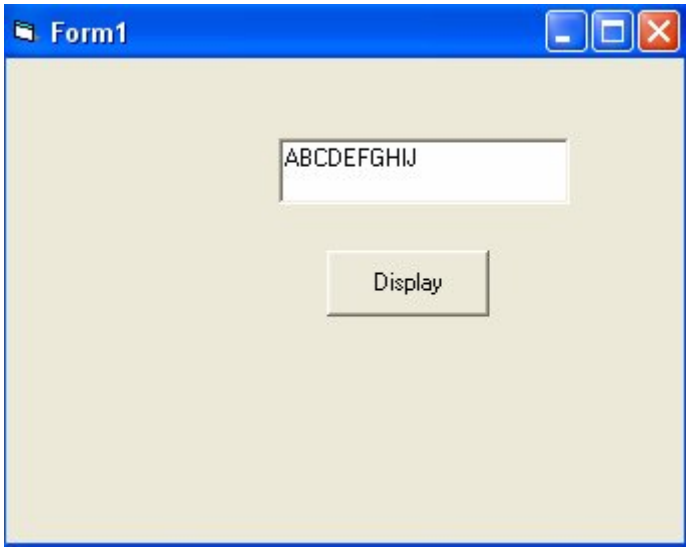
Q1) Write the Visual Basic code for the following operation in one statement:

1. Make the width of **Text1** equal the height of **Command1**.
2. Make the height of **Command1** equal half of **Form1** height.
3. Change the color of the text written in **Text1** to blue.
4. Paint the **Form1** by the same color of **Command1**.
5. Set font size of **Command1** same as font size of **Text1**.
6. Make text font of **Text1** same as font of **Command1**.
7. Disable the **Command1**.
8. Make **Text1** locked.
9. Make **Option2** selected.
10. Display caption of **Label1**. on **Text1**.
11. Display text font of **Text1** on **Label1**.
12. $y = \sqrt{\frac{\tan^{-1}x - x^2}{e^x}}$
13. Print the length of text wri en in Text1.
14. Display the ASCII of the character written the **Text1**. on **Lable1**.
15. Replace the **Left (Text1.Text, 4)** by **Mid ( )**.
16. Replace **Right (Text1.Text, 3)** by **Mid ( )** if length of **Text1** is 7.
17. $y = x^2 - 5 \quad if\ x \geq 0$
18. Jump to location Z if the $x \neq 5$
19. Exit **For-Next** statements if $y > 600$
20. $y = \begin{cases} x - 6 & if\ x > 5 \\ x^2 & if\ x \leq 5 \end{cases}$
21. $y = \begin{cases} x - 6 & if\ x > 5 \\ x^2 & if\ x < 5 \end{cases}$
22. $y = \begin{cases} x^2 & if\ x = 1 \\ x + 5 & if\ x = 2 \\ 60 & if\ x = 3 \end{cases}$
23. $y = \begin{cases} x^2 & if\ x < 1 \\ x + 5 & if\ x = 2 \\ 60 & if\ x > 3 \end{cases}$
24. $y = \bar{A}B \oplus (D + C)$
25. Display the length of one dimension array (A) on **Text1** if op on base is 1.
26. Display the length of one dimension array (A) on **Text1** if op on base is 0.
27. Display the text written in **Text1** on massage box.
28. Change **Shape1** to circle.
29. Write the statement for **Function sum(A, B)** that find the summation of A and B.
30. Write the statement for **Private Sub sum(D, A, B)** that find the summation of A and B.

Q2) Write the outputs of the following project:

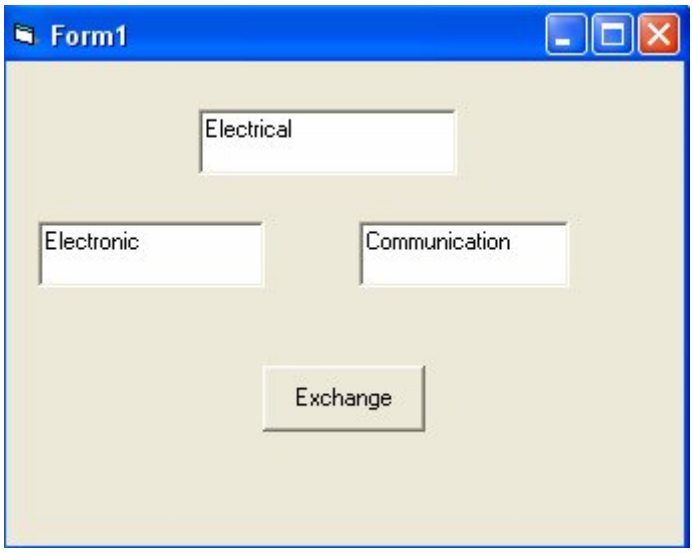



```
Option Base 1

Private Sub Command1_Click()
Dim a(10) As String
For i = 1 To 10
a(i) = Mid(Text1.Text, i, 1)
Next i
For i = 1 To 10
Print a(i);
Next i
Print
For i = 1 To 5
Print a(i)
Next i
For i = 10 To 1 Step -1
Print a(i);
Next i
End Sub

Private Sub Form_Load()
Text1.Text = "ABCDEFGHIJ"
Command1.Caption = "Display"
End Sub
```

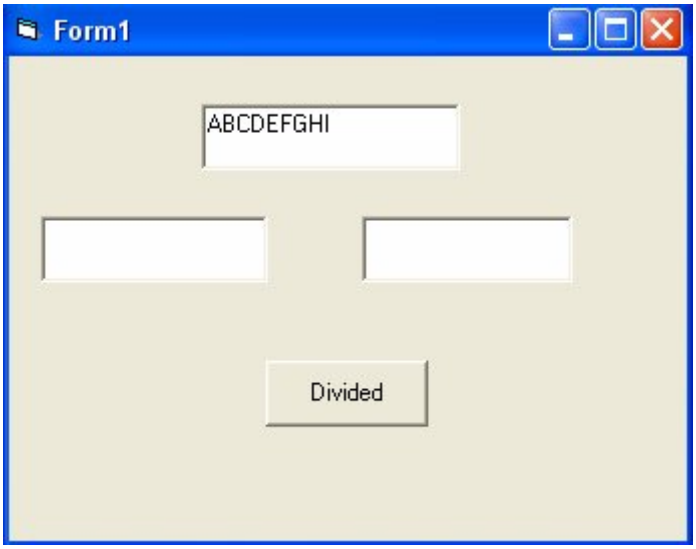
Q3) what is the contents of the all Texts in the following project after click the Exchange Command:




```
Private Sub Command1_Click()
x = Text1.Text
y = Text2.Text
Text1.Text = Text3.Text
Text2.Text = x
Text3.Text = y
End Sub

Private Sub Form_Load()
Text1.Text = "Electrical"
Text2.Text = "Electronic"
Text3.Text = "Communication"
Command1.Caption = "Exchange"
End Sub
```

Q4) what is the contents of the all Texts in the following project after click the Divided Command:




```
Private Sub Command1_Click()
n = Len(Text1.Text)
X1 = Fix(n / 2)
X2 = n - X1
Text2.Text = Left(Text1.Text, X1)
Text3.Text = Right(Text1.Text, X2)
End Sub

Private Sub Form_Load()
Text1.Text = "ABCDEFGHI"
Text2.Text = ""
Text3.Text = ""
Command1.Caption = "Divided"
End Sub
```

Q5) Write the outputs of the following project if the a = [1 5 -5 6 -2]:

```
Option Base 1

Private Sub Command1_Click()
Dim a(5) As Integer
For i = 1 To 5
a(i) = InputBox("input the elements of array")
Next i
x = a(1)
For i = 1 To 5
If x > a(i) Then x = a(i)
Next i
Print x
End Sub

Private Sub Form_Load()
Command1.Caption = "Find"
End Sub
```

Q6) design a project to calculate the values of (y, z) and print them

$$y = \begin{cases} x^2 & if \quad x \le 5 \\ x+2 & if \quad 7 < x < 9 \\ 100 & if \quad x = 10 \end{cases} \qquad z = \begin{cases} x^4 & if \quad x \le 5 \\ x-3 & if \quad x = 10 \end{cases}$$

Q7) design a project to calculate the value y and print it (use select case).

$$y = \begin{cases} x+5 & if \quad x = 1,2,3,4 \\ x^2 & if \quad 5 \le x \le 10 \\ 60 & if \quad x > 11 \end{cases}$$

Q8) design a project to calculate the value y and print it.

$$y = 1 - x + x \quad - x^3 + x^4 - x^5 \ldots\ldots\ldots\ldots x^n$$

Q9) design a project to calculate the value y and print it.

$$y = 1 + \frac{1}{x} + \frac{2}{x^2} + \frac{6}{x^2} + \frac{24}{x^4} + \ldots\ldots\ldots\ldots\ldots \frac{n!}{x^n}$$

Q10) design a project to calculate the value y and print it.

$$y = \sum_{i=5} \frac{i}{x^i} \qquad while \quad y \le 500$$

Q11) design form with three option boxes and two commands. Write code so that run time when the user:

- Select first option box, back color of form change to red.
- Select second option box, back color of form change to blue.
- Select third option box, back color of form change to green.
- Click on command1, the second option box is selected.
- Click on command2, the next op on box is selected.

Q12) write the visual basic code to put each character of the text written in **`Text1`** in one element of one dimensional array (a) and print array (a) as a column.

Q13) write the visual basic code to reverse the elements of one dimensional array (a) and print array (a) as a row.

Q14) write the visual basic code to find the largest element of one dimensional array (a) and print it.

Q15) write the visual basic code to sort the one dimensional array (a) in descending order and print it.

Q16) write the visual basic code to input the elements of two dimensional array (a) in row-row and print it.

Q17) write the visual basic code to print the main diagonal of two dimensional array (a(n,m)).

Q18) write the visual basic code to clear the upper triangular matrix of two dimensional array (a(n,n)) and print it.

Q19) write the visual basic code to create array b(m,n) which equal to replace the rows by columns elements of array a(n,m) and print it.

Q20) write the visual basic code to create array d(n,m) from the arrays a(n,m) and b(n,m) according to the following equation:

$$d = \sqrt{a^2 + b^2} \qquad for\ each\ element$$

Q21) repeat (q20) using **`Function`** statement.

Q22) repeat (q20) using **`Subroutine.`**

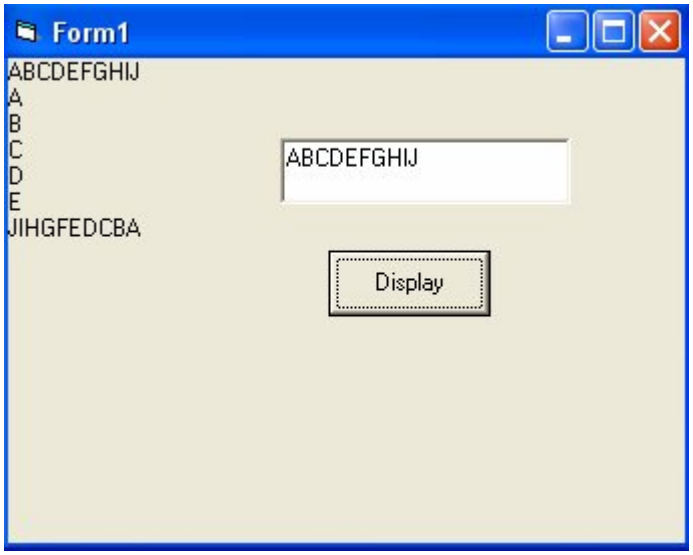
Q23) write the visual basic code to convert the number written in **`Text1`** to binary number and print it. (Note; the number is less than 16)

Q24) write the visual basic code to print the truth table state for 4-bit.

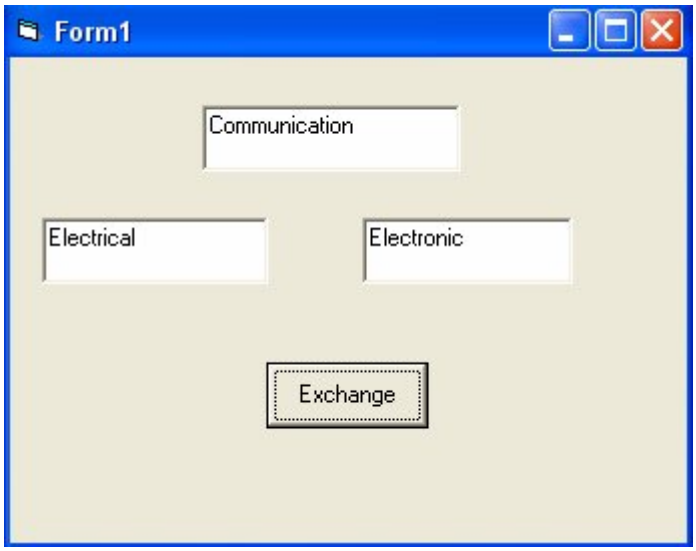
Q1)

```
1. Text1.Width = Command1.Height
2. Command1.Height = ScaleHeight / 2
3. Text1.ForeColor = vbBlue
4. Form1.BackColor = Command1.BackColor
5. Command1.FontSize = Text1.FontSize
6. Text1.FontName = Command1.Font
7. Command1.Enabled = False
8. Text1.Locked = True
9. Option2.Value = True
10.     Text1.Text = Label1.Caption
11.     Label1.Caption = Text1.FontName
12.     y = Sqr((Atn(x) - x ^ 2) / Exp(x))
13.     Print Len(Text1.Text)
14.     Label1.Caption = Asc(Text1.Text)
15.     Min(Text1.Text, 1, 4)
16.     Mid(Text1.Text, 5, 3)
17.     If x >= 0 Then y = x ^ 2 - 5
18.     If x <> 5 Then GoTo Z
19.     If y > 600 Then Exit For
20.     y = IIf(x > 5, x - 6, x ^ 2)
21.     y = Switch(x > 5, x - 6, x < 5, x ^ 2)
22.     y = Choose(x, x ^ 2, x - 5, 60)
23.     y = Switch(x > 1, x ^ 2, x = 2, x - 5, x > 3, 60)
24.     y = ((Not A) And B) Xor (D Or C)
25.     Text1.Text = UBound(A)
26.     Text1.Text = UBound(A) + 1
27.     MsgBox (Text1.Text)
28.     Shape1.Shape = 3
29.     sum = A + B
30.     D = A + B
```

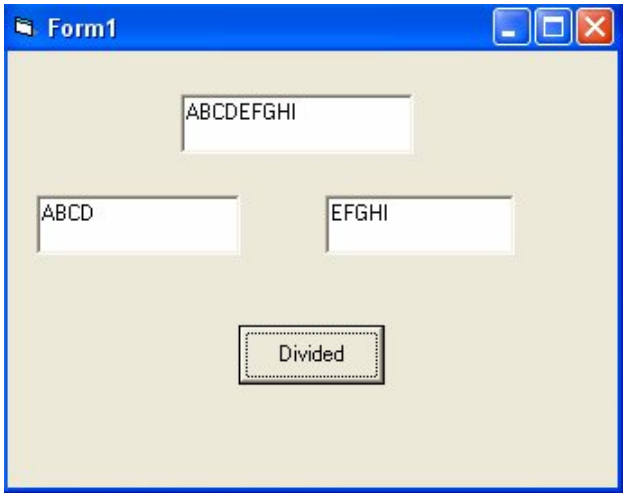
Q2)



Q3)


Form1
Communication
Electrical
Electronic
Exchange

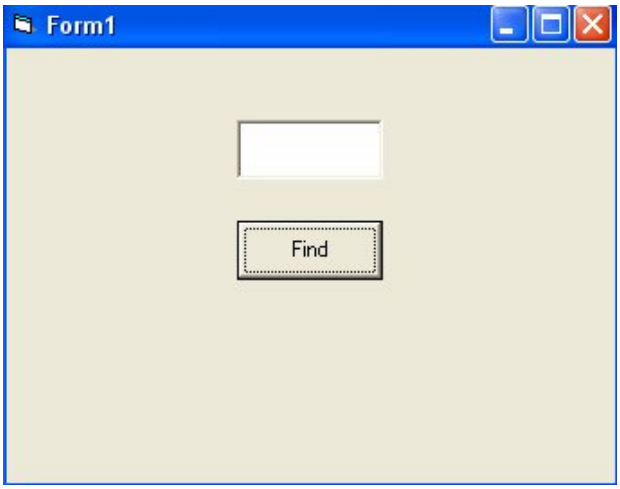
Q4)


Form1
ABCDEFGHI
ABCD
EFGHI
Divided

Q5)

Form1
-5
Find

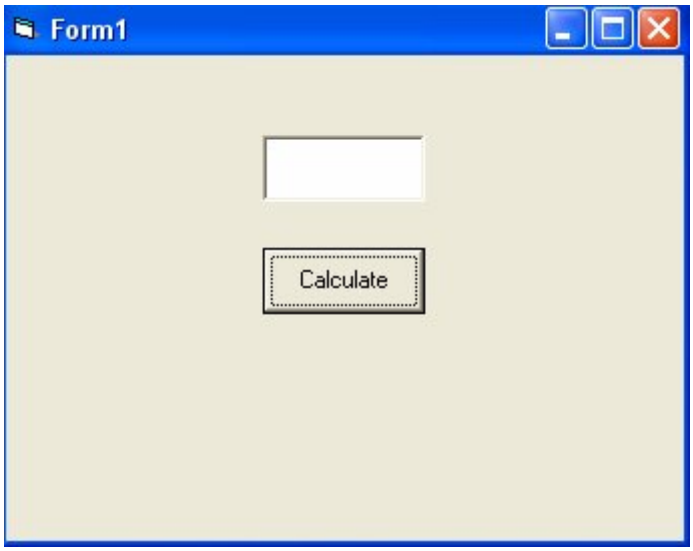
Q6)




```
Private Sub Command1_Click()
x = Val(Text1.Text)
If x <= 5 Then
y = x ^ 2
z = x ^ 4
ElseIf x > 7 And x < 9 Then
y = x + 2
ElseIf x = 10 Then
y = 100
z = x - 3
End If
Print "y="; y
Print "z="; z
End Sub

Private Sub Form_Load()
Text1.Text = ""
Command1.Caption = "Find"
End Sub
```

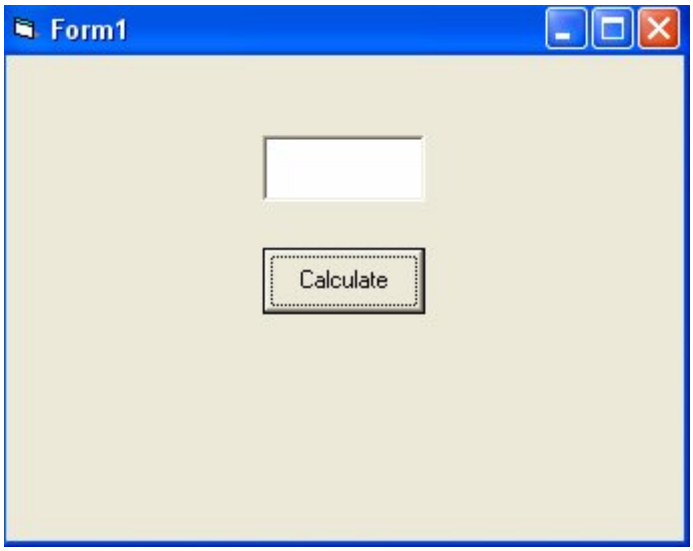
Q7)




```
Private Sub Command1_Click()
x = Val(Text1.Text)
Select Case x
Case 1, 2, 3, 4
y = x + 5
Case 5 To 10
y = x ^ 2
Case Is > 11
y = 60
End Select
Print "y="; y
End Sub

Private Sub Form_Load()
Text1.Text = ""
Command1.Caption = "Calculate"
End Sub
```

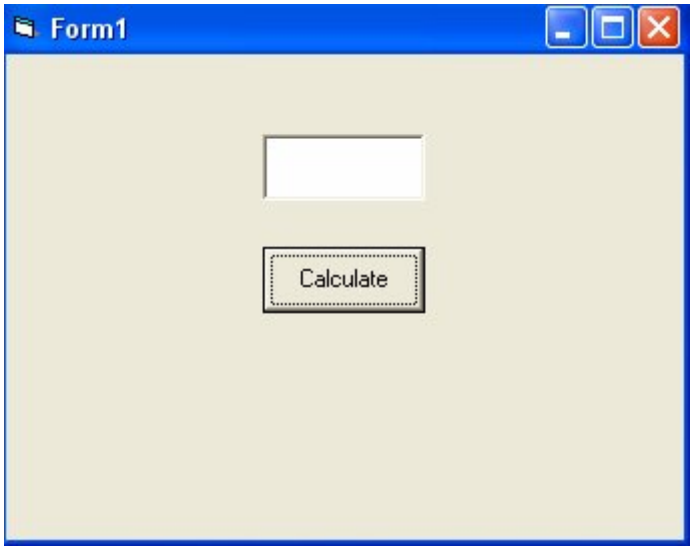
8)




```
Private Sub Command1_Click()
n = InputBox("input value of n")
x = Val(Text1.Text)
y = 0
For i = 1 To n
y = y + x ^ i * (-1) ^ i
Next i
Print "y="; y
End Sub

Private Sub Form_Load()
Text1.Text = ""
Command1.Caption = "Calculate"
End Sub
```

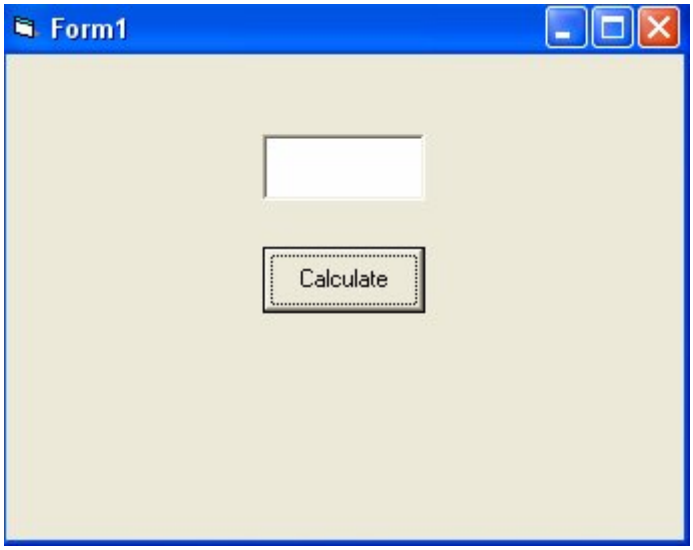
Q9)




```
Private Sub Command1_Click()
n = InputBox("input value of n")
x = Val(Text1.Text)
y = 0
For i = 1 To n
k = 1
If i = 0 Then GoTo z
For j = 1 To i
k = k * j
Next j
z: y = y + k / x ^ i
Next i
Print "y="; y
End Sub

Private Sub Form_Load()
Text1.Text = ""
Command1.Caption = "Calculate"
End Sub
```

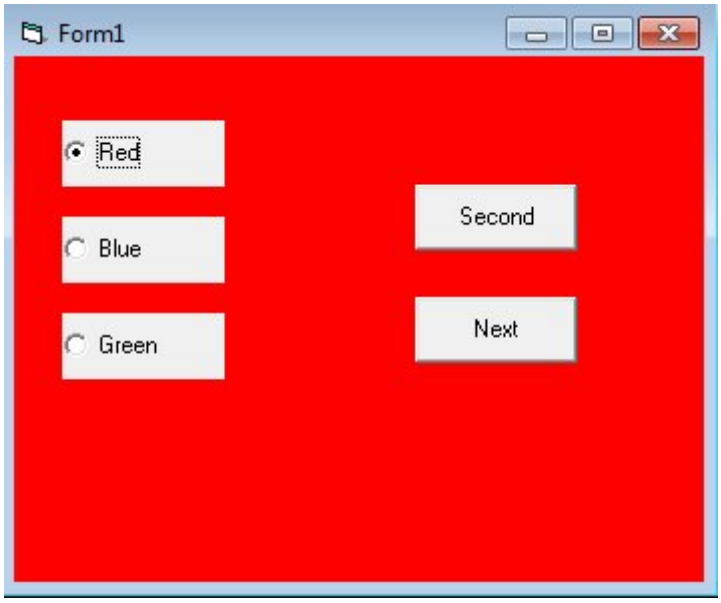
Q10)




```
Private Sub Command1_Click()
x = Val(Text1.Text)
y = 0
i = 4
Do While y <= 500
i = i + 1
y = y + i / x ^ i
Loop
Print "y="; y
End Sub

Private Sub Form_Load()
Text1.Text = ""
Command1.Caption = "Calculate"
End Sub
```

Q11)




```
Private Sub Command1_Click()
Option2.Value = True
End Sub

Private Sub Command2_Click()
If Option1.Value = True Then
Option1.Value = False
Option2.Value = True
ElseIf Option2.Value = True Then
Option2.Value = False
Option3.Value = True
ElseIf Option3.Value = True Then
Option3.Value = False
Option1.Value = True
End If
End Sub

Private Sub Form_Load()
Option1.Caption = "Red"
Option2.Caption = "Blue"
Option3.Caption = "Green"
Command1.Caption = "Second"
Command2.Caption = "Next"
End Sub

Private Sub Option1_Click()
```

```
Form1.BackColor = vbRed
End Sub

Private Sub Option2_Click()
Form1.BackColor = vbBlue
End Sub

Private Sub Option3_Click()
Form1.BackColor = vbGreen
End Sub
```

Q12)

```
Option Base 1
Private Sub Command1_Click()
Dim a() As String
n = Len(Text1.Text)
ReDim a(n) As String
For i = 1 To n
a(i) = Mid(Text1.Text, i, 1)
Next i
For i = 1 To n
Print a(i)
Next i
End Sub
```

Q13)

```
Option Base 1
Private Sub Command1_Click()
Dim a() As Integer
n = InputBox("input the length of array")
ReDim a(n) As Integer
For i = 1 To n
a(i) = InputBox("input the array element")
Next i
For i = 1 To n / 2
x = a(i)
a(i) = a(n + 1 - i)
a(n + 1 - i) = x
Next i
For i = 1 To n
```

```
Print a(i); " ";
Next i
End Sub
```

Q14)

```
Option Base 1
Private Sub Command1_Click()
Dim a() As Integer
n = InputBox("input the length of array")
ReDim a(n) As Integer
For i = 1 To n
a(i) = InputBox("input the array element")
Next i
Max = a(1)
For i = 1 To n
If Max < a(i) Then Max = a(i)
Next i
Print "Max="; Max
End Sub
```

Q15)

```
Option Base 1
Private Sub Command1_Click()
Dim a() As Integer
n = InputBox("input the length of array")
ReDim a(n) As Integer
For i = 1 To n
a(i) = InputBox("input the array element")
Next i
For i = 1 To n - 1
For j = i + 1 To n
If a(i) < a(j) Then
x = a(i)
a(i) = a(j)
a(j) = x
End If
Next j
Next i
For i = 1 To n
Print a(i); " ";
Next i
End Sub
```

Q16)

```
Option Base 1
Private Sub Command1_Click()
Dim a() As Integer
n = InputBox("input the number of row")
m = InputBox("input the number of column")
ReDim a(n, m) As Integer
For i = 1 To n
For j = 1 To m
a(i, j) = InputBox("input the array element in row")
Next j
Next i
For i = 1 To n
For j = 1 To m
Print a(i, j); " ";
Next j
Print
Next i
End Sub
```

Q17)

```
Option Base 1
Private Sub Command1_Click()
Dim a() As Integer
n = InputBox("input the number of row")
m = InputBox("input the number of column")
ReDim a(n, m) As Integer
For i = 1 To n
For j = 1 To m
a(i, j) = InputBox("input the array element in row")
Next j
Next i
For i = 1 To n
For j = 1 To m
If i = j Then Print a(i, j)
Next j
Next i
End Sub
```

Q18)

```
Option Base 1
Private Sub Command1_Click()
Dim a() As Integer
n = InputBox("input the number of row")
ReDim a(n, n) As Integer
For i = 1 To n
For j = 1 To n
a(i, j) = InputBox("input the array element in row")
Next j
Next i
For i = 1 To n
For j = 1 To n
If i < j Then a(i, j) = 0
Next j
Next i
For i = 1 To n
For j = 1 To n
Print a(i, j); " ";
Next j
Print
Next i
End Sub
```

Q19)

```
Option Base 1
Private Sub Command1_Click()
Dim a(), b() As Integer
n = InputBox("input the number of row")
m = InputBox("input the number of column")
ReDim a(n, m), b(m, n) As Integer
For i = 1 To n
For j = 1 To m
a(i, j) = InputBox("input the array element in row")
Next j
Next i
For i = 1 To m
For j = 1 To n
b(i, j) = a(j, i)
Next j
```

```
Next i
For i = 1 To m
For j = 1 To n
Print b(i, j); " ";
Next j
Print
Next i
End Sub
```

Q20)

```
Option Base 1
Private Sub Command1_Click()
Dim a(), b(), d()
n = InputBox("input the number of row")
m = InputBox("input the number of column")
ReDim a(n, m), b(n, m), d(n, m)
For i = 1 To n
For j = 1 To m
a(i, j) = InputBox("input the array(a)element in row")
Next j
Next i
For i = 1 To n
For j = 1 To m
b(i, j) = InputBox("input the array(b)element in row")
Next j
Next i
For i = 1 To n
For j = 1 To m
d(i, j) = Sqr(a(i, j) ^ 2 + b(i, j) ^ 2)
Next j
Next i
For i = 1 To n
For j = 1 To m
Print d(i, j); " ";
Next j
Print
Next i
End Sub
```

Q21)

```
Option Base 1
Function s(x, y)
s = Sqr(x ^ 2 + y ^ 2)
End Function

Private Sub Command1_Click()
Dim a(), b(), d()
n = InputBox("input the number of row")
m = InputBox("input the number of column")
ReDim a(n, m), b(n, m), d(n, m)
For i = 1 To n
For j = 1 To m
a(i, j) = InputBox("input the array(a)element in row")
Next j
Next i
For i = 1 To n
For j = 1 To m
b(i, j) = InputBox("input the array(b)element in row")
Next j
Next i
For i = 1 To n
For j = 1 To m
d(i, j) = s(a(i, j), b(i, j))
Next j
Next i
For i = 1 To n
For j = 1 To m
Print d(i, j); " ";
Next j
Print
Next i
End Sub
```

Q22)

```
Option Base 1
Private Sub s(x, y, z)
z = Sqr(x ^ 2 + y ^ 2)
End Sub
Private Sub Command1_Click()
Dim a(), b(), d()
n = InputBox("input the number of row")
m = InputBox("input the number of column")
ReDim a(n, m), b(n, m), d(n, m)
For i = 1 To n
For j = 1 To m
a(i, j) = InputBox("input the array(a)element in row")
Next j
Next i
For i = 1 To n
For j = 1 To m
b(i, j) = InputBox("input the array(b)element in row")
Next j
Next i
For i = 1 To n
For j = 1 To m
Call s(a(i, j), b(i, j), d(i, j))
Next j
Next i
For i = 1 To n
For j = 1 To m
Print d(i, j); " ";
Next j
Print
Next i
End Sub
```

Q23)

```
Option Base 1

Private Sub Command1_Click()
Dim a(4) As Integer
x = Val(Text1.Text)
For i = 4 To 1 Step -1
a(i) = x Mod 2
x = Fix(x / 2)
Next i
For i = 1 To 4
Print a(i); " ";
Next i
End Sub
```

Q24)

```
Option Base 1

Private Sub Command1_Click()
Dim a(4) As Integer
For j = 0 To 15
x = j
For i = 4 To 1 Step -1
a(i) = x Mod 2
x = Fix(x / 2)
Next i
For i = 1 To 4
Print a(i); " ";
Next i
Print
Next j
End Sub
```