?

(i) MyClass myObj = new MyClass(); ()

(ii) class MyClass = new myObj(); ()

(iii) class myObj = new MyClass(); ()

(iv) new myObj = MyClass(); ()

(f) Which access modifier makes the code only accessible within the same class?

- (i) final ()
- (ii) public ()
- (iii) private ()
- (iv) abstract ()

(g) Which statement is used to stop a loop?

- (i) exit ()
- (ii) return ()
- (iii) stop ()
- (iv) break ()

(h) Which of the following is true about "base" keyword?

- (i) to invoke the constructor method of the superclass ()
- (ii) base() method arguments are called without specifying the data types ()
- (iii) base is used to access a public or protected member defined in a parent class ()
- (iv) All of the above ()

(i) Which of the following is not characteristic of abstract method?

(i) It cannot have its own implementation ()

(ii) Its implementation must be provided in a non-abstract derived class by overriding the method ()

(iii) It can be declared only in abstract class ()

(iv) It can take either static or virtual modifiers ()

(j) The class "System Exception" is used for which of the following causes?

(i) A failed run-time check; used as a base class for other exceptions ()

(ii) Failure to access a type member such as a method or field ()

(iii) An array index out of bounds ()

(iv) An argument to a method was invalid ()

2. Indicate whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark :

$$1 \times 5 = 5$$

- (a) Precedence decides the order in which an expression is evaluated.

(T / F)

- (b) By default, the type of an enum is byte.

(T / F)

- (c) C# does not permit to assign values to data members at the time of declaration.

(T / F)

- (d) C# supports multiple inheritance of class.

(T / F)

- (e) In a C# program, the Main() method contains a string type array as a parameter to accept command line arguments.

(T / F)

3. Answer the following questions in short : $2 \times 5 = 10$

(a) Write a program using `is` and `as` keyword.

(b) Write a program using sealed keyword.

(c) What is method overloading? Give example.

(d) What are implicit and explicit constructors?

(10)

(e) Define up-casting and down-casting.

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