2920/205
VISUAL PROGRAMMING
November 2017
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

MODULE II

VISUAL PROGRAMMING

3 hours

INSTRUCTIONS TO CANDIDATES

*Answer any **FIVE** of the following **EIGHT** questions in the answer booklet provided.*
All questions carry equal marks
Candidates should answer the questions in English.

This paper consists of 4 printed pages.

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

Turn over

1.   (a)   (i)   Outline **three** factors that could be considered when setting control properties in a Visual Basic program.   (3 marks)

              (ii)   Distinguish between an *object* and a *control* as used in Visual Basic program Environment   (2 marks)

      (b)   (i)   Describe the term *menu editor* as used in Visual Basic programming.   (2 marks)

              (ii)   Describe **two** properties applied in a menu editor.   (4 marks)

      (c)   (i)   Distinguish between *sentinel* and *flag controlled loops* as used in programming.   (4 marks)

              (ii)   Write a program in Visual Basic that would display even numbers between 10 and 20 on a form. Use a *do while* statement. Attach the code to a command button.   (5 marks)

2.   (a)   State the *prefix* for each of the following Visual Basic tools: (2 marks)

              (i)   Timer;

              (ii)   Option Button;

              (iii)   Shape;

              (iv)   Horizontal ScrollBar.

      (b)   Describe **three** Project Explorer buttons used in a Visual Basic program.   (6 marks)

      (c)   Figure 1 shows a list of numbers in an array. Use it to answer the question that follows.

| 11 | 12 | 17 | 19 | 21 | 25 | 26 | 28 |

Figure 1

Perform a binary search on the array showing the steps, given that the search key is 28.   (5 marks)

      (d)   Write a program in Visual Basic that accepts a name of a person through the use of an input box .The program should then add the name to a list box through the use of a procedure. Attach the code to a command button.   (7 marks)

3   (a)   Outline **four** characteristics of a Visual Programming language.   (4marks)

      (b)   (i)   Describe a sub procedure as used in a Visual programming.   (2 marks)

              (ii)   Outline **three** characteristics of an event as used in Visual Basic programming.   (3 marks)

      (c)   Distinguish between *unload* and *hide methods* as used in a Visual Basic program.   (4 marks)

(d) A book supplier offers a discount of 10% when the total cost of books purchased is more than 10,000. Write a program in Visual Basic that accepts the price of three books one at a time through an input box. The program computes total cost, discount if any and then displays the amount payable on a picture box. Attach the code to a command button.

(7 marks)

4. (a) The following are programming languages.

Visual Basic, PHP JavaScript, Visual C++, Python, lisp

Categorise each language as either event driven or procedural programming languages.

(3 marks)

(b) Outline **three** properties of a user defined function. (3 marks)

(c) Explain **three** similarities between *ADO data control* and *data environment* as used in Visual Basic programming. (6 marks)

(d) (i) Explain the use of *ubound()* as used in an array. (2 marks)

(ii) Write a program in Visual Basic that accepts five values in an array. The program then displays the smallest and the largest value on the form. Attach the code to a command button. (6 marks)

5 (a) State the output generated when each of the following Visual Basic statement is executed. (4 marks)

(i) Mid ("Visual Environment", 3, 6)

(ii) InStr (1, "Visual Environment", "Environment")

(iii) Print Len ("Visual Environment")

(iv) Print RTrim("Visual Environment   ")

(b) Describe **two** values for an EOF action in a Visual Basic program. (4 marks)

(c) John, a programmer would like to include *error handling messages* in a Visual Basic program. Explain **three** approaches that he could consider. (6 marks)

(d) Table 1 shows details of Module 1 subjects. Use it to answer the question that follows:

Subject code	Subject name	Label colour
4	ICT	Red
6	Programming	Green
8	Mathematics	Orange
Any other number	Does not exist	White

Write a program in Visual Basic that accepts the subject code through the use of a textbox. The program then displays the subject name on a label and changes the label background colour as indicated when a command button is clicked.
Use a *select case* statement. (6 marks)

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Turn over

6   (a)   Outline **three** *Recordset methods* that enables navigation in a Visual Basic program.

(3 marks)

(b)   Describe **three** *ADO data locking* options used in a Visual Basic program.   (6 marks)

(c)   Alice tried connecting a database table to a form. When she clicked the test connection button, a message "unsuccessful" was displayed. Explain **three** possible reasons that could lead to this.   (6 marks)

(d)   Write a program in Visual Basic that would accept the name of a person through the use of a text box. The program then displays " Hallo Nelly" on a message box() when the name entered is Nelly, otherwise it displays " unknown name" .Attach the code to a command button.   (5 marks)

7   (a)   Outline **two** *keypress* events and **two** *mouse events* in a Visual Basic program.   (4 marks)

(b)   Differentiate between *Print x , y* and *Picture1.Print x , y* statements as used in a Visual Basic program.   (4 marks)

(c)   Marion, a programmer would like to include *err object* method in a Visual Basic program. Explain **two** methods that she could consider .   (4 marks)

(d)   Write a program in Visual Basic that uses a procedure to capture the radius of a circle through the use of a textbox. The program then computes the area of a circle and volume of a sphere through a procedure and displays the results on a form. Attach the code to a command button.   (8 marks)

8   (a)   Outline **four** sorting techniques that could be used in a Visual Basic program.   (4 marks)

(b)   Mary prefers using a binary tree to search for a record. Explain **three** challenges she could face.   (6 marks)

(c)   Figure 2 shows a user interface in a Visual Basic program. Use it to answer the question that follows.
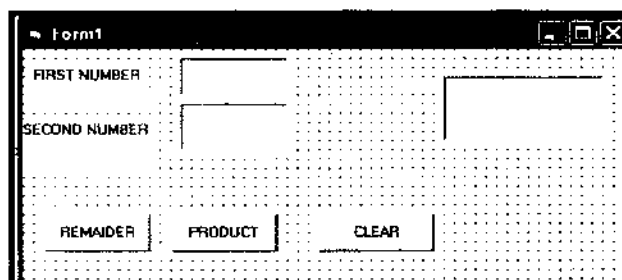

Figure 2

Write a program in Visual Basic that could implement the interface. The program should clear the results in the *picturebox* when the button clear is clicked.   (10 marks)

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