



MACHAKOS UNIVERSITY

University Examinations for 2020/2021

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

SECOND YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (COMPUTER SCIENCE)

SCO 202: EVENT DRIVEN PROGRAMMING

DATE: 16/8/2021

TIME: 2:00 – 4:00 PM

INSTRUCTIONS:

Answer Question One and Any Other Two Questions

QUESTION ONE COMPULSORY) (30 MARKS)

- a) What do the following abbreviations stand for
- i) GUI (1 mark)
 - ii) IDE (1 mark)
 - iii) BASIC (1 mark)
- b) Name any TWO Controls found in the VB 2010 IDE (2 marks)
- c) Name any THREE elements found in Visual Basic 2010 IDE. (3 marks)
- d) Define the following terms
- i) Properties (2 marks)
 - ii) Events (2 marks)
 - iii) Methods (2 marks)
- e) Give TWO examples for each of the following:
- i) Properties (2 marks)
 - ii) Events (2 marks)
 - iii) Methods (2 marks)
- f) Consider the following code written in VB 2010 and answer the questions that follow
- ```
Dim counter , sum As Integer
For counter=5 to 100 step 10
sum+=counter
ListBox1.Items.Add (sum)
Next
```
- i) Write the output of the program (3 marks)
  - ii) Re-write the code using a Do....while statement (3 marks)
  - iii) Draw a flow-chart to represent this program (4 marks)

**QUESTION TWO (20 MARKS)**

- a) Convert the following mathematical equations to VB programming expressions
- i)  $\sqrt{x^2 + y^2}$  (3 marks)
  - ii)  $m^n$  (2 marks)
  - iii)  $(\sqrt{x^2 - 4ac}) / 2a$  (3 marks)
- b) Explain ALL the steps involved in creating a VB 2010 Application. (6 marks)
- c) The weekly pay for a worker is based on the hourly-rate times the number of hours worked. Overtime is computed by multiplying the extra hours worked with a rate of 1.5. Write down a method to compute the wage of a worker working overtime (6 marks)

**QUESTION THREE (20 MARKS)**

- a) Name any FOUR VB 2010 Data Types (4 marks)
- b) In a practical lesson for SST 202 course unit, students were asked to create an application in VB 2010 for a BMI Calculator. The following range of BMI values for the weight status was provided; Underweight = <18.5 Normal weight = 18.5-24.9 Overweight = 25-29.9 Obesity = BMI of 30 or greater.

Answer the following questions in view of this problem statement:

- i) Name the types of controls you will use for the problem. (2 marks)
- ii) How many of each control will you require for the problem? (3 marks)
- iii) How many variables would you need to declare (2 marks)
- iv) Draw the User Interface of the application (3 marks)
- v) Write the code you will require in the **click** event of the cmdAddbutton (6 marks)

**QUESTION FOUR (20 MARKS)**

- a) Define a Visual Basic 2010 function. (2 marks)
- b) Name any THREE Visual Basic 2010 math functions. (3 marks)
- c) Students were asked to solve a quadratic equation in VB 2010. Answer the following questions
- i) Outline an appropriate procedure to follow. (4 marks)
  - ii) Write down the algorithm that can be applied. (6 marks)
  - iii) Sketch the User Interface for such an application. (5 marks)

**QUESTION FIVE (20 MARKS)**

- a) Explain the following
  - i) Interface (2 marks)
  - ii) Window (2 marks)
  - iii) ActiveX Control (2 marks)
- b) Explain the two types of interface found in VB (4 marks)
- c) Write the code that can be used to create an application which will print the sum of all numbers between two input values (6 marks)
- d) Illustrate the solution for the above problem graphically (4 marks)