



UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA
FIRST SEMESTER EXAMINATIONS, MAY 2017

COURSE NO: CE 380
COURSE NAME: PROGRAMMING WITH VISUAL BASICS
CLASS: CE III **TIME:** 3 HRS

Name: _____ Index Number: _____

SECTION A: Carefully read each question and then circle the letter of the correct answer

1. What's wrong with the statement: while ((i < 10) and (i > 24))
 - a. logical operator "and" cannot be used in a test
 - b. while loop is an exit-condition loop
 - c. test condition is always false
 - d. test condition is always true

2. What is the proper syntax when using a message dialog box?
 - a. MessageBox.Show("Hi there", "Hi")
 - b. MessageBox.Show(Hi there, Hi)
 - c. MessageBox.Show "Hi there", "Hi"
 - d. messageBox.Show Hi there,

3. Which looping process is best used when the number of iterations is known?
 - a. for
 - b. while
 - c. do while
 - d. For any looping process, the number of iterations must be known

4. In a group of nested loops, which loop is executed the most number of times?

- a. the outermost loop
- b. the innermost loop
- c. All loops are executed the number of times
- d. Cannot be determine without knowing the size of the loop.

5. Which looping process checks the test condition at the end of the loop?

- a. for
- b. while
- c. do while
- d. nested

6. A user defined function declared as void func () will return _____

- a. An integer
- b. A float
- c. No value
- d. A character

7. Which of following is not a logical operator?

- a. &&
- b. ||
- c. !
- d. >

8. Which of the following is a valid construction of a variable name?

- a. 174ce
- b. ce 174
- c. ce_174
- d. 174_ce

9. All the following are rules to observe in naming variables in Visual Basic except

.....

- a. The first character in the variable name must be an alphabet or underscore.
- b. Variable names are case-sensitive.
- c. No commas or blanks are allowed within a variable name.
- d. Other special symbols aside the underscore can be used in a variable name.

10. Which of the following is false about pseudo codes?
- a. Pseudo code is text based
 - b. Pseudo codes can neither be compiled
 - c. nor executed
 - d. Pseudo codes are language dependent
11. The language used by the processor is called
- a. Executable code
 - b. Compiler code
 - c. Machine code
 - d. Assembly code
12. The first programming language ever used is
- a. Machine language
 - b. FORTRAN
 - c. COBOL
 - d. Assembler
13. Which of the following statements is true?
- a. Both BASIC and C++ are compiled languages
 - b. BASIC is compiled but C++ is interpreted languages
 - c. Both BASIC and C++ are interpreted languages
 - d. C++ is a compiled language but BASIC is an interpreted language
14. C, C++ and Java are among thegeneration of programming languages.
- a. Second
 - b. Third
 - c. Forth
 - d. Fifth
15. What is an algorithm?
- a. The step by step translation of codes to the language the processor understands
 - b. The sequential steps used in solving a given problem
 - c. The sequential steps used to maintain and debugging a program source code
 - d. None of the above

16. To continue a long statement on another line, use:
- a. An underscore character
 - b. An ampersand character
 - c. Ctrl + Enter
 - d. A space followed by an underscore character
17. What is the correct statement when declaring and assigning the value of 100 to an integer variable called numPeople?
- a. Dim numPeople = "100"
 - b. Dim numPeople = Int (100)
 - c. numPeople = 100
 - d. Public numPeople As Integer = 100
18. In Visual Basic, we work with objects that have _____
- a. Programmer preference
 - b. Project, solutions, and procedures
 - c. Classes, actions, and disciplines
 - d. Properties, methods, and events
19. Visual Basic is a (n) _____ programming language.
- a. Procedural
 - b. Object-Oriented
 - c. Methodical
 - d. semantic
20. The _____ holds information about the solution and the projects it contains. This is the file that you open to work on or run your project.
- a. The .pj file
 - b. The .rsc file
 - c. The .sln file
 - d. The .vb fi

SECTION B

*Carefully read each question and then indicate by writing whether the statements provided are **TRUE** or **FALSE***

1. A Function may return up to two values. _____
2. A variable declared inside an event procedure is said to have local scope. _____
3. One may use an If block within a Select Case block. _____
4. The body of a For...Next loop in Visual Basic will always be executed once no matter what the initial and terminating values are. _____
5. Suppose you want to write a procedure that takes three numbers, num1, num2, and num3; and returns their sum, product, and average. It is best to use a Function procedure for this task. _____
6. A string is a data type that can be used to declare a text of maximum 10 million characters. _____
7. Dynamic variables are not reinitialized each time Visual basic invokes a procedure and thus retains or preserves value even when a procedure ends. _____
8. Debug window is the same as code window. _____
9. Object is not a datatype in Visual Basic _____
10. The statement Dim int1, int2, int3 As Integer declares all variables as integer datatype? _____
11. A byte datatype can store values 0 to 256? _____
12. A variable declared as a Long datatype takes up 4 bytes of memory. _____
13. A variable can only be declared as STATIC only in a sub procedure? _____
14. A function declared in a programme should always have at least one argument/parameter? _____
15. This statement declares a dynamic array called Spicy: **Dim Spyse (, 10) As Integer.** _____

16. In a single VBA program one can define a function, sub procedure and a class? _____
17. In VBA code a parameter can be passed on to a sub procedure? _____
18. The Boolean data type takes up 4 bytes of memory space? _____
19. In VBA the datatype the takes up the maximum memory space is the variant datatype?

20. A class in VBA is define as an instance of an object? _____

[20 MARKS]

SECTION C

Answer all questions:

1. Write the correct statements declaring a multi-dimensional array that can be represented as shown below using Visual Basic language:

	Scope			
0	Thomas			
1		8		
2				
3			15	
4	-2			
5				James

[6 MARKS]

2. Provide the Visual Basic code statements that can populate cells in an excel sheet with the content of the array represented below.

	MyArray			
	0	1	2	3
0	"Thomas"	"Kwame"	"Jerry"	"Moan"
1	"Noah"	"Joe"	"Saint"	"Ben"
2	"Bruno"	"Tello"	"Dyne"	"Silly"

[6 MARKS]

3. Indicate and explain why the Visual Basic code might be *valid* or *invalid*?

```
Sub Main()  
    Dim myName As String = "thom"  
    Dim cost As Integer = 20  
    Dim profit As String = myName + cost  
    Console.WriteLine(profit)  
    Console.ReadLine()  
End Sub
```

[3 MARKS]

4. Consider and under study the following section of Visual Basic code:

```
Sub Main()  
    Dim a As Integer  
    Dim b As Integer  
    Dim c As Integer = 5  
    Dim arrayNames() As String = {"Marry", "John", "Thomas", "James", "Peter", "Edward"}  
    For i = 0 To arrayNames.Length() - 1  
        arrayNames(c) = arrayNames(i)  
        c = c - 1  
    Next i  
  
    Console.WriteLine(arrayNames(arrayNames(a - 1).Length() - b))  
    Console.WriteLine(arrayNames(arrayNames(b).Length() - a))  
    Console.WriteLine(arrayNames(arrayNames(5).Length() - (b - a)))  
    Console.WriteLine(arrayNames(arrayNames(a).Length() - 2))  
    Console.WriteLine(arrayNames(arrayNames(b).Length() - 2))  
    Console.ReadLine()  
End Sub
```

What will the output on the console be if the variables **a** and **b** have the following initial values:

I. $a = 3$ and $b = 4$: _____

II. $a = 5$ and $b = 2$: _____

III. $a = b = 3$: _____

IV. $a = 2$ and $b = 0$: _____

V. $a = b + 1$ and $b = 3$: _____

[20 MARKS]

5. A certain grade of steel is graded according to the following conditions:

- (1) Hardness must be greater than 50
- (2) Carbon Content must be less than 0.7
- (3) Tensile Strength must be greater than 5600

The grades are as follows:

Grade is 10 if all three conditions are met

Grade is 9 if conditions (i) and (ii) are met

Grade is 8 if conditions (ii) and (iii) are met

Grade is 7 if conditions (i) and (iii) are met

Grade is 6 if one condition is met

Grade is 5 if none of the conditions are met

Write a Visual Basic program using the visual studio editor which will require the user to give values of Hardness, Carbon Content and Tensile Strength of the steel under consideration and output the grade of the steel.

[25 MARKS]