

UNIVERSITY EXAMINATIONS

SECOND SEMESTER, 2018/2019 ACADEMIC YEAR

EXAMINATION FOR BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY
BACHELOR OF BUSINESS MANAGEMENT IN INFORMATION TECHNOLOGY

COMP 329: VISUAL PROGRAMMING WITH VB .NET

STREAM: Y3S2

TIME: 11.00-1.00 PM

EXAMINATION SESSION: JAN-APRIL

YEAR: 9/04/2019

INSTRUCTIONS

- (i) **Question one is compulsory and any other two**
- (ii) **Do not write on the question paper**
- (iii) **Show your working clearly**

QUESTION ONE: (30 MARKS)

- a) Explain the .Net Framework of the Visual Studio.NET IDE. including its two main components. **(5 marks)**
- b) Explain the structured programming model of software development **(2 marks)**
- c) Visual Basic.Net is both object oriented and event driven: Explain **(4 marks)**
- d) Referring to the Visual Studio environment, what is the purpose of the following?
 - (i) Document window **(1 mark)**
 - (ii) Solution window **(1 mark)**
 - (iii) Properties window **(1 mark)**
 - (iv) Code editor **(1 mark)**
 - (v) Toolbox **(1 mark)**
- e) *Variable must be declared before they can be used.* What is your understanding of this statement? **(2 marks)**
- f) Mention two rules for naming variables **(2 marks)**

- g) Given the following scenario: Set up a form containing a Textbox, a Label and a Button. The text on the Label should ask the user to enter a name. Attach code to the Button so that when it is clicked, the Label displays the user's name.
- (i) Draw a GUI to represent the above scenario **(2 marks)**
 - (ii) Write down the properties that you would set for all the controls in the above GUI and their values. *(use the naming conventions for controls)* **(3 marks)**
 - (iii) Write down the appropriate click event procedure of the application. *Include comments in your code.* **(3 marks)**
- h) Explain the following the following type of error: syntax error. **(2 marks)**

QUESTION TWO: (20 MARKS)

- a) Describe in detail the following concepts of object oriented:
- (i) Algorithm **(1 mark)**
 - (ii) Class **(1 mark)**
 - (iii) Method **(1 mark)**
- b) Explain the following types of errors in programming: *logical errors* and the *runtime errors*. **(4 marks)**
- c) Write a VB.Net program using a suitable repetitive control structure to display all odd numbers between 1 and 10. (Include a GUI) **(4 marks)**
- d) A program prompts users for two numbers after which it calculates its product and average. The results of the product and average should each be displayed on the label control.
- (i) Draw a sketch of the GUI for the above program. **(2 marks)**
 - (ii) Write down the properties that you would set for all the controls in the above GUI and their values. *(use the naming conventions for controls)* **(3 marks)**
 - (iii) Write a VB.Net program to calculate the product and the average operations. **(4 marks)**

QUESTION THREE: (20 MARKS)

- a) Describe the following terminologies as used in VB.Net, giving an example of each
- (i) Objects **(1 mark)**
 - (ii) Event **(1 mark)**
 - (iii) Properties **(1 mark)**
 - (iv) Event procedure **(1 mark)**
- b) Write a VB.Net program using a suitable repetitive control structure to display all even numbers between 0 and 10. (Include a GUI) **(4 marks)**
- c) Write a VB. Net program to check whether a given number is an even number or odd number, and display meaningful messages depending on the output of the condition. (include a GUI) **(4 marks)**

- d) Given the following numbers 10 and 5, write a visual basic program to perform division on these two numbers when a button is clicked, and the results displayed on the message box object. (include a GUI) **(4 marks)**
- e) Describe the following types of variables, and with relevant examples, explain how they are declared in a program
- (i) String variables **(2 marks)**
 - (ii) Integer variables **(2marks)**

QUESTION FOUR: (20 MARKS)

- a) Highlight the use of the following controls in VB.NET.
- (i) Textbox **(1 mark)**
 - (ii) Checkbox **(1 mark)**
 - (iii) Label **(1 mark)**
 - (iv) Button **(1 mark)**
 - (v) List box **(1 mark)**
 - (vi) Picture box **(1 mark)**
- b) What is a constant variable? Write the correct syntax for declaring a constant type of variable. **(2 marks)**
- c) Explain one advantage of object oriented development approach to programming. **(2 marks)**
- d) Write a VB.net program to check whether a given number is a positive number, negative number or the number 0, and display meaningful messages depending on the output of the condition. (include a GUI) **(4 marks)**
- e) A health and fitness club has four levels of membership charges, based on the age of the member. 0-16 (Juniors) and 55-80 (Seniors) are both charged at half the 17-54 (Adult) rate of 250 dollars p.a. Members aged 81 or over (Honorary) are allowed in free.
- (i) Draw a GUI to represent the above scenario. **(2 marks)**
 - (ii) Using a select case structure, write a VB.net program that will ask for the member's age, and display the membership category and charges. **(4 marks)**

QUESTION FIVE: (20 MARKS)

- a) Explain the functions of the following form methods in VB.Net
- (i) Close() **(1 mark)**
 - (ii) Load() **(1 mark)**
- b) Define a loop. Write the syntaxes for the: *for...next loop* and the *do while loop*. **(3 marks)**
- c) Write a simple code to display the text "Programming Language" in a message box **(3 marks)**
- d) Write a VB.net program that will prompt a new student user for their full names and registration number. The program will then display a welcome message to the new student on a list box five times (include a GUI) **(4 marks)**

- e) Write a VB.net program that will accept two numbers from the user, perform multiplication operation on the numbers, and check whether the results of the operation is greater than 500 or now. Then display a meaningful message depending on the output of the condition.(include a GUI)

(4 marks)

- f) Using select case control structure, write a visual basic program that takes in the mark of a student, and displays the student's grade as the output when a button is clicked, using the criteria given below. Include comments in you program.

(4 marks)

0 – 39: F
40 – 49: D
50 – 59: C
60 – 69: B
70 – 100: A

