**COLLEGE OF BUSINESS PEACE LEADERSHIP AND GOVERNANCE**

**PROGRAMMING 1: CIS 202**

**END OF SECOND SEMESTER EXAMINATIONS**

**November 2018**

**LECTURER: Mr.Timothy Makambwa**

**DURATION: 3 HOURS**

## INSTRUCTIONS

Answer **ALL** the questions in **Section A** and any **Three questions from Section B** and each question has **20** marks. Total possible mark is **100.**

Start **each** question on a new page on your answer sheet.

The marks allocated to **each** question are shown at the end of the section.

## Section A (40 Marks)

Answer *all* Question in this Section

For Multiple Choice questions choose or select the correct answer/response. Each question 2 Marks

**1.** In VB.NET, the comment is a quote character (').
a. True   b. False

**2.** In VB.NET, the Console.ReadLine input statement is used to receive data from keyboard in a console program.
a. True  b. False

**3.** The Console.WriteLine output statement is used to print text on the screen with a new line.
a. True  b. False

**4.** Each VB.NET console program may have many Main sub- procedures with the same signatures (name, number of arguments, types of arguments, etc.)
a. True   b. False

**5.** To declare an integer variable in VB.NET language, which one of the following statements is true?
a. Dim x As Single    b. Dim x As Integer   c. x As Integer

**6.** Which of the following is not a numerical type?
a.Integer  b.Char  c.Single d.Date  e.Double

**7.** In VB.NET language, Which one is not the integer value?
a.12  b.'23'  c.10  d.100

**8.** What is the type of each of the following constants?
a.10  b.'2'  c.10.7  d."12"

**9.** What is the type of each of the following constant?
a."Dara"  b.'2.9'  c."10.7"  d.13.9  e.'\a'

**10.** In VB.NET, which of the following statements about increment are not valid?
a. a++  b.a=a+1  c. a+=1 d. ++a

**11.** Which of the following are not arithmetic operators?
a. +  b.-  c. >=  d. Mod

**12.** If originally x=10, what is the value of x after each of the expressions:
a.x=x+1   b.x+=1

**13.** If x=10 and sum=0, what is the value of sum after each of the expressions:
a.sum-=x   b.sum=x Mod 2

**14.** If originally x=10 what is the value of each of the expressions:
a.x-=1   b.x=x-1

15. If originally x=10 and sub=0 what is the value of sub after each of the expressions:
a.sub=-x+1     b.sub-=x

16. Which of the following is not a logical operator in VB.NET language?
a.&   b.And   c.Or   d.Not

17. Which of the following is not a comparison operator in VB.NET language?
a.>   b.<=   c.=   d.==

18. There are two different ways to implement multi selections in VB.NET language. They are
a. else-if and switch case     b. if...else and select case
c. else-if and case

19. Evaluate the following expressions to true or false
a. Not(3=4-1)   b. 5>=(1+6)-4   c.5+1=6 Or 8-1>4
d.5>=6 Or 1<8 And 9>7

20. if originally x=10,y=5, and z=2, evaluate the following expressions to true to false:
a.x+1<>y-2   b. Not(x+y>20)
c.(x+1=y) Or y-1>5   d.z+1>=3 Or x+1<z*10 And y+3>7


**SECTION B( 60 Marks)**

Answer any three questions from this Section

**21.**

   a)  The discount rate is 10% for the quantity purchased between 100 and 120 units, and 15% for the quantity purchased greater than 120 units. If the quantity purchased is less than 100 units, the discount rate is 0%. See the example output as shown below:

     Enter unit price: 25

     Enter quantity: 110

     The revenue from sale: 2475.0$

     After discount: 275.0$(10.0%)

     Write a Visual Basic program to solve the problem.                    [10]

   b)  Write a program to determine a student's grade. The program will read three types of scores(quiz, mid-term, and final scores) and determine the grade based on the following rules:
     -if the average score >=90% =>grade=A
     -if the average score >= 70% and <90% => grade=B
     -if the average score>=50% and <70% =>grade=C
     -if the average score<50% =>grade=F

     See the example output below:

     Quiz score: 80

Mid-term score: 68

Final score: 90

Your grade is B.

[10]

**22**. Write the VB codes that will produce the following outputs.

a)

```
*******

******

*****

****

***

**

*
```

b)

```
1******

12*****

123****

1234***

12345**

123456*

1234567
```

[10+10]

**23.**

a) Write a VB.Net program that adds the even numbers between 100 to 999 [7]

b) Write a VB.Net application that calculates the sum of integers from 1 to 10. Use the **while** structure to loop through the calculation [6]

a) Write VB.NET program to sum the odd numbers 1 to 99 using *for* structure. Assume the integer variables **sum** and **count** have been declared. [7]

**24.**

When the code is compiled and executed, it produces the following result:

Value of a: 10

Value of a: 11

Value of a: 12

Value of a: 13

Value of a: 14

Value of a: 15

Value of a: 16

Value of a: 17

Value of a: 18

Value of a: 19

Write VB.Net programs that will give the same output using the following control structures:

| | | |
|---|---|---|
| a) | While loop | [5] |
| b) | For loop | [5] |
| c) | Do....while loop | [5] |
| d) | Do Until loop | [5] |

**25.**

a)

## Writing a Simple Multiplication Program

In this program, you insert two text boxes, three labels and one button. The text boxes are for the user to enter numbers, the label is to display the multiplication operator and the other label is to display the equal sign. The last label is to display the answer. The run time interface is shown in Figure below:

```
┌────────────────────────────────────────────────────┐
│ ⚏ Multilication                          ▭  ▢   ✕    │
├────────────────────────────────────────────────────┤
│                                                      │
│                                                      │
│                                                      │
│                                                      │
│     5          X    4          =   20                │
│                                                      │
│                                                      │
│                                                      │
│                                  ┌──────────┐        │
│                                  │ Calculate │       │
│                                  └──────────┘        │
│                                                      │
└────────────────────────────────────────────────────┘
```
[10]
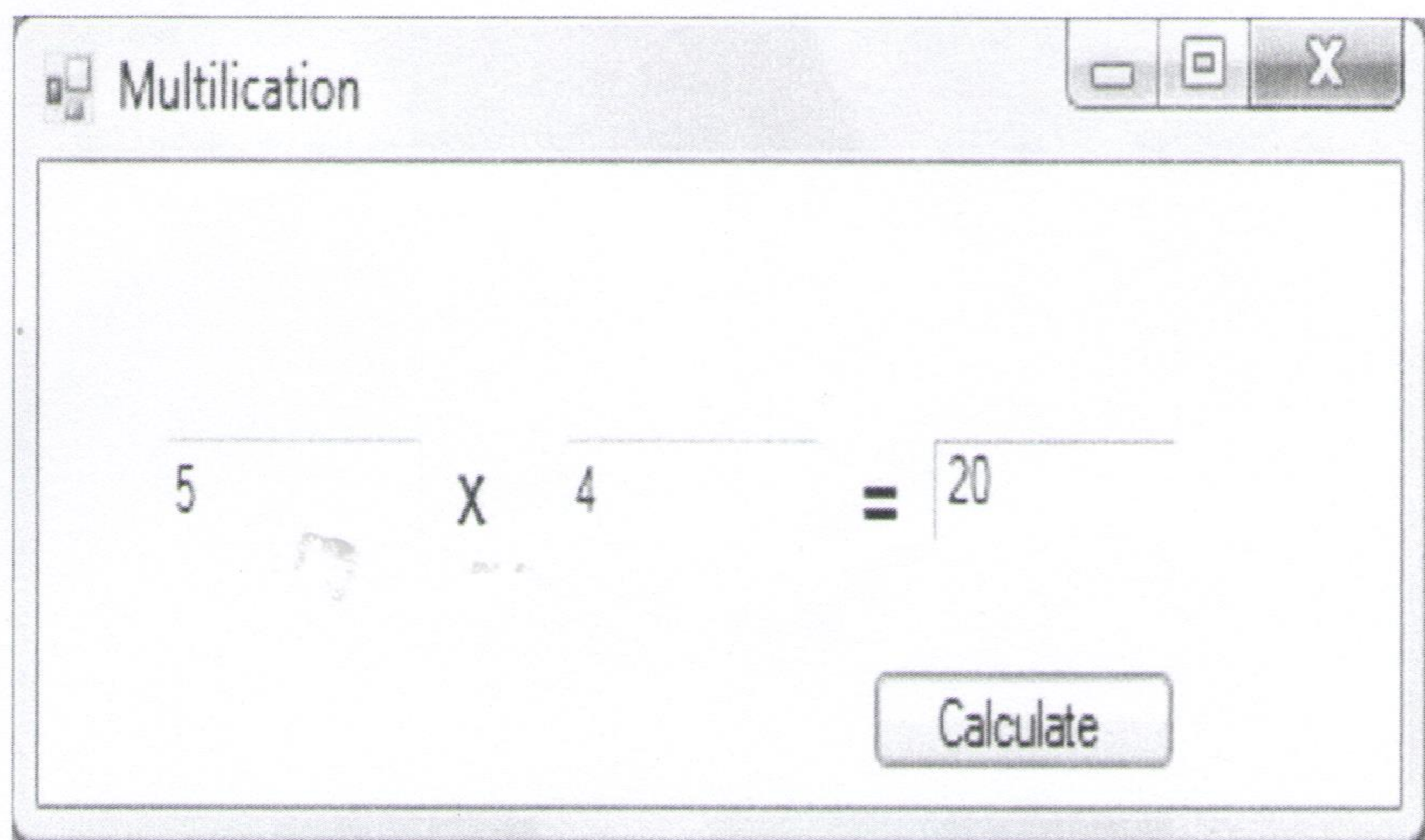
b) Write a program that will compute the following:
    i.    1000-100-95................5
    ii.   10+20+30+.................1000

[5+5]

**26.**

Write Mathematical functions that compute the following using code snippets:

    a)  Exponential
    b)  Absolute value
    c)  Fix
    d)  Round
    e)  Natural Logarithm

[20]

**END OF PAPER**