



MACHAKOS UNIVERSITY

University Examinations for 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

DIPLOMA OF INFORMATION COMMUNICATION TECHNOLOGY (TVET)

2920/205: VISUAL PROGRAMMING

DATE: 16/4/2019

TIME: 8.30-11.30 AM

INSTRUCTIONS

Answer **Any five (5)** questions

All the questions carry twenty (20) marks each

This paper consists of SIX (6) printed pages

QUESTION ONE (20 MARKS)

- a) State **two** characteristics of an event as used in Visual programming. (2 marks)
- b) Describe **two** controls that are associated with files as used in Visual Basic. (4 marks)
- c) Outline the functions of the following components of an IDE:
 - i. Immediate window;
 - ii. Menu bar;
 - iii. Project explorer window. (6 marks)
- d) Differentiate between *implicit* declaration and *explicit* declaration as used in visual basic. (4 marks)
- e) Distinguish between an *array* and *control array* as used in Visual Basic. (4 marks)

QUESTION TWO (20 MARKS)

- a) Figure 1 shows a visual Basic window at designed time. Use it to answer the questions that follow.

The figure shows a Visual Basic window titled 'Form1'. Inside the window, there are four text boxes and one command button. The text boxes are labeled 'Enter Registration No' (containing '045'), 'Enter Name' (containing 'Mike'), 'Enter Hourly Rate' (containing '100'), and a 'Combo1' box. The command button is labeled 'ADD'. Arrows point from labels on the right to each of these controls: 'txtRegno' points to the '045' box, 'cboCountry' points to the 'Combo1' box, 'txtName' points to the 'Mike' box, 'txtRate' points to the '100' box, and 'cmdDisplay' points to the 'ADD' button.

- Write Visual Basic programs attached to a command click that will;
- Change the font color and font style of the value 'Mike' to red and italic respectively (2 marks)
 - Clear all the texts in the text boxes. (2 marks)
 - Add the following values to the combo box:
Kenya, Uganda, Tanzania, Sudan (3 marks)
 - Change the font size and background color of the information in the combo box to 18 and green respectively. Use a *with statement*. (3 marks)
- b) With the aid of an example, distinguish between the *name property* and the *caption property* as used in a visual basic program. (4 marks)
- c) Write a visual basic program that would prompt a user to enter the dimensions in meters of a colleague's rectangular playing field through the use of input boxes, the program should then compute the area covered by the playing field in hectares and display it through a message box. Attach the code to a command click event. Hint: 1 hectare = 10000 square meters. (6 marks)

QUESTION THREE (20 MARKS)

- a) State **two** disadvantages of using *variant data type* in Visual Basic programs. (2 marks)
- b) Write a visual basic program that would prompt the user to enter admission number, name and marks scored by a student in three subjects. The program should then compute the students average mark and output the admission number, name, total marks and average marks each separated by 5 tabs on a form. Attach the code to a command click event. (6 marks)
- c) State the property that could be used for the output in each of the following Visual basic controls.
- i. Textbox
 - ii. Label
 - iii. Picture box
 - iv. Combo box (4 marks)
- d) Outline the difference between *Do....loop while* and *Do while.....loop* as used in visual basic programming. (4 marks)
- e) Outline **four** date functions used in visual basic. (4 marks)

QUESTION FOUR (20 MARKS)

- a) Rewrite the following mathematical expression to its Visual Basic equivalent.
- $$P = \frac{AB(1 + B)^N}{(1 + B)^{N-1}}$$
- (2 marks)
- b) Assuming a visual basic environment, evaluate the expression.
- MyVal = $x \wedge y * a \bmod b \backslash c$ given that $x=5, y=3, a=2, b=15, c=5$ (2 marks)
- c) Write a visual basic program that would allow the user to type the name of a student in the textbook and select the sex of the student. The program then will add the name of the student in the appropriate list

(6 marks)

- d) A student created a visual basic program that could accept two integers through the use of text boxes and compute their sum. He entered values 10 and 40 and executed the program the result was 1040. State the correction needed for the program to produce the expected result. (2 marks)
- e) Sketch the output produced when the following visual basic statement is executed.
 Marks = InputBox(“enter a student mark”, “student mark”, 0) (2 marks)
- f) Write a visual basic program that would allow a user to select an option button either for a sphere or a circle. The program then computes the area of the respective figure through the use of appropriate functions. Attach the code to a command click event.
 Hint: area of sphere = $4\pi r^2$ and area of a circle = πr^2 (6 marks)

QUESTION FIVE (20 MARKS)

- a) Distinguish between *user defined* and *system defined* constants as used in Visual Basic programming. (4 marks)
- b) The table below shows letters with their corresponding messages. Use it to answer the questions that follow.

letters	Message
A	My name is Amina
B	I love playing ball games
C	Cat are my best pets
Any other letter	Not a valid letter

Write a Visual Basic program that will accept a letter through an input box and display the appropriate message through the use of a picture box control. Use an *if-else* statement.

(8 marks)

- c) Write a visual basic program that could display even numbers between 0 and 100. The program then computes and displays the sum of the numbers through a label. Attach the code to a command click event. (6 marks)

- d) Assuming a visual basic environment, evaluate the expression

Num = $a - b * \sqrt{c}/d$ given that $a = 2$, $b = 3$, $c = 25$, $d = 5$

(2 marks)

QUESTION SIX (20 MARKS)

- a) Outline **three** functions of a data grid control as used in Visual Basic. (3 marks)
- b) Distinguish between *multiselect* and *selected* properties associated with a list used in Visual Basic. (4 marks)
- c) Explain **three** typical properties associated with data bound controls as used in Visual Basic. (6 marks)
- d) With the aid of a flowchart, explain a for.....next loop. (3 marks)
- e) State the prefix used for each of the following visual basic controls:
- i. Option button
 - ii. Timer
 - iii. Drivelistbox
 - iv. Vscrollbar
- (4 marks)

QUESTION SEVEN (20 MARKS)

- a) Mr. Kelvin drives at 50 kilometers per hour. Write a Visual Basic program that will determine and display the distance he would cover in 14 hours and the time he would take to cover 410 km. Use a picture box to display the results, attach the code to a command click event. **HINT: $D=S \times T$** (6 marks)
- b) Explain **two** uses of comments in visual basic programs. (4 marks)
- c) Write the general syntax for a *function* as used in visual basic. (2 marks)
- d) Write a visual basic program that would prompt the user to input fees paid by five students. The program should then compute the total fees paid and output the results

through a message box. Attach the code to a command click event. Use the *Do While....loop*. (5 marks)

- e) Anita would like to use *procedures* to develop an application in visual basic. Outline **three** benefits she would achieve from this. (3 marks)

QUESTION EIGHT (20 MARKS)

- a) State the function of each of the following controls in a visual basic program;
- i. Pointer
 - ii. Frame
 - iii. Ole
 - iv. Combobox (4 marks)
- b) Distinguish between module level and local variable as used in a visual basic program. (4 marks)
- c) Explain giving a reason why it is important to set *Autosize* property of a picture box to true when designing programs in visual basic. (2 marks)
- d) With the aid of an example in each case, distinguish between *string* and *Boolean* data type in visual basic programs. (4 marks)
- e) Describe the function of each of the following features as used in Visual basic:
- i. Rdo table
 - ii. Data Access Object
 - iii. Open Database Connectivity. (6 marks)