2920/205
VISUAL PROGRAMMING
July 2015
Time: 3 hours

Candidate's Signature:_____

Date: _____

THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

MODULE II

VISUAL PROGRAMMING

3 hours

INSTRUCTIONS TO CANDIDATES

Write your name and index number in the spaces provided above.
Sign and write the date of examination in the spaces provided above.
Answer any **FIVE** *of the* **EIGHT** *questions in this paper in the spaces provided.*
Candidates should answer the questions in English.

For Examiner's Use Only

Question	1	2	3	4	5	6	7	8	Total Score
Candidate's Score									

This paper consists of 14 printed pages.

Candidates should check the question paper to ascertain that all the
pages are printed as indicated and that no questions are missing.

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Turn over

1. (a) Agrey would like to install a payroll system developed using a Visual Basic programming language. State **four** system requirements necessary for a successful installation. (4 marks)

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(b) State the property that would be set in order to achieve each of the following when designing an interface in a Visual Basic program: (4 marks)

(i) change the background colour of form;

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(ii) limits the acceptable values of a field;

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(iii) change size of control;

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(iv) prevent accidental movement of the controls.

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(c) Explain the function of each of the following controls in a Visual Basic programming environment:

(i) Data; (2 marks)

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(ii) Ole; (2 marks)

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(iii) Combobox. (2 marks)

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(d) State the output generated when each of the following Visual Basic codes is executed.

(i)
```
Dim ch As Integer
For ch = 1 To 20 Step 2
If ch = 10 Then
Print ch
End If
Print ch
Next
```
(2 marks)

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(ii)
```
Private Sub Command1_Click()
Dim string1 As String
Dim string2 As String
Dim string3 As String
Dim string4  As String
string1 = "abcdefgh"
Print string1

string2 = Mid$(string1, 2, 3)
Print string2

string3 = Left(string1, 3)
Print string3

string4 = Right(string1, 2)
Print string4
End Sub
```
(2 marks)

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(iii)
```
Dim strtest as string
Strtest=strStrReverse$("Visual Basic")
  Print strtest
  End sub
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(2 marks)

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2. (a) (i) Describe the term *variable life time* as used in Visual Basic program. (2 marks)

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(ii) Ali wrote a program and declared each of the following as variable names. Explain, giving a reason, why each could be incorrect.

I. 123name; (2 marks)

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II. Number .one; (2 marks)

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III. End Sub. (2 marks)

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(b) Figure 1 shows the start up window in a Visual Basic programming environment. Use it to answer the question that follows.

Figure 1

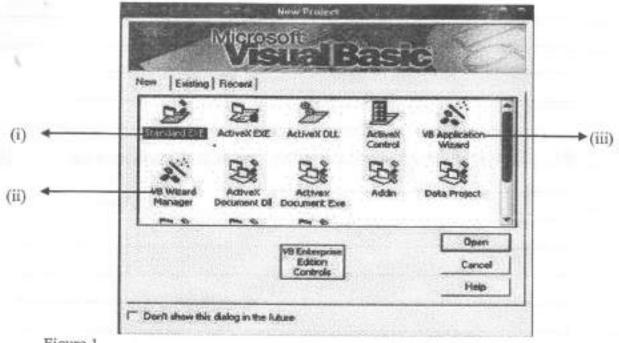Explain the function of each of the options labelled (i), (ii) and (iii). (6 marks)

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(c) Andrew has developed a system and would like to test the system for the errors. Describe **three** ways in which he can trap the errors during runtime in a Visual Basic program. (6 marks)

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3. (a) State **six** properties of the *label control* as used in Visual Basic programming. (3 marks)

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(b) Distinguish between *a variable* and *an array* as used in programming.   (4 marks)

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(c) Explain **two** advantages of using *debug object* to display an error message as opposed to a msgbox() in a Visual basic program .   (4 marks)

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(d) Given the following numbers 5,2,4,6,1. Use insertion sort algorithm to arrange the numbers in ascending order. Show each step of the operation.   (9 marks)

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4. (a) Distinguish between *local window* and *immediate window* as used in a Visual Basic programming language. (4 marks)

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(b) Explain a circumstance under which each of the following events of Ado Data Control may be used:

(i) WillChangeRecordset; (2 marks)

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(ii) RecordChangeComplete; (2 marks)

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(iii) FieldChangeComplete. (2 marks)

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(c) Distinguish between a *command object* and *recordset object* as used in a Visual Basic program. (4 marks)

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(d) Write a Visual Basic program that would display the series 1,1,2,3,5,8,13,21....N in a picture box. The program should prompt the user to input the value of N. Attach the code to a command click event. *Use a for loop.* (6 marks)

5. (a) Outline **two** ways in which arguments can be passed to a parameter in a Visual Basic program. (2 marks)

(b) Distinguish between *procedure-level* and *module-level* variables as used in a Visual Basic program. (4 marks)

(c)   Write a Visual Basic program that would accept the first date and the second date through the use of an Inputbox() and display the number of days between the two dates in on a form. Attach the code to a command click event.   (6 marks)

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(d)   (i)   Describe a *linear data structure* as used in programming.   (2 marks)

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      (ii)   With the aid of a diagram in each case, describe **three** types of data structures other than arrays.   (6 marks)

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6. (a) The following are statements in a Visual Basic program. State the function of each statement. (2 marks)

(i) `recordset.AddNewFieldList, Values;`

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(ii) `myRecSet.Open "select * from myTable", MyConnObj, adOpenKeyset.` (2 marks)

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(b) Distinguish between a *cls method* and a *refresh method* as used in a Visual Basic program. (4 marks)

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(c) Explain **three** sources of connection of a *Ado Data Control* to the database. (6 marks)

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(d)   Write a Visual Basic program that would accept the values of $a, b,$ and c through the use of text boxes. The program should then solve the quadratic equation;

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

then displays the results on a picture box. Attach the code to a command click event. Use an *if* statement.

                                                        (6 marks)

7.   (a)   Explain **two** characteristics of *control arrays* as used in a Visual Basic program.

                                                        (4 marks)

(b) (i) Maurice, a module two student, developed an application using a Visual Basic program *user defined function*. Explain **two** reasons that could justify the use of these functions. (4 marks)

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(ii) Write a Visual Basic program that would initialise two values 20 and 30 to two variables and then swap the values using a function and display the results on a form. Attach the code to a command click event. *Use functions.* (6 marks)

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(c) Describe each of the following types of loops giving the general syntax in each case.

(i) while....wend (2 marks)

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(ii) do... while loop;   (2 marks)

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(iii) do... until loop.   (2 marks)

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8. (a) Outline the role of each of the following controls in a *datareport* toolbox.

   (i) function control;   (1 mark)

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   (ii) textbox control.   (1 mark)

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 (b) (i) Describe **two** mandatory *menu editor* properties used when executing a menu.
              (4 marks)

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   (ii) Outline the function of each of the following *rdo objects* in a Visual Basic Program:

     (I) rdo parameters;   (1 mark)

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(II) rdoerror. (1 mark)

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(c) The following are *custom aware tools* used in linking of databases in Visual Basic. For each, identify the tool and their function. (6 marks)

(i)

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(ii)

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(d) Write a program that would accept twelve values of an array through the use of an inputbox(). The program should then display the values entered in a 2x2 array showing the position of the value in the array in a picture box. Attach the code to a command click event. (6 marks)

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