



Solve the following three questions [Note: marks of (Q.1), (Q.2), (Q.3) are "20,20,20" marks respectively]

(Q.1): Read the following statements and write (√) only beside number of each correct statement in the answer paper or write only (X) beside statement number if statement contains any mistake:-

- 1) Programmer can declare a character variable (Z) in Fortran by writing line `Dim Z AS String`.
- 2) The line `IF (X.GE.Y) M.EQ.8` means that (M) equal to (8) when (Y) greater than (X), in Fortran.
- 3) In Fortran, programmer starts loop by `Do; 400 J=1,N` and close this loop by `400 continue`.
- 4) In VB code, line `H = 0 : For J = 1 To 5 : H = 2 * H + (J - 1) * J ^ 3: Next J` leads to be (H) equal to (1164).
- 5) Statement `Dim Y As Long`, can declare general very large integer variable (Y), in Visual-Basic.
- 6) Line `IF B>A Then R=7` in Visual-Basic means that (R) equals to (7) when (A) less than (B).
- 7) You can declare in VB the real variables of matrix (K) using statement `Dim K(3;3) As Single`.
- 8) Line `Z= 17 \ 2` leads to make the variable (Z) equals to (8.5) exactly, in Visual-Basic code.
- 9) In VB, you can adjust the property (Locked) of TextBox at (False) to make definite length of this TextBox.
- 10) In V.B, you can declare the real variable (R) using the following statement `Dim R As Single`.

(Q.2): Designe program in (Visual-Basic) for computing and showing value $(M = \sqrt[3]{3 + 5Y})$ of root after entering two values (X and Y) in two TextBoxs (T1 and T2) respectively and pressing CommandButton (Cmdtest) for checking entered values (X and Y), hence, CommandButton (Cmdcalc) can be enabled for computing and showing value (M) in TextBox (Tm).

- a) Draw flowchart of this program.(5 Marks)
- b) The code of this program is shown beside this question but it contains some mistakes. Write this code "as it is" in answer paper and draw circles around mistakes, then write corrections of mistakes over mistakes(15 Marks)

Incorrect Visual Basic Code

```
Dim M, X, Y As Single
Private Sub Cmdtest_Click()
Dim F1, F2 As Single
F1 = Val(T1.Text) : F2 = Val(T2.Text)
If Len(F1) > 0 OR Len(F2) > 0 Then
If F1 = T1.Text And F2 = T2.Text Then
cmdcalc.Enabled = True: End If End If
If Len(T1) = 0 Then Len(T2) = 0
Tm.Text = "Wrong Inputs " : End if
End Sub
Private Sub Cmdcalc_Click()
X = T1.Text : Y = T2.Text
M = (3 + 5 * Y) ^ (X) : Tm.Text = M
End Sub
```

(Q.3): Student design program using (Fortran Language) where user of this program estimate and showing the summation (S) of infinity geometric series terms, by entering its base (D) and the first term (A) of series respectively. Note that: $(S = \frac{A}{1-D})$, where $|D| < 1$

- a) The code of this program is shown beside this question but it contains some mistakes. Write this code "as it is" in the answer paper and draw a circles around the mistakes, then write corrections of mistakes over these mistakes. (15 marks)
- b) Write the steps of the algorithm of the code of this program(5 marks)

Incorrect Code of Fortran Program

```
REAL S, A, D
PRINT*, " Please Enter: A & D "
READ*, A, D
IF (D.LT.1.AND.D.GT.1) Then
S=A/1-D
PRINT*, ' S= A/1-D= ', S
End IF
If (D.GE.-1.OR.D.LT.-1) Then
PRINT*, 'Base of Series is RANG '
End IF
STEP
END
```

With our best wishes (Dr/ Mohamed Allam & DR/ Khaled Khader)

This exam contributes "by measuring" in achieving Programme Academic Standards according to NARS											
Question Number	Q1,1&2&3&4&5&6	Q1,10	Q1,7&8&9	Q2-b	Q2-b	Q3-b	Q2-a	Q3-b	Q3-a	Q3-b	
	a1-1	a15-1	a15-2	a19-1	b1-1	b16-1	b17-1	c6-1	c6-2	c13-1	c14-1
Skills	Knowledge & Understanding Skills				Intellectual Skills			Professional Skills			