

Machakos University

Supplementary/Special Examinations

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

SIT104: VISUAL BASIC PROGRAMMING

DATE:

Time:

Instructions

This paper consists of FIVE questions

*Answer **question one** and other **two questions** in this paper*

1. (a) (i) Describe each of the following components of the Visual Basic Integrated Development Environment.
 - I. Properties Window;
 - II. Project Explorer.

(4 marks)
- (ii) John, a programmer prefers to use Visual Basic programming language to create applications. Outline **three** features of Visual Basic language that could have led to this preference.

(3 marks)
- (b) (i) Describe each of the following Visual Basic objects:
 - I. ComboBox;
 - II. Label;
 - III. Line.

(6 marks)
- (ii) Distinguish between *explicit* and *implicit* variable declaration as used in Visual Basic programming.

(4 marks)
- (c) (i) State the prefix associated with each of the following Visual Basic controls:
 - I. Image;
 - II. Data;
 - III. PictureBox;
 - IV. Frame.

(2 marks)
- (ii) Distinguish between *public* and *private* procedures as used in Visual Basic programming.

(4 marks)
- (d) Write a Visual Basic program that would prompt a user to enter the radius of a circle through an input box. The program then computes the area of the circle through a function and outputs the result through a message box.

(7 marks)

2. (a) (i) State whether or not each of the following identifiers are valid Visual Basic variable names:
- I. Obama//
 - II. Kenya-moja
 - III. Student_Name
 - IV. WorldCup
- (4 marks)
- (ii) Assuming Visual Basic programming language, state the order of execution of the following statement.
- $$Z = X^5 + Y - A * (B / C)$$
- (2 marks)
- (b) (i) Write the output generated by each of the following Visual Basic string functions.
- I. Upper(information technology)
 - II. LTrim(Valentine.....)
- (2 marks)
- (ii) Write the output generated when the following Visual Basic statement is executed:
- ```
A = 34mod5
C = sqr(A)
Print C
```
- (2 marks)
- (c) Distinguish between *global* and *local* variables as used in Visual Basic programs.
- (4 marks)
- (d) Write a Visual Basic program that will generate the following output on a form.
- ```
The value of a is: 2
The value of a is: 7
The value of a is: 12
```
- (6 marks)
3. (a) (i) Explain the term *user defined* data type as used in programming. (2 marks)
- (ii) Create a data type that could be used to store student details that include *RegNo.*, *StudentName*, *DateofBirth* and *M/F* in a visual basic program. (4 marks)
- (b) (i) Explain two methods used to connect a Visual Basic program to a database. (4 marks)
- (ii) Describe **two** components that are necessary for the creation of a Visual Basic report. (4 marks)
- (c) A biometric scanner has been fitted on a door, students are required to place a thumb on the scanner which reads and compares the information with that it has stored in its memory. If the details match the door opens otherwise it does not open. This process is repeated for each student.
- Draw a flow chart to represent the logic in this narrative. (6 marks)

4. (a) (i) Outline **three** keyboard events used in Visual Basic programming language. (3 marks)

- (ii) Study the following Visual Basic program code and then answer the question that follows:

```
Private Sub cmdResults_Click()  
Dim Num1, Num2, Num3, Num4 As Integer  
Num1 = (InputBox("Enter an Integer"))  
Num2 = (InputBox("Enter an Integer"))  
Num3 = Num1/Num2  
Num4 = Num1 mod Num2  
Print Num3  
Print Num4  
End Sub
```

State the output generated given that Num1 = 15 and Num = 6 (4 marks)

- (b) (i) Write the general syntax of *case statement* as used in visual basic programming. (4 marks)

- (ii) Represent the *while..wend* in a flow chart segment. (3 marks)

- (c) A University library has a provision for students to borrow books online. The form used consists of a label, a text box, option buttons, combobox and a command button.

The label is placed next to the text box to identify it, the borrower types his/her registration number in the textbox, selects the appropriate option for mode of study either Regular or Part-time and then selects a book through the combo box. The information is then submitted by clicking the command button.

Assuming Visual Basic programming language environment, sketch the interface that could be used to implement this logic. (6 marks)

5. (a) Sketch the output generated when the following Visual Basic statement is executed. (3 marks)

```
ProductID = InputBox ("Enter the product number", "Product Number", xxxx)
```

- (b) Write a Visual Basic program that would generate the following output on a form.

```
5      6      7  
5      6  
5
```

Attach the code to a command button. (4 marks)

- (c) Distinguish between *do until.. loop* and *do.. loop until* iteration statements as used in Visual Basic programs. (4 marks)

- (d) (i) Outline **three** functions used to handle errors in Visual Basic programming. (3 marks)

- (ii) Explain **three** types of errors that could be encountered in programming. (6 marks)