MACHAKOS UNIVERSITY

University Examinations for 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

SIT104: VISUAL BASIC PROGRAMMING

DATE: 30/4/2019 **TIME: 11.00-1.00 PM**

INSTRUCTIONS

Answer **question ONE and any other TWO questions.**

QUESTION ONE (30 MARKS)

a) i Describe each of the following components of Visual Basic Integrated Development Environment.

I. Code window; (2 marks)

II. Properties window. (2 marks)

ii Peter, a programmer prefers to use Visual Basic programming language to create applications. Outline **three** reasons that could have led to this preference. (3 marks)

b) i Describe each of the following Visual Basic objects:

I. Image; (2 marks)

II. Combobox; (2 marks)

III. Data. (2 marks)

ii Distinguish between *variant* and *long integer* data types as used in Visual Basic programming. (4 marks)

c) i State the prefix associated with each of the following Visual Basic controls:

I. Timer;

II. Checkbox;

III. Line;

IV. PictureBox. (2 marks)

ii John, an Information Technology student created a visual basic program using procedures. Explain **two** types of procedures he could have used. (4 marks)

d) Write a Visual Basic program that would prompt a user to enter the dimensions of a closed cylinder through input boxes. The program then computes and outputs the surface area of the cylinder through a message box. (7 marks)

QUESTION TWO (20 MARKS)

a) i Justifying your answer in each case, state whether or not each of the following identifiers are valid Visual Basic variables:

I. First Number;

II. Select;

III. Boolean;

IV. Amani. (4 marks)

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

X = A ^3 + Q – P * (R / D) (2 marks)

b) i Write the output generated when each of the following Visual Basic statements are executed.

I. Upper(Ministry of Education)

II. LTrim(……Information Technology……) (2 marks)

ii Write the output generated when the following Visual Basic statement is executed:

A = sgr(B) given that B = 16 (2 marks)

c) Distinguish between *local* and *static* variables as used in Visual Basic programs. (4 marks)

d) Write a Visual Basic program that will generate the following output on a form.

```
        1
    2       2
3       3       3
4   4   4   4
```

(6 marks)

QUESTION THREE (20 MARKS)

a) i Explain the term user defined data type as used in programming. (2 marks)

ii CobTec College stores students details such as Regno, Name, Course and Average in a system. Create a data structure that could be used to store these details. (4 marks)

b) i A student created a visual basic interface that was connected to a database. Explain **two** methods he could have used to connect the two. (4 marks)

ii With the aid of a sketch in each case, describe two layouts of a Visual Basic report. (4 marks)

c) Read the following scenario and then answer the question that follows:

Students in a certain university register for units through a portal. To register a student is required to have reported for session and cleared the semester fees.

Draw a flow chart to represent this logic. (6 marks)

QUESTION FOUR (20 MARKS)

a) i With the aid of a syntax code, describe array data structure. (3 marks)

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

```
Private Sub cmdResults_Click()
Dim Length, Width, Perimeter, Area As Integer
Length = (InputBox("Enter an Integer"))
Width = (InputBox("Enter an Integer"))
Area= Length*Width
Perimeter = 2*(Length + Width)
Print Area
Print Perimeter
End Sub
```

State the output generated given that Length = 15 and Width = 8 (4 marks)

b) i Construct a truth table for the OR logical operator. (4 marks)

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

c) Mashinani University allows applicants to apply for courses online. The application form 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 applicant types his/her name in the textbox, selects the appropriate option for the gender and then selects a course 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)

QUESTION FIVE (20 MARKS)

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

```
MessageBox ("The name of the student is ", VBOKCANCEL, &Name)
```

b) Write a Visual Basic program that would compute the sum of even integers between 20 and 30. Use the *Do While … loop* and attach the code to a command button. (4 marks)

c) State the differences between *do..loop until* and *do until … loop* statements. (4 marks)

d) A student created a program in visual basic, however the program did not compile.

i. Describe **three** types of errors that could have led to this scenario. (6 marks)

ii. Outline **three** functions that could be used to handle the errors. (3 marks)