

NATIONAL INSTITUTE OF BUSINESS MANAGEMENT
Diploma in Software Engineering

GUI Application Development – Sample Paper

Question 01:

- i. Explain the .NET Framework Architecture.
- ii. Explain what is CLR and its importance.
- iii. Write a C# console application program to input series of numbers which ends with -9 and to output sum and the maximum number of the series.
- iv. Explain “**Enumerations**” in C# with an example.
- v. In C#, a structure is a value type data type. What is the different between Structure and Class?

(25 Marks)

Question 02:

- i. Explain briefly what is meant by a ‘delegate’ and its use in software projects. Provide single line code snippets to create and assign to a delegate.
- ii. Provide examples for the following keywords in C#.
 - a. Overloading
 - b. Overriding
 - c. Inheritance
 - d. Encapsulation
- iii. Create a class called **Rectangle** with two private variables **width** and **height**. You need to include the following in the class declaration.
 - a. Parameterized Constructor to create a Rectangle object with the value 20 for the width and 14 for the height.
 - b. Method to calculate and return the **Area** of the Rectangle.
 - c. Method to display **Area** of the Rectangle.
 - d. Use another class called **ExRectangle** with main method to execute the above class.

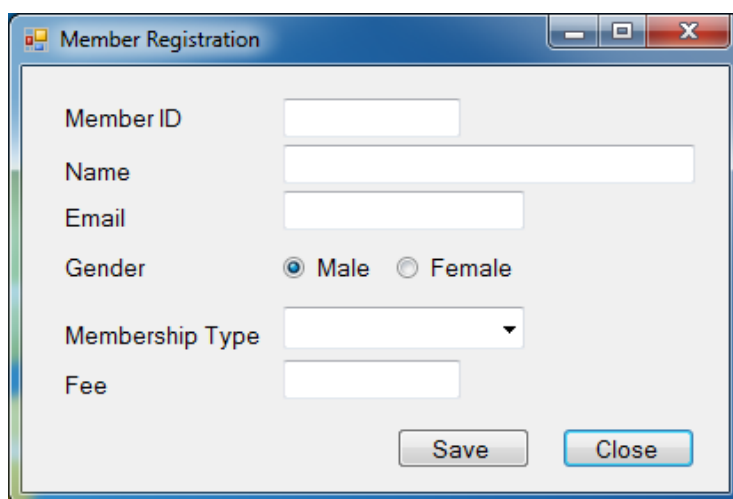
Hint: The **Area** of a Rectangle is **W*H**, Where **W** is the **width** and **H** is **height** of the Rectangle.

- iv. Exception handling plays major role in any programming language. Explain this concept with C# code example.

(25 Marks)

Question 03:

- i. Tool tips are the small pop-up boxes which explain the purpose of a control. Write C# code to bind **tooltip1** with **txtStName** text control to display “**Enter student number here**”.
- ii. Explain the ADO.Net Architecture.
- iii. Assume that the following form has designed for **Member Registration** in a Library system. You can use your own control names to refer text boxes, buttons, etc. **Membership Type Combo Box** vales are **Student, Staff and Life Time**.



Write necessary C# statements for the given events to perform following functionalities.

- a. **On click Close Button:** Close the Form
- b. **On SelectedIndexChanged** set Member Fee and assign to Fee field.

Membership Type	Fee
Student	Rs. 500.00
Staff	Rs. 750.00
Life Time	Rs. 2500.00

- c. **On click Save Button:** Save member details by inserting a new record to the following existing **tblMember** table. Define connection string to connect to the MS SQL database “LibraryDB” by using the following information.
 1. Data Source: My-PC \ SQLSERVER
 2. Initial Catalog =“LibraryDB”
 3. Username = “user”
 4. Password = “123”

MID	Name	Email	Gender	Type	Fee
M001	Ann Perera	ann@gmail.com	Female	Student	500.00

(25 Marks)

Question 04:

- i. Ex In an electricity bill calculation system, it is capturing Customer ID, Name, Telephone, Previous Meter Reading, Current Meter Reading, Connection Type (Industrial, House, Education). It is to calculate and display Unit consumption, Tax amount and Electricity bill using following criteria.

No of Units	Unit Cost (Rs) per Unit		
	Industrial	House	Education
Units < 60	200	20	30
Units <100	500	40	50
Units >= 100	600	100	150

Unit Consumption = Current Meter Reading - Previous Meter Reading

Cost of Usage = Unit Consumption * Unit Cost

Tax amount is 10% of the cost of usage.

Electricity Bill = Cost of Usage + Tax Amount

- a) Design an interface to capture the necessary information and to display results. (You can assume control names and its important properties)
- b) Write code behind for the relevant events to calculate according to the business logic given.

(25 Marks)