



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: 25/9/2019

TIME: 8.30-10.30 AM

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. Object Window;
 - II. Toolbox. (4 marks)
- (ii) Outline **three** benefits a programmer would accrue from using Visual Basic to develop an application. (3 marks)
- (b) (i) Describe each of the following Visual Basic objects:
 - I. ScrollBar;
 - II. CheckBox;
 - III. Shape. (6 marks)
- (ii) Distinguish between *event* and *method* as used in Visual Basic programming. (4 marks)
- (c) (i) State the prefix associated with each of the following Visual Basic controls:
 - I. ListBox;
 - II. Frame;
 - III. Line;
 - IV. Text. (2 marks)
- (ii) Describe each of the following types of modules:
 - I. Form Module;
 - II. Class Module. (4 marks)

- (d) Write a Visual Basic program that would prompt a user to enter the units used in measuring length of a rectangular field (either metres or feet). The program then prompts the user to enter the length and using functions converts the length into kilometres.
Hint: 1 Kilometre = 1000 metres and 1 Kilometre = 3,280 feet (7 marks)
2. (a) (i) Outline **four** rules of naming variables in Visual Basic language. (4 marks)
(ii) Assuming Visual Basic programming language, state the order of execution of the following statement.
$$Z = \exp X + Y - A * (B / C)$$
 (2 marks)
- (b) (i) Write the output generated by each of the following Visual Basic string functions.
I. Lower(Information Technology)
II. Rtrim(Technology) (2 marks)
(ii) Write the output generated when the following Visual Basic statement is executed:
$$A + B > B + C$$
, Given that $A = 10$, $B = 5$, $C = 8$ (2 marks)
- (c) Distinguish between *debug* and *run* commands as used in Visual Basic programs. (4 marks)
- (d) Write a Visual Basic program that will compute the average of integers between 50 and 75 and output the result on a form. Use *do..* loop. Attach the code to a command button. (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) Describe **two** functions that could be inserted in Visual Basic report. (2 marks)
- (c) John, a programmer would like to create a Visual Basic application that would be able to capture the marks scored by fifty students in an examination. Draw a flow chart that could be used to implement this program logic. (6 marks)
- (d) Study the following Visual Basic program code and then answer the question that follows:

Private Sub cmdAdd_Click()

```

Dim Num As Integer
Num = (InputBox("Enter an Integer"))
Num = Num + (Num*2)
Num = (Num - 3) mod 4
picbox. Print Num
End Sub

```

State the output generated if the input value is 10. (4 marks)

4. (a) Explain variant data type as used in Visual Basic programming language. (2 marks)
- (b) (i) Explain **three** classes of operators used in Visual Basic programming language. (6 marks)
- (ii) Outline **four** elements of *for* control structure. (4 marks)
- (c) Outline the use of each of the following inbuilt functions:
- (i) Succ ()
- (ii) Pred ()
- (iii) Val () (3 marks)
- (d) The national government allocates bursary to university students annually. A student needs to apply by filling a form online. The form consists of a textbox to enter the student's registration number, a combo box to select the university, a picture box to upload a photo and option buttons to select gender. The form is submitted by clicking a button.

Sketch a Visual Basic language interface that could be used to implement this logic. (5 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.

```

1      2      3
1      2
1

```

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

- (c) Distinguish between *GotFocus* and *DropDown* properties of a combobox. (4 marks)

- (d) Table 2 shows the grade 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.

Grade	Course
A	Engineering
B	Medicine
C	Law
D	Science
	Arts

Table 3

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