



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: JUNE 2023	PAPER: THEORY
DURATION: 3 HRS	MARKS: 75

FIRST 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 seven (7) 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. Select the correct answer for the algorithm displayed below.

```
function1(number){  
    total = number + 25  
    return total  
  
    }  
Start  
  
Display function1(7)  
  
end
```

- A. 25
- B. Error
- C. 32
- D. 7

2. Syntax of accessing the first element with the array a:

- A. A[0]
- B. A{0}
- C. A(1)
- D. A[1]

3. Which data type is used to store the following value: '5'
- A. integer
 - B. string
 - C. numbers
 - D. character
4. Select the correct function call of function personal() given below.

```
personal(name, age){  
    display (name, age)  
}
```

- A. personal("Anna", 16)
 - B. personal(16,"Selma")
 - C. personal(age=16, name="Anna")
 - D. personal()
5. Local variables are defined in?
- A. Functions
 - B. If statement
 - C. On top of the pseudocode
 - D. In the loop
6. In a flowchart, the input and output are represented by _____?
- A. diamond
 - B. Rectangle
 - C. Parallelogram
 - D. A circle
7. What does the following expression evaluate to,
- ```
x=30, y=8
if(NOT(x<y))
```
- A. True
  - B. False

8. While comparing two variables, their datatypes / format should be the same.
- A. True
  - B. False
9.  $x = x + 1$  and  $x += 1$  and  $x++$  all accomplish increment
- A. True
  - B. False
10. Sequential, selection and iterative control are all based on a given condition.
- A. True
  - B. False

## SECTION B: Structured Questions [65 Marks]

1. Convert the following if statement into a nested if statement: [3 marks]  
  
If (age>=18) and (citizenship==" Namibian") THEN  
  Display "you are eligible to vote"  
End if
  
2. Identify the inputs, process and outputs for a pseudo code that should calculate a running sum. A user will enter numbers that will be added to the sum and when a negative number is encountered, stop adding numbers and write out the result [4 Marks]
  
3. Rewrite the following pseudocode by replacing the case structure with a linear if statement: [ 6 Marks]  
  start  
  Prompt the user for grade.  
  Get grade.  
  case of (grade)  
    "A": display "Excellent!"  
    "B": display " Very Good!"  
    "C": display " Well done!"  
    "D": display " You Passed!"  
    "F": display "Better try again!"  
  Default: display " Invalid Grade!"  
  End Case  
  End

4. Convert the following pseudo code into a flowchart: [10 Marks]

*Start*

*i=0*

*Do*

*Prompt user for a number*

*get num*

*if(num!=0)then*

*if(num>0)then*

*display "number is positive"*

*else*

*display "number is negative"*

*else display "number is zero"*

*i=i+1*

*while(i<100)*

*end While*

*END*

5. Write a pseudo code that get a mark for the ICG test for each student and print out the grade and grade description according to the table below [20 marks]

| <b>Marks</b> | <b>Grade</b> | <b>Grade Description</b> |
|--------------|--------------|--------------------------|
| 80 - 100     | A            | Distinction              |
| 70 - 79      | B            | Very Good                |
| 60 - 69      | C            | Good                     |
| 50 - 59      | D            | Satisfactory             |
| 0 - 49       | F            | Failed                   |

6. Write a pseudo code that read an array of integers and print out how many times a given element exists in it. [9 Marks]
7. Create a function named **oddNumbers()** that takes in array of integers and return sum of all the odd numbers within the array. Provide a function call as well. [13 marks]

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