



UNIVERSITY OF RUHUNA

Faculty of Engineering

End-Semester 2 Examination: March 2026

Module No: EE2202

Module Name: Object Oriented Programming
C-23 (Proper)

Part-A

[Part-A + Part-B = 2 hours]

Instructions for candidates

- Answer in the Sheet Provided by putting X mark on the letter: (a), (b), (c), or (d) which corresponds to the correct answer, by using a black or blue pen.
- Question paper contains 40 multiple choice questions.
- Answer all questions. Each question has only one answer.
- Each correct answer carries 0.5 marks.

1. What is the output of the following C# code snippet?

```
int x = 4;
int y = 5;
Console.WriteLine($"{x} + {y} = {x + y}");
```

- (a) {x} + {y} = {x + y}
- (b) 4 + 5 = {x + y}
- (c) 4 + 5 = 9
- (d) \$4 + 5 = 9

2. What will occur if the user inputs "50b" when the following C# code executes?

```
Console.WriteLine("Enter a quantity:");
int quantity = int.Parse(Console.ReadLine());
```

- (a) The variable quantity will be assigned the value 50.
- (b) A FormatException will be thrown at runtime.
- (c) The compiler will flag a syntax error before the program runs.
- (d) An OverflowException will be thrown at runtime.

3. How do you format a numeric variable balance to display as currency (e.g., \$1,234.56) assuming your system is set to en-US culture?

- (a) {balance:F2}
- (b) {balance:M}
- (c) {balance:C}
- (d) {balance:\$}

4. What is the value of the result variable in the following snippet?

```
int a = 10;
int b = 3;
double result = a / b;
```

- (a) 3.3333
- (b) 3.0
- (c) 3
- (d) A compile-time error occurs.

5. What will be printed to the console when this code runs?

```
int baseScore = 50;
int bonus = 10;
int multiplier = 2;
Console.WriteLine($"Final Score:{baseScore + bonus * multiplier}");
```

- (a) Final Score: 120
- (b) Final Score: {baseScore + bonus * multiplier}
- (c) Final Score: 70
- (d) Final Score: 60

6. What is the output of the following C# code containing a nested loop?

```
int count = 0;
for (int i = 0; i < 3; i++)
    for (int j = i; j < 3; j++)
        count++;
Console.Write(count);
```

- (a) 9
- (b) 8
- (c) 6
- (d) 3

7. What will be printed to the console when this code executes?

```
int sum = 0;
for (int i = 1; i <= 5; i++){
    if (i % 2 == 0) continue;
    sum += i;
}
Console.Write(sum);
```

- (a) 15
- (b) 9
- (c) 6
- (d) 12

8. Analyze the following do-while loop. What is the final output?

```
int a = 10;
do{
    a -= 3;
} while (a > 10);
Console.Write(a);
```

- (a) 10
- (b) 7
- (c) 4
- (d) An infinite loop will occur.

9. What is the output of the following code snippet?

```
int score = 85;
bool hasBonus = true;
if (score >= 90){
    Console.Write("Grade: A");
}
else if (score >= 80 && !hasBonus){
    Console.Write("Grade: B");
}
else if (score >= 80 && hasBonus){
    Console.Write("Grade: A-");
}
else{
    Console.Write("Grade: C");
}
```

- (a) Grade: A
- (b) Grade: B
- (c) Grade: A-
- (d) Grade: C

10. What value will be assigned to the message variable?

```
int stock = 0;
string message = (stock > 10) ? "In Stock" : (stock == 0) ? "Out of Stock" : "Low Stock";
```

- (a) "In Stock"
- (b) "Out of Stock"
- (c) "Low Stock"
- (d) A compile-time error occurs due to multiple question marks.

11. What is the output of this code snippet?

```
int category = 2;
switch (category){
    case 1:
    case 2:
        Console.WriteLine("Standard");
        break;
    case 3:
        Console.WriteLine("Premium");
        break;
    default:
        Console.WriteLine("Unknown");
        break;
}
```

- (a) Standard
- (b) Premium
- (c) Unknown
- (d) Compile Error (because case 1 is missing a break statement)

12. What is the output of the following code snippet?

```
for (int i = 5; i > 2; i--){
    Console.WriteLine(i);
}
```

- (a) 432
- (b) 543
- (c) 5432
- (d) The code produces an infinite loop.

13. How many times will the following loop print "Y"?

```
int count = 0;
do
{
    Console.WriteLine("Y");
    count++;
} while (count < 0);
```

- (a) 0 times
- (b) 1 time
- (c) 2 times
- (d) Infinitely

14. What is the output of the following code snippet?

```
int sum = 0;
int i = 1;
while (i <= 5)
{
    if (i == 3) break;
    sum += i;
    i++;
}
Console.Write(sum);
```

- (a) 15
- (b) 6
- (c) 3
- (d) 0

15. What will be printed to the console when this code executes?

```
int total = 0;
for (int i = 0; i < 5; i++)
{
    if (i % 2 != 0) continue;
    total += i;
}
Console.Write(total);
```

- (a) 6
- (b) 10
- (c) 4
- (d) 0

16. What is the final value of count after these nested loops finish executing?

```
int count = 0;
for (int i = 1; i <= 3; i++)
{
    for (int j = 1; j <= 3; j++)
    {
        if (j == 2) break;
        count++;
    }
}
Console.Write(count);
```

- (a) 9
- (b) 6
- (c) 3
- (d) 1

17. What is the output of the following while loop?

```
int x = 0;
while (x++ < 3)
{
    Console.Write(x);
}
```

- (a) 012
- (b) 123
- (c) 0123
- (d) 1234

18. What happens when the following code snippet is executed?

```
int[] numbers = { 10, 20, 30 };
Console.Write(numbers[3]);
```

- (a) 30
- (b) 0
- (c) A compile-time error occurs.
- (d) An `IndexOutOfRangeException` is thrown at runtime.

19. What is the output of the following C# code?

```
int[] scores = new int[3];
scores[0] = 85;
scores[2] = 90;
Console.Write(scores[1]);
```

- (a) 85
- (b) 90
- (c) 0
- (d) null

20. What is the final output of this code snippet?

```
int[] data = { 2, 4, 6 };
for (int i = 0; i < data.Length; i++)
{
    data[i] *= 2;
}
Console.Write(data[1]);
```

- (a) 4
- (b) 8
- (c) 12
- (d) 2

21. What is the output of the following code snippet?

```
public class Student
{
    public int Score { get; set; }
}

// In another method
// Assume Student class is visible in the method
Student s1 = new Student();
s1.Score = 95;
Student s2 = new Student();
Console.WriteLine(s2.Score);
```

- (a) 95
- (b) null
- (c) 0
- (d) Compile-time error

22. What happens when the following code is compiled and executed?

```
public class BankAccount
{
    private decimal balance = 100.0m;
}

// In another method
// Assume BankAccount class is visible in the method
BankAccount account = new BankAccount();
Console.WriteLine(account.balance);
```

- (a) 100.0
- (b) 0.0
- (c) A compile-time error occurs due to the protection level.
- (d) A runtime exception is thrown.

23. What is the output of the following code?

```
public class Counter
{
    public static int TotalCount = 0;
    public Counter()
    {
        TotalCount++;
    }
}

// In another method
// Assume Counter class is visible in the method
Counter c1 = new Counter();
Counter c2 = new Counter();
Console.WriteLine(Counter.TotalCount);
```

- (a) 0
- (b) 1
- (c) 2
- (d) Compile-time error

24. What happens when the following code is compiled and executed?

```
public class Product
{
    public decimal Price { get; set; }
}

// In another method
// Assume Product class is visible in the method
Product p = new Product();
p.Price = 99.99;
Console.Write(p.Price);
```

- (a) 99.99
- (b) 0
- (c) A compile-time error occurs.
- (d) A runtime exception is thrown.

25. What is the output of the following C# code?

```
using System;
public class MathOps
{
    public int Subtract(int a, int b)
    {
        return b - a;
    }
}
public class Program
{
    public static void Main(string[] args)
    {
        MathOps math = new MathOps();
        Console.Write(math.Subtract(10, 4));
    }
}
```

- (a) 6
- (b) -6
- (c) 14
- (d) The code will not compile.

26. What is the output of the following code snippet, demonstrating how a reference type behaves when passed to a method?

```
public class Person { public int Age; }

public class Program
{
    public static void Main(string[] args)
    {
        Person myPerson = new Person { Age = 20 };
        UpdateAge(myPerson);
        Console.WriteLine(myPerson.Age);
    }

    public static void UpdateAge(Person p) { p.Age = 30; }
}
```

- (a) 20
 - (b) 30
 - (c) 0
 - (d) Compile-time error
27. What is the output of the following code snippet, demonstrating both a ref parameter and a standard parameter?

```
public class Program
{
    public static void Main(string[] args)
    {
        int x = 5;
        int y = 5;
        ModifyValues(ref x, y);
        Console.WriteLine($"{x}{y}");
    }

    public static void ModifyValues(ref int a, int b)
    {
        a += 2;
        b += 2;
    }
}
```

- (a) 77
- (b) 55
- (c) 75
- (d) 57

28. What is the output of the following C# code snippet demonstrating a built-in method that uses an out parameter?

```
public class Program
{
    public static void Main(string[] args)
    {
        string input = "25";
        if (int.TryParse(input, out int result))
        {
            Console.Write(result * 2);
        }
        else
        {
            Console.Write("Invalid");
        }
    }
}
```

- (a) 25
- (b) 50
- (c) Invalid
- (d) Compile-time error

29. What is the result of attempting to compile and run the following C# code?

```
public class Program
{
    public static void Main(string[] args)
    {
        int counter;
        UpdateCounter(ref counter);
    }

    public static void UpdateCounter(ref int value)
    {
        value += 1;
        Console.Write(value);
    }
}
```

- (a) The code compiles and outputs 1.
- (b) A compile-time error occurs because the 'ref' argument is not initialized.
- (c) The code compiles but throws a runtime exception.
- (d) The code compiles and outputs 0.

30. What happens when you attempt to compile and run the following code snippet?

```
public class User
{
    public string Username { get; private set; }
```

```

    public User(string name)
    {
        Username = name;
    }
}

public class Program
{
    public static void Main(string[] args)
    {
        User u = new User("admin");
        u.Username = "guest";
        Console.Write(u.Username);
    }
}

```

- (a) admin
- (b) guest
- (c) null
- (d) Compile-time error

31. Analyze the following code. What is the expected result?

```

public class SystemConfig
{
    public int MaxTimeout { get; } = 30;
}

public class Program
{
    public static void Main(string[] args)
    {
        SystemConfig config = new SystemConfig();
        config.MaxTimeout = 60;
        Console.Write(config.MaxTimeout);
    }
}

```

- (a) 30
- (b) 60
- (c) 0
- (d) Compile-time error

32. What will be printed to the console when this code runs?

```

public class UserProfile
{
    private string _role;
    public string Role
    {

```

```

        get { return _role; }
        set { _role = value.ToUpper(); }
    }
}

public class Program
{
    public static void Main(string[] args)
    {
        UserProfile profile = new UserProfile();
        profile.Role = "admin";
        Console.Write(profile.Role);
    }
}

```

- (a) admin
 - (b) ADMIN
 - (c) null
 - (d) Compile-time error
33. If a property is defined as `public decimal Balance { get; protected set; }`, which of the following best describes where its value can be modified?
- (a) Anywhere in the application.
 - (b) Only within the exact class where it is defined.
 - (c) Only within the defining class and any classes that inherit from it.
 - (d) Only by other classes in the same namespace.
34. Where can you legally assign a value to an auto-implemented property defined with only a getter, such as `public string Title { get; }`?
- (a) Only within the class's constructor or inline at the point of declaration.
 - (b) In any method within the defining class.
 - (c) Anywhere in the program using an object instance.
 - (d) The value cannot be assigned and will always remain null or default.
35. When you define an auto-implemented property like `public string Name { get; set; }`, where does C# actually store the assigned data in memory?
- (a) Directly inside the 'value' keyword.
 - (b) In a hidden, compiler-generated backing field.
 - (c) In the property's get accessor.
 - (d) In the system registry.

36. Which property determines whether a CheckBox control named `newsletterCheckBox` is currently selected by the user?
- (a) `Selected`
 - (b) `Checked`
 - (c) `IsActive`
 - (d) `Value`
37. To temporarily disable a Button named `submitButton` so the user cannot click it, which property should you set to false?
- (a) `Visible`
 - (b) `Clickable`
 - (c) `Enabled`
 - (d) `Active`
38. Which event is most commonly handled to execute code when a user presses a Button control?
- (a) `MouseHover`
 - (b) `ActionPerformed`
 - (c) `Click`
 - (d) `Submit`
39. Which property would you use to retrieve the object that a user has currently highlighted in a ListBox named `menuListBox`?
- (a) `menuListBox.CurrentItem`
 - (b) `menuListBox.SelectedItem`
 - (c) `menuListBox.Items.Selected`
 - (d) `menuListBox.ActiveItem`
40. Which method call correctly uses a Brush named `myBrush` to paint a solid rectangle starting at coordinates (0, 0) with a width of 100 and a height of 50?
- (a) `g.DrawRectangle(myBrush, 0, 0, 100, 50);`
 - (b) `g.FillRectangle(myBrush, 0, 0, 100, 50);`
 - (c) `g.FillRectangle(0, 0, 100, 50, myBrush);`
 - (d) `g.PaintSolid(myBrush, 0, 0, 100, 50);`