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RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES
B.Sc. (General) Degree
First Year Semester II Examination – February/ March 2013.

COM 1304 - VISUAL PROGRAMING

Answer all questions.   Time: Two hours

Question 1 is a multiple choice question and provide the answers on the paper itself.

1. Choose the most appropriate answer and circle the number corresponding to your answer.

    a. What does IDE stand for?

        I.   Integrated Development Environment.

        II.   Integrated Design Environment.

        III. Interior Development Environment.

        IV. Interior Design Environment.

        V.   None of the above.   [2 Marks]

    b. Which of the following statement is correct about Exception?

        I.   It occurs during compilation.

        II.   It occurs during linking.

        III. It occurs at run-time.

        IV. It occurs during Just-In-Time compilation.

        V.   It occurs during loading of the program.   [2 Marks]

    c. Which of the following statement(s) are **NOT true** about .NET framework?

        A. It provides a consistent object-oriented programming environment whether object code is stored and executed locally, executed locally but Internet-distributed, or executed remotely.

        B. It provides a code-execution environment that minimizes software deployment and versioning conflicts.

        C. It provides a code-execution environment that promotes safe execution of code, including code created by an unknown or semi-trusted third party.

D. It provides different programming models for Windows-based applications and Web-based applications.

E. It provides an event driven programming model for building Windows Device Drivers.

    I.   A and B.

    II.   B and D.

    III.   D and E.

    IV.   A, B and D.

    V.   B only.   **[2 Marks]**

d. Which of the following statements are correct about exception handling in C#.NET?

A. If an exception occurs then the program terminates suddenly without getting any **chance** to recover from the exception.

B. No matter whether an exception occurs or not, the statements in the **finally** clause (if present) will get executed.

C. A program can contain multiple **finally** clauses.

D. A **finally** clause is written outside the **try** block.

E. **Finally** clause is used to perform clean up operations like closing the network/database connections.

    I.   A only.

    II.   B only.

    III.   B and E only.

    IV.   C and D only.

    V.   None of the above.   **[2 Marks]**

e. What does the following C#.NET code snippet will output?

```
int i = 0, j = 0;

label:
    i++;
    j+=i;
if (i < 10)
{
    Console.Write(i +" ");
    goto label;
}
```

I.   Prints 1 to 9.

II. Prints 0 to 8.

III. Prints 2 to 8.

IV. Prints 2 to 9.

V.   Compile error at label1:   [2 Marks]

f.   What will be the output of the C#.NET code snippet given below?

```
int val;
for (val = -5; val <= 5; val++)
{
    switch (val)
    {
        case 0:
            Console.Write ("India");
            break;
    }
    if (val > 0)
        Console.Write ("B");
    else if (val < 0)
        Console.Write ("X");
}
```

I.   XXXXXIndia.

II. IndiaBBBBB.

III. XXXXXIndiaBBBBB.

IV. BBBBBIndiaXXXXX.

V.   Zero.   [2 Marks]

2.

a. Write short notes on the followings:

    i. .NET Framework.

    ii. Common Language Runtime (CLR).

    iii. Just in Time Compiler (JIT).   [12 Marks]

b. What portable environment must be installed on a client's machine to run a .NET application?   [2 Marks]

c. What do you mean by the platform independence?   [3 Marks]

d. **".Net is used for Application programming and not for System programming"** Do you agree with this? Explain. [5 Marks]

3.

a. Define the terms **"class"** and **"object"** in object oriented programming. [4 Marks]

b. Write a C#.NET code to create a class named 'Circle' to represent a circle. Create an object from circle class.

The **'Circle'** class should contain:

o A data field named "radius" that specifies the radius of circle. (default value is 1.0)

o A default constructor that create default circle. (default circle's radius value is 1.0)

o A constructor that creates a circle with specified radius value.

o A method named area() which returns the area of the circle. [8 Marks]

c. Define method overloading using a suitable example. [6 Marks]

d. Write the output of the following C# code.

```
class ParmTest
{
public static void GetCoordinates(ref int x, int y)
    {
    x = x + y;
    y = y + x;
    }
static void Main(string[] args)
    {
    int x = 20;
    int y = 40;
    ParmTest.GetCoordinates(ref x, y);
    Console.WriteLine("x="+x+" y="+y);
    Console.ReadLine();
    }
}
```
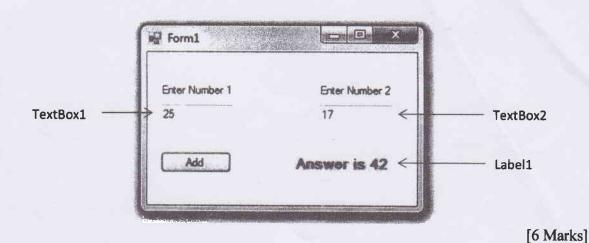[4 Marks]

4.

a. Compare and contrast Implicit and Explicit Conversion. [4 Marks]

b. Write the code for the click event of Add button in the following form.

When click on the Add button, Label1 should display the summation of TextBox1 and TextBox2.

[6 Marks]

c. A class of 10 students took an exam. Each student received a letter-grade of A, B, C, D or F. Write a C# program to input the letter-grades and summarize the results by using a switch, to count the number of students for each grade earned .

Ex:	Grade A	2 students
	Grade B	2 student
	Grade C	5 students
	Grade D	1 student
	Grade F	0 students

[8 Marks]

d. Write code segments for passing arrays to methods in C#.NET with an appropriate example. [4 Marks]

5.

a. Write a C# application to store user input in a text file. Write any assumptions you made.
[6 Marks]

b. Discuss the importance of Exception Handling in programming. [4 Marks]

c. Define "try catch finally block" using appropriate example. [6 Marks]

d. Write short notes on the followings:

    i. Service-based Database.

    ii. SqlConnection Class.

    iii. SqlDataReader Class. [6 Marks]