



MACHAKOS UNIVERSITY

University Examinations for 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

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) Explain each of the following components of the Visual Basic Integrated Development Environment.
I. Toolbox;
II. Project Explorer.
(4 marks)
- (ii) Outline **three** factors that make Visual Basic programming language to be preferred over other languages when creating applications. (3 marks)
- (b) (i) Explain each of the following terms as used in Visual Basic programming:
I. Event;
II. Method;
III. Public function. (6 marks)
- (ii) Distinguish between *optionbutton* and *checkbox* as used in Visual Basic programming. (4 marks)
- (c) (i) State the prefix associated with each of the following Visual Basic controls:
I. Form;
II. Vertical scroll bar;
III. Combobox;
IV. Frame. (2 marks)
- (ii) Describe two methods associated with a form. (4 marks)
- (d) Write a Visual Basic program that would prompt the user to enter the currency of trade through the use of an input box. The program then converts the currency entered to either US dollars or Ksh depending on the currency entered and displays the results through a message box. Use functions to convert. Attach the code to a command button.
Hint 1 US dollar = 102 Ksh. (7 marks)

2. (a) (i) State whether or not each of the following Visual Basic variable names are valid justifying your answer in each case.
 I. Number#
 II. Myfirst (2 marks)
- (ii) Assuming Visual Basic programming language, state the order of execution of the following statement.

$$Y = A^3 + B - C * D / E$$
 (2 marks)
- (b) (i) Write the output generated by each of the following Visual Basic string functions.
 I. len(University of Research)
 II. trim(Myname) (2 marks)
- (ii) Write if statement that would use each of the following logical operators:
 I. OR;
 II. AND. (4 marks)
- (c) Distinguish between each of the following pairs of controls as used in Visual Basic programming language:
 (i) Picture box and Image box;
 (ii) List Box and Combo Box. (4 marks)
- (d) Write a Visual Basic program that will compute the average of integers between 60 and 150 and output the result on a form. Use *for..* loop. Attach the code to a command click event. (6 marks)
3. (a) Explain two methods used to connect a Visual Basic application to a database. (4 marks)
- (b) (i) With the aid of a sketch in each case, describe two types of reports that could be generated in a Visual Basic application. (4 marks)
- (ii) State the function of each of the following arithmetic formulas in a Visual Basic report.
 I. Time();
 II. Sum. (2 marks)
- (c) A student created a Visual Basic application to accept the marks scored by a student in five units for a class of ten students. Model this scenario using a flow chart. (6 marks)
- (d) Study the following Visual Basic program code and then answer the questions that follow:

```
Private Sub cmdAdd_Click()
  Dim Num As Single
  Num = (InputBox("Enter an Integer"))
  Num = Num + 3
  Num = (Num + 7) mod 6
  picbox. Print Num
End Sub
```
- (i) Interpret the program.
 (ii) State the output generated if the input value is 15. (4 marks)
4. (a) State **three** steps followed when creating a Visual Basic application. (3 marks)

- (b) Write the standard prefix for each of the following Visual Basic programming language data types:
- (i) Currency;
 - (ii) Boolean;
 - (iii) Object;
 - (iv) Byte. (2 marks)
- (c) Outline the use of each of the following inbuilt functions:
- (i) Val()
 - (ii) DateValue()
 - (iii) minute() (3 marks)
- (d) During a Visual Basic programming lesson, students were required to write an application that could accept voters number and name through text boxes, constituency (Central, West, East, Other) and sex (Male, Female) were to be selected through option buttons. The program would then check the constituency selected and output “You are registered in constituency name” or “You are not a registered voter” on a label when either Central, West, East or otherwise respectively. The program is attached to a command button.
- (i) Sketch the interface; (5 marks)
 - (ii) Write a Visual Basic program to implement the interface. (7 marks)
5. (a) Sketch the output generated when the following Visual Basic statement is executed. (4 marks)

`MsgBox "The current date and time of the system is", "VbOKCancel" & Now`

- (b) Write a Visual Basic program that would generate the following output on a form. Use *do while loop*. Attach the code to a command button.

The value of x is 10
 The value of x is 11
 The value of x is 12
 The value of x is 13

(4 marks)

- (c) Distinguish between *GotFocus* and *DropDown* properties of a combobox. (4 marks)
- (d) Table 2 shows the points scored by a candidate at KCSE and a corresponding area of study the candidate may be admitted into. Use it to answer the question that follows.

Points	Remark
80 -84	Engineering
76 -79	Medicine
70 -75	Law
65-69	Science
	Arts

Table 3

Write a Visual Basic program that would prompt a user to enter the points scored by a candidate through an input box. The program then outputs the corresponding area of study through the use of a message box. Use the *select* control structure and attach the code to a command button. (8 marks)