



Machakos University College

(A Constituent College of Kenyatta University)

University Examinations 2014/2015

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR SECOND SEMESTER EXAMINATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

SIT104: VISUAL BASIC PROGRAMMING

DATE: 15/12/2014

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) Explain **two** components of the Visual Basic Integrated Development Environment. (4 marks)
- (ii) A student was tasked with writing a program to be used in the college's dispensary. Outline **three** circumstances that would make him prefer to use Visual Basic programming language for the task over other programming languages. (3 marks)
- (b) (i) Explain each of the following terms as used in Visual Basic programming:
 - I. Value parameter;
 - II. Event procedure;
 - III. Public function. (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. picturebox;
 - II. shape;
 - III. combobox;
 - IV. frame. (2 marks)
- (ii) Table 1 shows various Visual Basic controls and their associated properties. Use it to answer the question that follows:

Control Name	Properties
Text Box	Multiline SelLength
List Box	List count Sorted

Table 1

Outline the function of each of the properties. (4 marks)

- (d) Write a Visual Basic program that would prompt the user to enter the radius of a sphere through the use of an input box. The program then computes the volume of the sphere through the use of a function and displays the results on a form. Attach the code to a command click event.
Hint Volume of a sphere $V = \frac{4}{3} \pi r^3$ (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. Myprog#1;
II. 3num. (2 marks)

- (ii) Assuming Visual Basic programming language, state the order of execution of the following statement.

$$Z = X^3 + A - B * C / D \quad (2 \text{ marks})$$

- (b) (i) Write the output generated by each of the following Visual Basic string functions.
I. len(Machakos University College)
II. ltrim(Bsc(IT)) (2 marks)

- (ii) Table 2 shows the status of two expressions executed in Visual Basic programming language. Use it to answer the question that follows.

Expression1	Expression2	OR	AND
True	True		
True	False		
False	True		
False	False		

Table 2

Evaluate the result of combining the two expressions through the use of logical operators OR and AND. (4 marks)

- (c) Distinguish between each of the following pairs of controls as used in Visual Basic programming language:
(i) Option Button and Check Box;
(ii) DirListBox and FileListBox. (4 marks)

- (d) Write a Visual Basic program that will compute the average of integers between 10 and 50 and output the result on a form. Use a do...while loop. Attach the code to a command click event. (6 marks)

3. (a) Explain **two** functions of the ADO control as applied in Visual Basic programming language. (4 marks)

- (b) (i) With the aid of a sketch in each case, describe two types of reports that could be generated in Visual Basic programming language. (4 marks)

- (ii) List **two** arithmetic formulas that could be included on a Visual Basic report. (2 marks)

- (c) With the aid of a program flowchart, describe each of the following control structures as used in programming languages.
- (i) selection;
 - (ii) iteration. (6 marks)
- (d) Write a Visual Basic program that would generate the following output on a form. Use *for* loop. Attach the code to a command click event.
- ```
PPPPP
PPPP
PPP
PP
P
```
- (4 marks)
4. (a) State **three** characteristics of an event driven programming language. (3 marks)
- (b) (i) Explain the term *Control Array* as used in Visual Basic programs. (2 marks)
- (ii) Write the standard prefix for each of the following Visual Basic programming language data types:
- I. Boolean;
  - II. Currency;
  - III. Byte;
  - IV. Objet. (2 marks)
- (c) A student used Textboxes to enter two integers into a Visual Basic program in order to get their sum. When she executed the program the result generated was a combination of the two integers.
- (i) State one reason that could have led to the observed result.
  - (ii) Suggest a possible solution to the problem. (3 marks)
- (d) During a Visual Basic programming lesson, students were required to write a program that could accept name, age and sex of a student through the use of text boxes. Then program would then check the age entered and output either “you are mature” or “you are underage” on a label when the age is greater or equal to 23 or otherwise respectively. The program is attached to a command click event.
- (i) Design the interface for the program; (3 marks)
  - (ii) Write a Visual Basic program to implement the interface. (7 marks)
5. (a) (i) State **two** types of variable declaration used in Visual Basic programming. (2 marks)
- (ii) Describe each of the following tools as used in Visual Programming language:
- I. Break point;
  - II. Watches. (4 marks)
- (b) Study the following Visual Basic program code and then answer the questions that follow:
- ```
Private Sub cmdNumber_Click()
Dim num As Single
num = (InputBox(“Enter a number”))
num = num + 1
num = (num + 4) mod 4
picbox. Print num
End Sub
```

- (i) Interpret the program. (4 marks)
- (ii) State the output generated if the input value is 10. (4 marks)
- (c) Distinguish between *Str()* and *Chr()* functions as used in Visual Basic programming language. (4 marks)
- (d) Table 3 shows the grade and corresponding remark used in a certain college. Use it to answer the question that follows.

Grade	Remark
A	Excellent
B	Good
C	Pass
D	Satisfactory
	Fail

Table 3

Write a Visual Basic program that would prompt a user to enter the grade obtained by a candidate through an input box. The program then outputs the corresponding remark through the use of a message box. Use the select case control structure and attach the code to a command click event. (6 marks)