



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
Second Year, First Semester Examination – 2019
HNDIT2311/IT3101- Rapid Application Development

Instructions for Candidate:
Answer only 5 Questions.
Each Question carries 20 Marks.

No. of questions : 06 20
No. of pages : 06
Time : 03 hours

1)

- a) Differentiate Rapid Application Development model from Waterfall model. [Marks 04]
- b) "Time boxing is one feature in RAD model"
Illustrate the above statement. [Marks 03]
- c) State four-parts of strategy in Rapid Application Development model. [Marks 04]
- d) What is meant by classic mistakes and how do you prevent the mistakes related to people? [Marks 04]
- e) Describe Integrated Development Environment and three characteristics of it. [Marks 05]

2)

- a) Explain the scope of the following variables using suitable example. [Marks 04]
- i. Local variable
ii. Global variable
- b) Give four (4) logical operators in their precedence order (highest to lowest). [Marks 04]
- c) Write a syntax for *if else* control statement. [Marks 03]
- d) Compare *do while* loop and *do until* loop. [Marks 03]
- e) Write output of the following code segments. [Marks 06]

i. For i = 6 To 13 Step 3
Console.writeline(i & " " & i * i)
Next
6 6x6 = 36
7 49
8 64

ii. Dim n As Integer = 10

Do

Console.WriteLine (n + 5)

n = n - 2

Loop While (n > 1)

8+5 13+5 218
15 16
21
19

iii. Dim a As Short = 5

Do

Console.WriteLine (a)

a += a

Loop Until (a = 15)

42+9
515
10

5 10
10

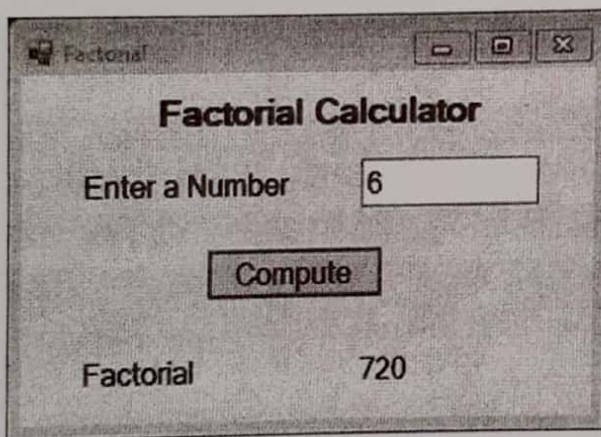
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3)

a) Consider the following interface which is used to calculate the factorial value of given number. When you click on the "compute" button it will calculate the factorial value using by Fact(number) function.

- Write the code under "compute" button click
- Write the coding for fact(number)

[Marks 02+06]



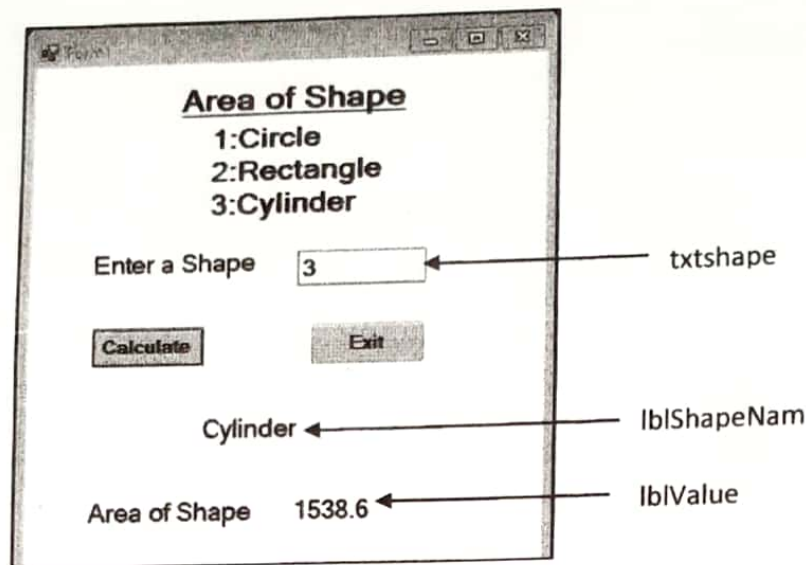
b) An application is created using VB.NET for identifying the students who passed the subject getting greater than 50 marks. Write a code for it.

[Marks 08]

- Store following marks of the students in an array.
Marks → 56, 78, 45, 67, 80, 67
- Count the number of students who passed the subject.
- Calculate the total marks of who passed the subject.

c) An application is designed to calculate area of shape as follows. Fill in the blanks (a to h) of the following VB.NET code segment considering name of tools.

[Marks 04]



Private Sub Button1_Click(sender As Object, e As EventArgs) Handles
btnCal.Click

Dim radius, width, length, height As Double

Const pi As Double = 3.14

Select Case ((a) Circle) txtshape.Text

Case 1

radius = InputBox("Enter a Radius of Circle")

lblShapeName.Text = "Circle"

lblValue.Text = pi * (b) radius ^ 2

Case 2

length = InputBox("Enter a Length of Rectangle")

(c) width = InputBox("Enter a Width of Rectangle")

lblShapeName.Text = (d) "rectangle"

(e) lblValue.Text = length * width

Case 3

radius = InputBox("Enter a Radius of Cylinder")

height = (f) Input box ("Enter a Height of Cylinder")

lblShapeName.Text = "Cylinder"

lblValue.Text = pi * radius ^ 2 * (g) height

(h) Default case

MsgBox("Invalid option")

End Select

End sub

4)

a) An application is designed in VB.NET to calculate pay sheet of a company.

Category	Control	Property	Value
Label	lblName	Name	lblName
		Text	Employee Name
	lblEmpNo	Name	lblEmpNo
		Text	Employee No
	lblBsal	Name	lblBsal
		Text	Basic Salary
	lblDesig	Name	lblDesig
		Text	Designation
Text box	lblGen	Name	lblGen
		Text	Gender
	lblDate	Name	lblDate
		Text	Date of Appointment
	txtName	Name	txtName
		Text	A.C Silva
Text box	txtEmpNo	Name	txtEmpNo
		Text	E303
Text box	txtBsal	Name	txtBsal
		Text	45000
DateTimePicker1	dtpDate	Name	dtpDate
Radio Button	radMale	Name	radMale
		Text	Male
	radFemale	Name	radFemale
		Text	Female
Combo Box	cmbDesig	Name	cmbDesig
		Items	Lecturer, Director Accountant
Textbox	txtDetails	Name	txtDetails
		Text	
Button	btnNetpay	Name	btnNetpay
		Text	Net Pay
	btnReset	Name	btnReset
		Text	Reset
	btnExit	Name	btnExit
		Text	Exit

Write VB.NET code segment to do the followings as you click "Net Pay" button. Use the appropriate property name from the above table.

- i. To calculate **Allowance** based on the conditions given below.

[Marks 03]

Basic Salary	Allowance
Basic Salary < 40000	15 % of Basic Salary
Basic Salary >= 40000	20 % of Basic Salary

- ii. To calculate **deduction** of salary using the following formula.

$$\text{Deduction} = (\text{Basic Salary} + \text{allowance}) * 10\%$$

[Marks 01]

- iii. To calculate **Net Pay** of the staff using the following equation.

$$\text{NetPay} = (\text{Basic Salary} + \text{allowance}) - \text{Deduction}$$

[Marks 01]

- iv. To clear all textboxes and list box when pressing "Reset" Button.

[Marks 02]

- v. Give the code for "Exit" button

[Marks 01]

- vi. Write the suitable VB code to add the following details in the textbox (txtDetail) as shown in the above dialog box

[Marks 08]

- b) Provide the output of the following code.

[Marks 04]

```
Private Sub Button1_Click(sender As Object, e As EventArgs) Handles
Button1.Click
    Dim price, qty As Integer
    price = 150
    qty = 20
    cal(price, qty) 150, 20
    buy(price, qty) 150, 20
End Sub
```

```
Public Sub cal(ByRef a As Integer, ByRef b As Integer)
    a = 100
    Dim amount As Integer = a * b 100 * 20
    MsgBox(amount) 2000
End Sub
```

```
Public Sub buy(ByVal a As Integer, ByVal b As Integer)
    Dim amount As Integer = a * b
    MsgBox(amount)
End Sub
```

$$150 \times 20 = 3000$$

5)

- a) Briefly explain namespace. [Marks 02]
- b) Object oriented approach is considered to be a good approach for developing program. State reason for it. [Marks 03]
- c) Compare overloading and overriding methods. [Marks 03]
- d) Create a code segment for the following using object oriented concept. [Marks 12]
 - i. Create a class named "Book".
 - ii. Declare three variables for name, price and quantity of book.
 - iii. Initialize these variables using parameterized constructor.
 - iv. Generate function named "calAmount ()" which returns product of price and quantity.
 - v. Create object named "book1".
 - vi. Display amount in a message box by calling the function.

6) The following interface is created to store students' details in a database.

Name	RegNo	Course	Gender
A.R Ravi	DA15	HNDA	Male
A.C Perera	IT30	HNDIT	Male

- a) Give suitable name for user input control tools in the above interface according to the .NET convention. [Marks 02]
- b) Provide a code segment for creating database connection to the above form with MySql or Sql server or Access database. Hint: server=localhost, user id=root, password=Abc123, database=student table=details [Marks 02]
- c) Write a code segment to insert a record of student into the database. [Marks 03]
- d) Create a code to update course of student whose registration number is "DA15". [Marks 03]
- e) Write a code segment to search details of student with registration number "IT30". [Marks 03]
- f) Provide a code segment to view "details" table in a DataGridView. [Marks 03]
- g) Write a code segment to delete a record of a student whose registration number is "DA15". [Marks 02]
- h) Create a code segment to reset form by clicking "Clear" button. [Marks 02]