



Subject: Computer Programming
Division: all Divisions
Examiner:

Year: 2nd
Time: 3 Hours
Date: 10 / 6 / 2013

Answer FOUR Questions Only

Q1: Using the following series, calculate the Sin(X) to (N) terms, the form consist of one check box, two text boxes, three labels and one command button. One text box should allow the user to input the number of terms (N) and second text box should allow the user to input the value of angle(X) in radian, When the check box is selected (the value of angle X is ranged from (0 to 2 π increased by 0.2 π). Display results in a label 3 when the command button pressed. Design form and select all control boxes are used.

$$\sin(X) = X - \frac{X^3}{3!} + \frac{X^5}{5!} - \frac{X^7}{7!} + \dots$$

Q2: A- Describe the final values of (W and t) that is generated by each step of the following Visual Basic Program Segments. (17 Marks)

```
Private Sub Command1_Click()
Dim e As Integer, b As Integer, t As Integer, W As Integer
For e = 4 To 0 Step -1
For b = 0 To e - 1
t = e + b + 1
If t Mod 2 = 1 Then
W = W + t
Elseif t Mod 3 <> 0 Then
W = W + t - 2
End If
List1.AddItem Str(W) & " " & Str(t)
Next b : Next e
List1.AddItem Str(W) & " *** "
End Sub
```

B: Design a form with three option buttons to change back color of circle (radius =5) as shown in fig.(1). Write a code Program so that the back color of circle changes. Use scale (0,0)-(100,100)

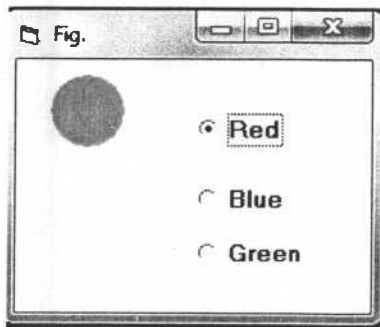


Fig. (1)

(8 Marks)

Q3: A- Write a code program to design a form as shown in fig (2) below. Calculate the value of variable (Result) by using the function procedure (Divide). If the value of X2 equal zero write a message box (divide by zero attempted) and exit the program. (10 Marks)

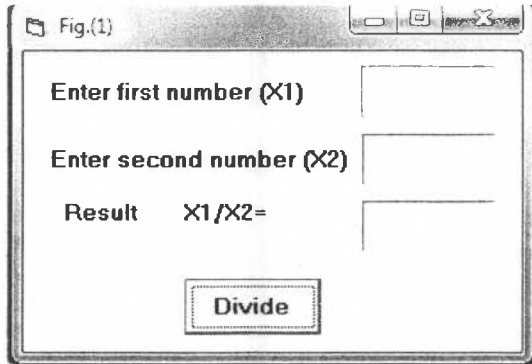


Fig.(2)

B- Design a form with one list box, one picture box and one command button , Write a code program to add the values of (50) student marks between (0 and 100) into list box (using input box statement). Find

- the number of student (N1) where marks between (50-70),
- the number of student (N2) where marks between (71-90),
- the number of student (N3) where marks between (91-100)
- the number of student (N4) where marks are below (50)

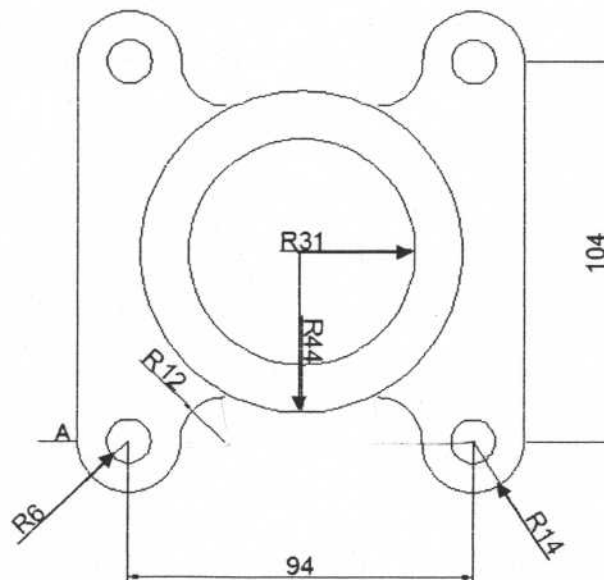
Display the values of (N1, N2, N3 and N4) into picture box.

(15 Marks)

Q4: Write a code program to read the values of a one dimension array FA (N), D(N) and M1(N). Calculate the value of variable (Mom) from the following equation and stored into one dimension array M2 (N), if the value of (M1/M2 < 1.0), stored the value of (FA, D, M1 and M2) into a new two dimensional array TOTAL (N, 4). Display a new array (TOTAL) into a picture box.

$$\text{Mom} = \text{FA} * \text{D}$$

Q5: Write a code program to draw the figure as shown below. Start from point A(10 , 30). Use scale (0,164) - (142, 0)



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```

Q1: Dim X, N, S, I, F, J
N=VAL(TEXT1.TEXT)
IF CHECK1.VALUE=1 THEN
FOR X=0 TO 2*3.14 STEP 0.2*3.14
FOR I=1 TO N
F=1
FOR J=1 TO 2*I-1
F=F*J
NEXT J
S=S+X^(2*I-1)/F
NEXT I
LABEL3.CAPTION=STR(S)
NEXT X
ELSE
S=0
X=VAL(TEXT2.TEXT)
FOR I=1 TO N
F=1
FOR J=1 TO 2*I-1
F=F*J
NEXT J
S=S+X^(2*I-1)/F
NEXT I
LABEL3.CAPTION=STR(S)
ENDIF
END SUB

```

Q2: A:

E	B	T=E+B+1	W=W+T	W=W+T-2	PRINT W	PRINT T
4	0	5	5	-	5	5
	1	6	5	-	5	6
	2	7	12	-	12	7
	3	8	-	18	18	8
3	0	4	-	20	20	4
	1	5	25	-	25	5
	2	6	-	-	25	6
2	0	3	28	-	28	3
	1	4	-	30	30	4
1	0	2	-	30	30	2
0	-	-	-	-	30 ***	-

Q2 B:

FORM1-LOAD

SCALE (0,0)-(100,100)

PRIVATE OPTION1-CLICK()

FILLSTYLE=0

FILLCOLOR=VBRED

CIRCLE(20,20),5

END SUB

PRIVATE OPTION2-CLICK()

FILLSTYLE=0

FILLCOLOR=VBBLUE

CIRCLE(20,20),5

END SUB

PRIVATE OPTION3-CLICK()

FILLSTYLE=0

FILLCOLOR=VBGREEN

CIRCLE(20,20),5

END SUB

Q3: A:

PRIVATE COMMAND1-CLICK()

DIM X1, X2, RESULT

X1=VAL(TEXT1.TEXT)

X2= VAL(TEXT2.TEX)

IF X2=0 THEN MSGBOX"DIVIDE BY ZERO ATTEMPTED",VBOK:GOTO 10

RESULT=DIVIDE(X1,X2)

TEXT3.TEXT=STR(RESULT)

END SUB

PRIVATE FUNCTION DIVIDE (X1,X2)

DIVIDE=X1/X2

END FUNCTION

Q3 B:

PRIVATE FORM1

DIM I

FOR I=1 TO 50

LIST1.ADDITEM INPUTBOX("")

NEXT I

PRIVATE COMMAND1

FOR I=1 TO 50

IF VAL (LIST1.LIST (I-1)) >50 AND VAL (LIST1.LIST (I-1)) <70 THEN

N1=N1+1

ELSEIF VAL (LIST1.LIST (I-1)) >71 AND VAL (LIST1.LIST (I-1)) <90 THEN

N2=N2+1

ELSEIF VAL (LIST1.LIST (I-1)) >91 AND VAL (LIST1.LIST (I-1)) <100 THEN

N3=N3+1

ELSEIF VAL (LIST1.LIST (I-1)) <50 THEN

N4=N4+1

ENDIF

PICTURE1.PRINT N1,N2,N3,N4

END SUB

Q4:

DIM N

N=VAL(TEXT1.TEXT)

REDIM FA(N), D(N), M1(N), M2(N), TOTAL(N,4)

FOR I=1 TO N

FA(I)=VAL(INPUTBOX(""))

D(I)=VAL(INPUTBOX(""))

M1(I)=VAL(INPUTBOX(""))

NEXT I

FOR I=1 TO N

MOM=FA(I)*D(I)

M2(I)=MOM:NEXT I

FOR I=1 TO N

IF M1(I)/M2(I)<1 THEN

K=K+1

TOTAL(K,1)=FA(I)

TOTAL(K,2)=D(I)

TOTAL(K,3)=M1(I)

TOTAL(K,4)=M2(I)

ENDIF

NEXT I

FOR I=1 TO K

FOR J=1 TO 4

PICTURE1.PRINT TOTAL(I,J);

NEXT J : PICTUER1.PRINT

NEXT I

END SUB

Q5:

Private Sub Command1_Click()

Scale (0, 164)-(142, 0)

Line (10, 30)-(10, 134)

Line (132, 30)-(132, 134)

Circle (24, 30), 14, , 3.14 , 0

Circle (118, 30), 14, , 3.14 , 0

Circle (24, 134), 14, , 0 , 3.14

Circle (118, 134), 14, , 0 , 3.14

Circle (24, 30), 8

Circle (24, 134), 8

Circle (118, 30), 8

Circle (118, 134), 8

Circle (50, 30), 12, , 3.14 / 2, 3.14

Circle (92, 30), 12, , 0, 3.14 / 2

Circle (50, 132), 12, , 3.14, 3 * 3.14 / 2

Circle (92, 132), 12, , 3 * 3.14 / 2, 0

Circle (71, 82), 44

Circle (71, 82), 31

End Sub