NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF SOFTWARE ENGINEERING

QUALIFICATION: BACHELOR OF COMPUTER SCIENCE, BACHELOR OF INFORMATICS	
QUALIFICATION CODE: 07BCMS, 07BAIT	**LEVEL:** 5
COURSE: INTRODUCTION TO COMPUTING	**COURSE CODE**: ICG511S
DATE: JULY 2023	**PAPER:** THEORY
DURATION: 3 HRS	**MARKS:** 75

SUPPLEMENTARY / SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	**Ms. NDINELAGO NASHANDI**
MODERATOR:	**Mr. PETER GALLERT**

THIS QUESTION PAPER CONSISTS OF 7 PAGES
(Including this front page)

INSTRUCTIONS TO STUDENTS:

1. Read all the questions, passages, scenarios, etc., carefully before answering.
2. Answer all the questions.
3. Number each answer clearly and correctly.
4. Write neatly and legibly.
5. Making use of any crib notes may lead to disqualification and disciplinary action.
6. Use the allocated marks as a guideline when answering questions.
7. Looking at other students' work is strictly prohibited.
8. This paper consists of six **(6)** pages including the cover page.

SECTION A: Multiple choices and True and false Questions [10 Marks]

- *Answer all the questions in the provided booklet.*
- *The section consists of 10 questions.*

1. 1 == 1 OR 2 != 1 evaluate to:
   A. True
   B. False

2. Given the following pseudocode what will be the output:

```
X=10
If (x>7) then
Display "Inside the if"
Else
Display "Inside the else"
End if
Display "All done"
```

   A. Inside the if
      Inside the else
      All done
   B. Inside the if
      All done
   C. Inside the else
      All done
   D. Inside the if
   E. All done

3. To repeat a task several times we use
   A. Input statement
   B. If statement
   C. Loop statement
   D. Output statement
4. Which one of the following is a valid assignment statement?
   A. salary==200
   B. isEmpty=true
   C. "John"=studentName
   D. Name=John
   E. None of the above

5. Pseudocode is a _____ representation of algorithms.

   A. Graphical
   B. Textual
   C. Verbal
   D. Visual
6. What does the following expression evaluate to;
   firstNumber=4, secondNumber=6
   If((NOT(firstNumber == secondNumber)) AND firstNumber > secondNumber)
   A. True
   B. False

7. A DO WHILE Loop performs at least one an iteration before testing its condition.

   A. True
   B. False

8. A loop that is inside another loop is called a multidimensional loop
   A. True
   B. False

9. Parameter is a data that you pass to the function during a function call.
   A. True
   B. False

10. Statements in function definition can be executed without a function call.
   A. True
   B. False

SECTION B: Structured Questions [65 Marks]

- *Answer all the questions in the provided booklet.*
- *The section consists of 7 questions.*

1. Create an employee record "employee" to store the following details of an employee name, age, and salary. Further create employee1 that makes reference to the employee record and print out the salary of employee1. **[5 marks]**

2. Unnest the following nested if statement: **[3 Marks]**

```
If (age>=18) THEN
 If (citizenship==" Namibian") THEN
 Display "you are eligible to vote".
End IF
END IF
```

3. Rewrite the following while loop with a DO WHILE Loop **[3 Marks]**

```
i=0
While(i<10)
Display i
i=i+1
END While
```

4. Given the following pseudocode, convert it into an equivalent flowchart. **[10 Marks]**

```
Start
count = 0, sum = 0
prompt user for a number
get num
WHILE (num !=0)
sum = sum + num
count = count + 1
prompt user for the number
get num
END While
average = sum/count
display average
END
```

5. Given the following pseudocode, convert the linear if statement into a case structure.

[11 Marks]

```
Start
Prompt the user for dayOfTheWeek
Get dayOfTheWeek
        if(dayOfTheWeek = =1)
        display "Monday!"
        else if (dayOfTheWeek = =2)
        display " Tuesday!"
        else if (dayOfTheWeek = =3)
        display " Wednesday!"
        else if (dayOfTheWeek = =4)
        display " Thursday!"
        else if (dayOfTheWeek = =5)
        display "Friday!"
        else if (dayOfTheWeek = =6)
        display "Saturday!"
        else if (dayOfTheWeek = =7)
        display "Sunday!"
        else
            display " Invalid Day of the week!"
end
```

6. Create a function named mileToKM(). The function should take in a value in miles per hours as the speed measured by the car's speedometer. Convert that measurement to kilometres and alert the driver if he or she is travelling more than 90 km/hr. use 1 mile = 1.85 **kilometres [9 marks]**

7. Write a pseudocode to calculate and print the electricity bill of a given customer. The customer ID, name, and unit consumed by the user should be captured from the keyboard to display the total amount to be paid to the customer. The charge is as follow: **[14 Marks]**

Unit	Charge/unit
Up to 199	1.20
200 and above but less than 400	1.50
400 and above but less than 600	1.80
600 and above	2.00

8. Create a pseudo-code that takes the total number of students in a class and their corresponding name and marks for the supplementary test. The program must store these values in two arrays. Afterwards the pseudocode should display the student's name and marks of students who marks is >50. **[10 Marks]**

********** End of the Paper **********