NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF APPLIED SCIENCE
COMPUTER SCIENCE DEPARTMENT
MAY EXAMINATIONS 2005

SUBJECT: VISUAL BASIC AND DEVELOPMENT CONCEPTS
CODE: SCS1206

INSTRUCTION TO CANDIDATES

Answer **all** *questions in section A and any* **two** *questions in section B*

Time: 3 hours

Section A
Answer all questions.

QUESTION ONE

a) What are the main differences between object-oriented programming and traditional procedure-oriented programming? In your comparison, include advantages of one over the other.   [6]

b) Define the following terms, giving examples as applied in Visual Basic.

    i.   object
    ii.   form
    iii.   class
    iv.   application
    v.   property   [10]

c) Explain what an EVENT is and give any three examples of events in Visual Basic programming.   [4]

QUESTION TWO

a) With the aid of Visual programming examples, explain the following functions and their use:

    i.   InStr
    ii.   UCase
    iii.   Mid$ [6]

b) Explain the meaning of each line of the Visual Basic code given below and give the output of the code.

```
Private Sub Text1_KeyPress (KeyAscii As Integer)
        Dim strFullName, strSurname As String
        If KeyAscii = 13 Then
                strFullName = Text1.Text
                strSurname = Mid$(strFullname, InStr(1,
strFullName," ") + 1)
                        Label1.Caption = "Surname = " + ACase(strSurname)
                End If
        End Sub
```

[10]

c) Distinguish between Single parameter functions and Multiple parameter functions in Visual Basic. [4]

QUESTION THREE

a) Write a function to perform a binary search, accepting a KeyField(which is the sought item) for a list of integers [10]
b) Design an application that emulates a calculator ADD function or process. The small calculator must accept two numbers , fisrtNum and SecondNum. At clicking the command button SUM, the application should compute the sum of the numbers and display them on the display control. The form may look like the one below. [10]

Section B

Answer any two questions.

QUESTION FOUR

As a newly qualified NUST graduate, Fidelity Future Focus firm has approached you about a new product that allows clients to contribute towards an annuity fund to accrue, and to be payable at the end of an agreed term. Clients are able to select a term, and a fixed amount to invest monthly(in dollars). Required is a Visual Basic application that will accept the term (iTerm), installment (dblInst), and will calculate the maturity value of the annuity using the formula given below;

$$S = \left[\frac{R(1+r)n}{r} - 1 \right]$$

Where **S** is the future value, **R** is the installment, **n** is the number of months and **r** is the interest rate assumed to be constant at 2% per annum.

Your program should display the installment, term, and the future value.   [20]

QUESTION FIVE

a) Distinguish between a sequential file and a random file.   [4]

b)   Identify and explain briefly, all three modes to open a sequential file in
        Visual Basic.   [6]

c)   Write a Visual Basic code to read a person's name, address and zip code
        into three variables(name$, address$ and ZipCode). Then you click on a
        command button to write that data to a file named **foo.dat.**   [8]

d)   Explain the use of Eof(filename statement in Visual Basic).   [2]

3

QUESTION SIX

a)   Write the syntax of the selection in Visual Basic.   [3]

b)   Explain the difference between InputBox and MsgBox statements in Visual
     Basic.   [2]

c)   Write the syntax to declare a two-dimensional array in Visual Basic.
                                                                           [3]

d)   Write a Visual Basic application to declare a two-dimensional array called
     mintScore. Then using nested For-Next loops approach to;
     i.   populate the array with integers
     ii.   compute their sum,
     iv.   compute their average
     v.   obtain the largest integer in the array.   [12]

END OF QUESTION PAPER