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 – 2021
HNDIT1012 – Visual Application Programming

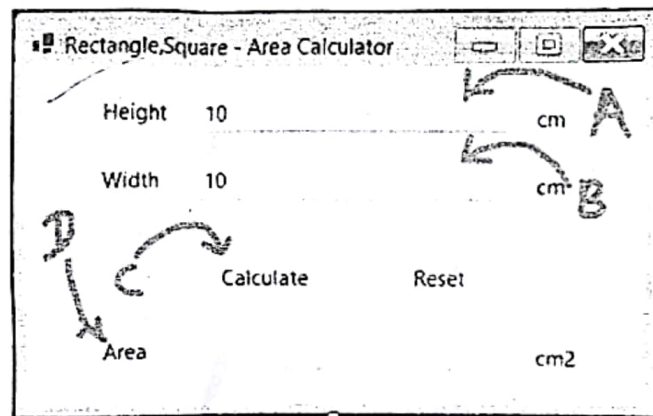|	
Instructions for Candidates:	No. of questions : 06
Answer five questions only.	No. of pages : 04
All questions carry equal marks.	Time :Three hours

Question 01

1. Consider the following Graphical User Interface(GUI) and identify 03 components used.
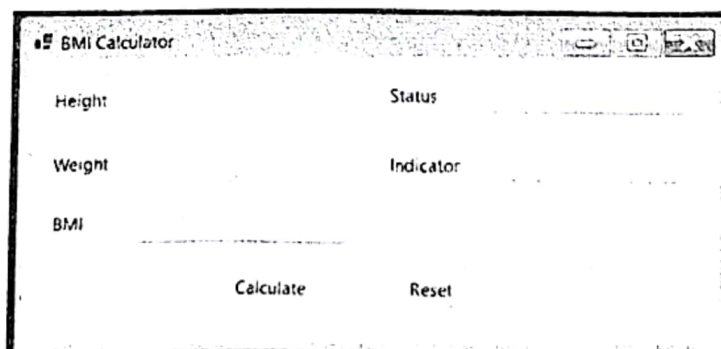
(03 Marks)

2. Suggest suitable names for the components named by A, B, C and D at above figure

(04 Marks)

3. Write the code to clear all fields when user clicks on clear button. (05 Marks)

4. Write the code to calculate the area for a given width and height of a rectangle. (08 Marks)

Question 02

1. Following application will calculate Body Mass Index (BMI) for a given value of height (in Meters) and weight (in Kilograms). (05 Marks)

$$BMI = \frac{Weight\ (kg)}{\{Height\ (m)\}^2}$$

Write the code to calculate and show the BMI value in the BMI Text Box when user clicks on Calculate button.

2. Write the code to Reset button where it can erase all the Text box values and its colors.

(05 Marks)

3. Application should display outputs for status and indicator fields based on the values for BMI as shown in the below table. Write the code for this function.

BMI Value	Status	Indicator background Color
Less than 18.5	Under Weight	Red
18.5 - 25	Normal	Blue
25 - 30	Obesity Class I	Orange
30 - 40	Obesity Class II	Pink
Above 40	Obesity Class III	Brown

Please consider the names of status and indicator fields as **txtStatus** and **txtIndicator** for you answer.

(10 Marks)

Question 03

1. Define the term "Computer Program". (03 Marks)
2. State two examples for Language translator softwares (02 Marks)
3. What is the purpose of Verbatim String in C# (02 Marks)
4. Write the outputs of the following codes (06 Marks)

a.
```
for (int i = 1; i <= 12; i=i+2)
{
    if (i == 8)
    {
        break;
    }
    Console.WriteLine(i);
}
```
\ 4

b.
```
int n = 0;
while (n < 5)
{
    n++;
    Console.WriteLine(n.ToString());
}
```
1 , 2, 3, 4

c.
```
int counter = 1;
do
{
    Console.WriteLine($"Hello World!"+counter);
    counter++;
} while (counter <1);
```

5. Consider the following expressions and write their outputs (07 Marks)

a. `Console.WriteLine( (2.0 * 3.0) / 4);`

b. `Console.WriteLine((2>3) && (4>5));`

c.
```
int num = 1;
Console.WriteLine(num);
Console.WriteLine(++num);
Console.WriteLine(num++);
Console.WriteLine(num);
```
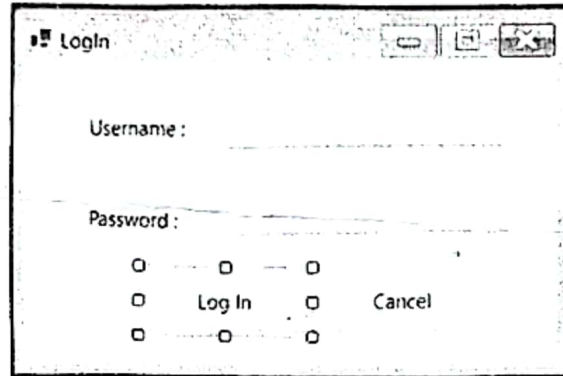
Question 04

1. Briefly explain the term .Net Framework (03 Marks)
2. Aravinda wants to select names for a variables for his application. State two best practices he can follow when he naming a variable? (04 Marks)
3. State two types of comments in C# and briefly explain them. (05 Marks)
4. Consider the below given GUI. (08 Marks)

Write the code for the Login button to permit access to a user with the username "admin" and the password "123" as login information. If the user provides the correct login information the program will show a message box "Your Permitted - Valid User" otherwise program will show a message box "Error in User Name or Error Password".

Question 05

1. Define the term "Event" in a C# application (02 Marks)
2. State Four (04) user events can be used in a C# Application (04 Marks)
3. Write the output of the following commands (04 Marks)

a.
```
String [] cars = { "Volvo", "BMW", "Toyota", "Ford", "Mazda", "Bugatti"
};

for(int a = 0; a < cars.Length; a++)
{
    Console.Write(cars[a]+"\t");
}
```

b.
```
cars[0] = "Nissan";

for (int a = 0; a < cars.Length; a++)
{
    Console.Write(cars[a] + "\t");
}
```
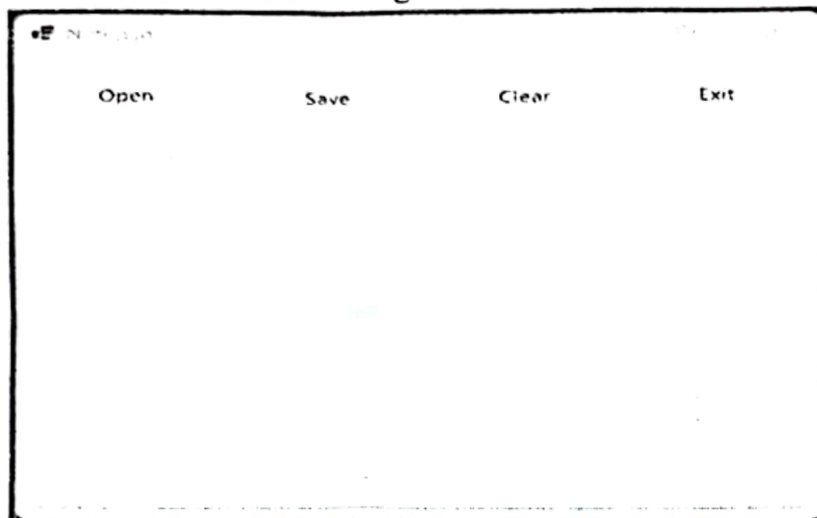
4. Briefly explain the purpose of the below code using a suitable drawing. (05 Marks)
```
public void DrawLineInt(PaintEventArgs e)
{
    Pen blackPen = new Pen(Color.Black, 3);
    int x1 = 100;
    int y1 = 100;
    int x2 = 500;
    int y2 = 100;
    e.Graphics.DrawLine(blackPen, x1, y1, x2, y2);
}
```

5. Sunil is a Trainee software developer. He is working on a C# project. He is continuously receiving syntax errors. Write Three advices or best practices which can be used by Sunil to reduce project errors. (05 Marks)

Question 06

Consider the following GUI for a notepad application which can read and write a text file specified by a user. When user click on open button and save button the program will show a File dialog box and read or save a file with a given file name.

Open	Save	Clear	Exit

1. Write the code to clear the text box in the above application. Assume the text box name is txtMain. (02 Marks)
2. Write the code segment to exit the form when user click on the Exit button. (02 Marks)
3. State the purpose of FileDialog class? (02 Marks)
4. Name four file writing and reading methods names used in C# language. (04 Marks)
5. Following code will open a file with a given location and display the content in the text box. Fill in the blanks with the suitable codes. (10 Marks)

```
private void btnOpen_ ……(1)……..(object sender, EventArgs e)
{
    OpenFileDialog ……(2)…… = new ……(3)…… ();
    fileDialog. ……(4)…… = "txt files (*.txt)|*.txt|All files (*.*)|*.*";
    ……(5)…….FilterIndex = 0;
    fileDialog.InitialDirectory = @"E:\asp c#"; // give your default directory


    // Reading a text file line by line

    if (fileDialog.ShowDialog() == DialogResult. ……(6)…… )
    {
        txtMain.Text = fileDialog.FileName;
        string[] readBuffer = ……(7)…….IO.File.ReadAllLines(fileDialog.FileName);
        for (int i = 0; i < ……(8)…….Length; ……(9)…… )
            txtMain. ……(10)…… = readBuffer[i] + "\n";

    }
}
```