



# SLIATE

SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION

(Established in the Ministry of Higher Education, vide In Act No. 29 of 1995)

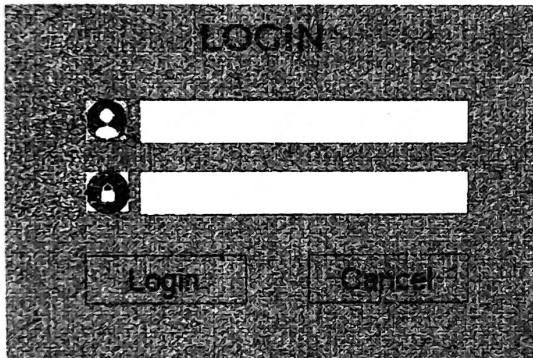
**Higher National Diploma in Information Technology**  
**First Year, First Semester Examination – 2022**  
**HNDIT1012 – Visual Application Programming**

Instructions for Candidates:  
Answer five questions only.  
All questions carry equal marks.

No. of questions : 06  
No. of pages : 04  
Time : Three(03) hours

**Question 01**

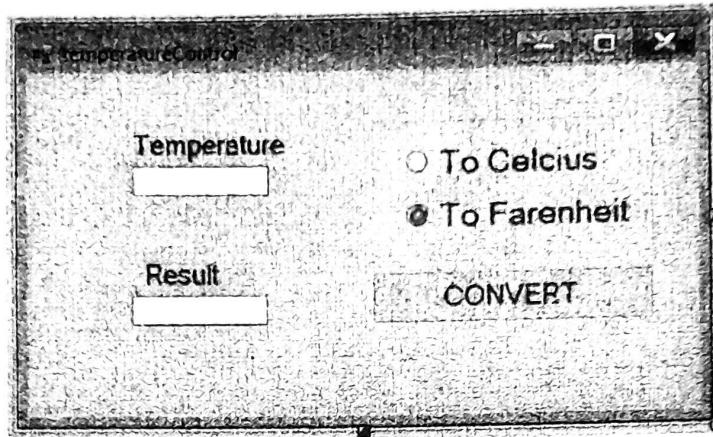
1. Define the following terms (4 Marks)
  - a. Programming Language
  - b. Computer Programming
2. Following is a sample login form that is used for a simple Windows Form Application.



- a. Name the components required to create the above GUI. (04 Marks)
- b. Suggest suitable names for each component you have used (04 Marks)
- c. Write a C# program to implement the given functionalities when user clicks Login button.
  - i. Display the form named "frmTemperatureConverter" when user enters a valid user name and a password. (assume the valid username is: Admin and password is: admin@1234). (04 Marks)
  - ii. When the username or password is incorrect, displays an error message stating "Invalid username or password!". (02 Marks)
- d. Write the code to Exit the application when user clicks Cancel button. (02 Marks)

## Question 02

1. Briefly explain the following by giving suitable examples for each. (6 Marks)
- Sequential structures
  - Selection structures (Conditional)
  - Repetition/Iterative structures (Loop)
2. Following is a Graphical User Interface (GUI) that can convert a given temperature to Celsius or Fahrenheit.



- What is the purpose of using GroupBox control in the above GUI (02 Marks)
- Name property is an important property used to identify a GUI control/component. Give another property of each of the following controls that can be used for the above application (04 Marks)
  - Form
  - TextBox
  - RadioButton
  - Button
- Write C# code to convert a given temperature to a required unit. (Hint:  $C = (F - 32) * 5 / 9$ ; Where F = Fahrenheit and C = Celsius) (08 Marks)

## Question 03

- Briefly explain about "Events" in C# programming giving at least two examples. (04 Marks)
- Write methods that performs the given tasks.
  - Display a message indicating which mouse button (left /right) is clicked on a form (04 Marks)
  - Sort set of values in a given string array when user clicks a button (04 Marks)
- Write sample programs to perform the following tasks
  - Check two given integers, and return true if one of them is 1000 (04 Marks)
  - Calculate the sum of values in a given array of integers. (04 Marks)

#### Question 04

1. Briefly explain about Verbatim String in C# with appropriate examples (04 Marks)
2. Briefly explain the importance of using comments in programming giving examples for different types of comments in C# (04 Marks)
3. Give four (04) best practices of naming a variable (04 Marks)
4. Give output of the following code segments (08 Marks)

i.

```
int x=0;
bool b = x>5;
if(!b)
{
    Console.WriteLine(b);
}
```

iii.

```
int i = 10;
while (i > 5)
{
    --i;
    Console.WriteLine(i);
}
```

ii.

```
Char[] letters = { 'A', 'B', 'C' };
for(int i = 1; i < letters.Length; i++)
{
    Console.Write(letters[i] + "\t");
}
```

iv.

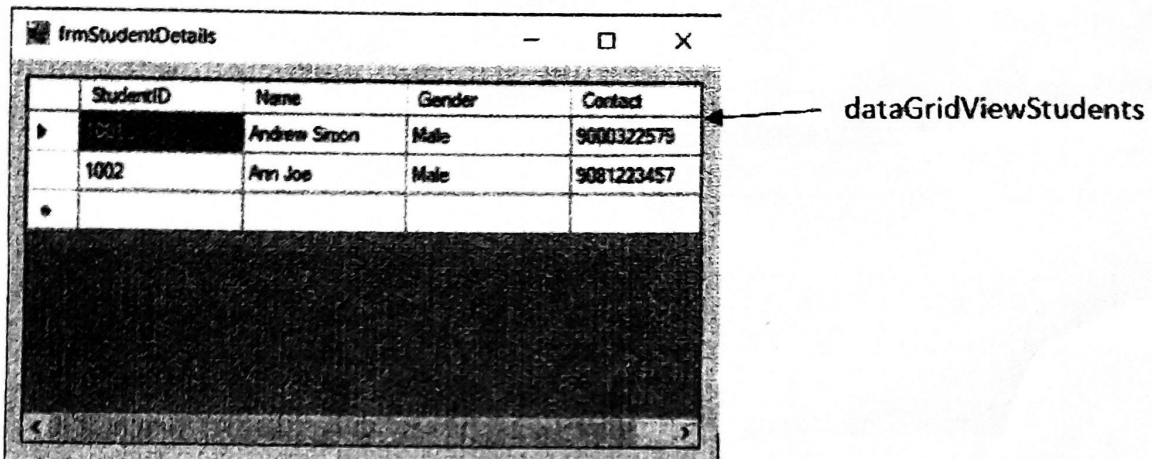
```
int i = 1;
do
{
    Console.WriteLine(++i);
} while (i < 4);
```

#### Question 05

1. Briefly explain about the purpose of Language translator software, giving at least two examples. (04 Marks)
2. Give four(04) methods of a Graphics object that can be used for drawing shapes and lines. (04 Marks)
3. Briefly explain the term "DataSet" in C#. (04 Marks)
4. Write a C# program to draw two blue and red color lines in parallel with a thickness of 2. (08 Marks)

## Question 06

- State the purpose of following properties of OpenFileDialog. (04 Marks)
  - FileName
  - Filter
  - Initial Directory
  - FilterIndex
- What are the four (04) file reading and writing methods used in C# programming language? (04 Marks)
- Following is a sample program outline for creating the given data table. Fill in the blanks with appropriate code segments (12 Marks)



```
private void frmStudentDetails_Load(object sender, EventArgs e)
{
    // creating DataTable
    .....(a)..... StudentDetails = .....(b).....("StudentDetails");    ...2marks

    //to create the column and schema
    DataColumn stdID = new DataColumn("StudentID", .....(c).....); ...1mark
    StudentDetails.Columns.Add(stdID);
    DataColumn stdName = new DataColumn("Name", typeof(string));
    StudentDetails.Columns.Add(stdName);
    DataColumn stdGender = new DataColumn("Gender", .....(d).....);    ...1mark
    StudentDetails.Columns.Add(stdGender);
    DataColumn stdContact = new DataColumn("Contact", typeof(string));
    StudentDetails.Columns.Add(stdContact);

    //Add the Data
    .....(e).....; .....1marks
    .....(f).....; .....1marks

    //Create dataset
    .....(g)..... ; .....2marks

    //Adding DataTables into DataSet
    .....(h)..... ; .....2marks

    .....(i).....DataSource = .....(j)..... ; .....2marks
}
```