

#### MANICALAND STATE UNIVERSITY OF APPLIED SCIENCES

FACULTY OF APPLIED SCIENCES AND TECHNOLOGY

**INFORMATION SYSTEMS DEPARTMENT**

**INTRODUCTION TO PROGRAMMING**

**CODE: BSCIS124**

### SESSIONAL EXAMINATIONS

**MAY-JUNE 2019**

**DURATION: 2 HOURS**

**EXAMINER: MR C. KURANGA**

## INSTRUCTIONS

1. *Answer* ***Question 1*** *and* ***any other three*** *questions*
2. *Total marks 100*

**Question 1**

1. With the aid of an examples:
2. Describe a pseudo code; [6]
3. Differentiate among logic errors, runtime errors and design errors; [10]
4. Differentiate a sub procedure from a functional procedure; and [6]
5. Explain object-oriented programming paradigm. [6]
6. Explore any four data types supported by Visual Basic and illustrate how they are be declared. Also mention their uses. [8]
7. Differentiate a low-level language from a high-level language. [4]

**Question 2**

1. At a college, the tuition for a full-time student is $8000 per semester. It has been announced that the tuition will increase by 3% each year for the next 5 years.

Write a program with a loop that displays the projected semester tuition for the next 5 years. [10]

1. Write a program that asks the user to enter the monthly costs for the following expenses incurred from operating an automobile: loan amount, insurance, gas, oil, tires, and maintenance. The program should then display the total monthly cost of these expenses and the total annual cost of these expenses. [10]

**Question 3**

1. There are 3 seating categories at a stadium for a softball game. Class A seats cost $20, class B seats cost $15, and class C cost $10.

Write a program that asks how many tickets for each class of seats were sold and then displays the amount of income generated from ticket sales. [14]

1. A company has determined that its annual profit is typically 23% of total sales.

Write a program that asks the user to enter the projected amount of total sales, and then displays the profit that will be made from that amount. [6]

**Question 4**

Use a one-dimensional array to solve the following problem: A company pays its salespeople on a commission basis. The salespeople receive $200 per week, plus 9% of their gross sales for that week. For example, a salesperson who grosses $5000 in sales in a week receives $200 plus 9% of $5000, or a total of $650.

Write a program (using an array of counters) that determines how many of the salespeople earned salaries in each of the following ranges (assume that each salesperson’s salary is truncated to an integer amount):

a) $200–$299

b) $300–$399

c) $400–$499

d) $500–$599

e) $600–$699

f) $700–$799

g) $800– and over[20]

**Question 5**

1. Write a program that uses nested loops to draw this pattern:

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\*\* [8]

1. A customer in a store is purchasing 5 items.

Write a program that asks for the price of each item and then displays the subtotal of the sale, the amount of sales tax and the total. Assume the sales tax is 7%. [12]

**Question 6**

1. Give output of following sections of code.
2. Do

 If x Mod 5 = 0 Then

Listbox.add.items(x & “is divisible by 5”)

 Else

Listbox.add.items(x & vbTab)

 End If

 x += 1

 Loop While x <= 20

[7]

1. Dim product As Integer = 2

While product <= 1000

lstDisplay.items.add("{0} ", product)

product = product \* 2

 End While

lstDisplay.items.add ("Smallest power of 2 "& "greater than 1000 is {0}",\_ product) [6]

1. Debug and correct errors in the following code: [7]

Select age

Case Is < 0

txtBox.Text = “Child”

Case Is >= 13

txtBox.Text = “Teenager”

Case Is >= 21

txtBox.Text = “Young Adult”

Case Is >= 40

txtBox.Text = “Middle Age”

Case Is >= 65

txtBox.Text = “Old Person”

Else

txtBox.Text = Not Human

End

**END OF EXAM**