



UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA

FIRST SEMESTER EXAMINATIONS, NOV/DEC 2018

COURSE NO: MN/MR/GL/GM/PE/ES/MC 351

COURSE NAME: COMPUTER PROGRAMMING

CLASS: MN/MR/GL/GM/PE/ES/MC III

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TIME: 2 HOURS

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
- The first character in the variable name must be an alphabet or underscore.
 - Variable names are case-sensitive.
 - No commas or blanks are allowed within a variable name.
 - Other special symbols aside the underscore can be used in a variable name.
10. Which of the following is false about pseudo codes?
- Pseudo code is text based
 - Pseudo codes can neither be compiled nor executed
 - Pseudo codes are language dependent
11. The language used by the processor is called
- Executable code
 - Compiler code
 - Machine code
 - Assembly code
12. The first programming language ever used is
- Machine language
 - FORTRAN
 - COBOL
 - Assembler
13. Which of the following statements is true?
- Both BASIC and C++ are compiled languages
 - BASIC is compiled but C++ is interpreted languages
 - Both BASIC and C++ are interpreted languages
 - C++ is a compiled language but BASIC is an interpreted language
14. C, C++ and Java are among thegeneration of programming languages.
- Second
 - Third
 - Forth
 - Fifth
15. What is an algorithm?
- The step by step translation of codes to the language the processor understands
 - The sequential steps used in solving a given problem
 - The sequential steps used to maintain and debugging a program source code
 - None of the above
16. To continue a long statement on another line, use:
- An underscore character
 - An ampersand character
 - Ctrl + Enter
 - 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?
- Dim numPeople = "100"
 - Dim numPeople = Int (100)
 - numPeople = 100
 - Public numPeople As Integer = 100
18. In Visual Basic, we work with objects that have _____
- Programmer preference
 - Project, solutions, and procedures
 - Classes, actions, and disciplines
 - Properties, methods, and events
19. Visual Basic is a (n) _____ programming language.
- Procedural
 - Object-Oriented
 - Methodical
 - semantic

20. Which of the following executes program statements after which it has to return a value?
- a. Sub procedure
 - b. class
 - c. function
 - d. module

SECTION B [20 Marks]

*Carefully read each statement and then indicate by writing whether the following 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 statement** within a nested loop.
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. A **while loop** is a convenient way to traverse the contents of an array.
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. Like other variables, an array variable can be local, static local, or global?

SECTION C

(Answer all questions)

1. Provide a single declaration statement that declares an integer array named *list* that contains the values 45, -3, 16 and 8? [4 MARKS]

2. Provide the VB.Net code that defines a stack called **names** which contain the values Joe, Marry, Peter, Noah and Piers? [5 MARKS]

3. Given the declaration

Dim List (10) (5) As String

a. What expression represents the very first element of list? [3 MARKS]

b. What expression represents the very last element of list? [3 MARKS]

c. Write the VB.Net code fragment that prints out the contents of list. [10 MARKS]

d. Is the expression *list (9)(6) = "Hello"* legal or illegal? [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. Given the array declaration

Dim ARR () As Integer = {3, -3, 5, 2, -1, 2}

Write VB.Net code that implements a function called *sum_positive* (**ARR**) that adds up all the *positive* values in an array of integers.

For example, if array **ARR** contains the elements 3, -3, 5, 2, -1, and 2, the call **sum_positive (ARR)** would evaluate to 12, since $3 + 5 + 2 + 2 = 12$. The function returns zero if the array is empty.

[12 MARKS]

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