



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF COMPUTING AND INFORMATICS
DEPARTMENT OF COMPUTER SCIENCE**

QUALIFICATION: BACHELOR OF COMPUTER SCIENCE, BACHELOR OF INFORMATICS	
QUALIFICATION CODE: 07BCMS, 07BAIT	LEVEL: 5
COURSE: INTRODUCTION TO COMPUTING	COURSE CODE: ICG511S
DATE: JULY 2022	PAPER: THEORY
DURATION: 2 HOURS	MARKS: 60

SECOND OPPORTUNITY / SUPPLEMENTARY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Ms N. NASHANDI Mr S. TJIRASO Mr S. MUCHINENYIKA Ms R. IIPINGE Mr R. MUSUTUA Mr H. KAVIMAKA
MODERATOR:	Mr P. GALLERT

INSTRUCTIONS
1. Answer ALL the questions. 2. Read all the questions carefully before answering. 3. Number the answers clearly

THIS QUESTION PAPER CONSISTS OF 7 PAGES
(Including this front 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. What is the output of the following statement?

Print $7 * (-9/3) + 3$

- A. 69
- B. 24
- C. -18
- D. 7

2. The following formula is used to calculate the area of the circle.

If your program begins with the following code fragment;

`r=4, pi=3.14, area=0`

Which lines of code will successfully calculate the area of the circle?

- A. `area = pi + (r * r)`
- B. `area = (pi * r)2`
- C. `A = pi r2`
- D. `area = (r * r) * pi`

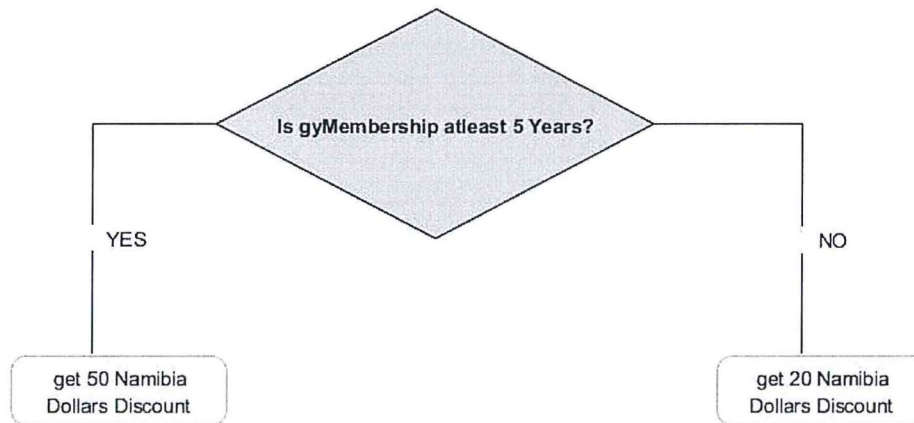
3. Which **one** of the following is **NOT** a valid variable name?

- A. `studentCasing`
- B. `@studentName`
- C. `_studentName`
- D. `student_name`

4. _____ is a set of actions executed to verify a particular feature or functionality of your software application.

- A. Software bugs
- B. Test cases
- C. Vulnerability
- D. Functional requirements

5. Mr. Amadhila owns a Gym and wants you to implement for him a program to calculate membership fees based on the flowchart below.



You must implement the logic depicted in the flowchart. Use the variables, **gyMembership**, **payableAmount**.

Which **one** of the code snippets below correctly implements the logic in the flowchart?

- A.

```
if (gyMembership = 5)
    payableAmount=payableAmount - 50
else
    payableAmount=payableAmount - 20
```
- B.

```
if (gyMembership ≥ 5)
    payableAmount=payableAmount - 50
else
    payableAmount=payableAmount - 20 Abstraction
```
- C.

```
if (gyMembership > 5)
    payableAmount=payableAmount - 50
else
    payableAmount=payableAmount - 20
```
- D.

```
if (gyMembership ≥ 5)
    payableAmount=payableAmount - 20
else
    payableAmount=payableAmount - 50
```

6. What does the following expression evaluate to?
firstNumber=3, secondNumber=1
If ((NOT(firstNumber == secondNumber)) AND firstNumber > secondNumber)
- A. True
 - B. False
7. Loose cohesion is recommended for a good program design.
- A. True
 - B. False
8. A nested if statement cannot always be replaced with a logical operator.
- A. True
 - B. False
9. Encryption is one of the security concepts
- A. True
 - B. False
10. Boolean values can be enclosed in double quotes or " "
- A. True
 - B. False

SECTION B Structured Questions [50 Marks]

- Answer all the questions in the provided booklet.
- The section consists of 5 questions.

1. Given the following problem:

A user wants to divide first number by the second number and print the result to the screen.

NOTE: division by Zero is not allowed (second number should not be zero (0))

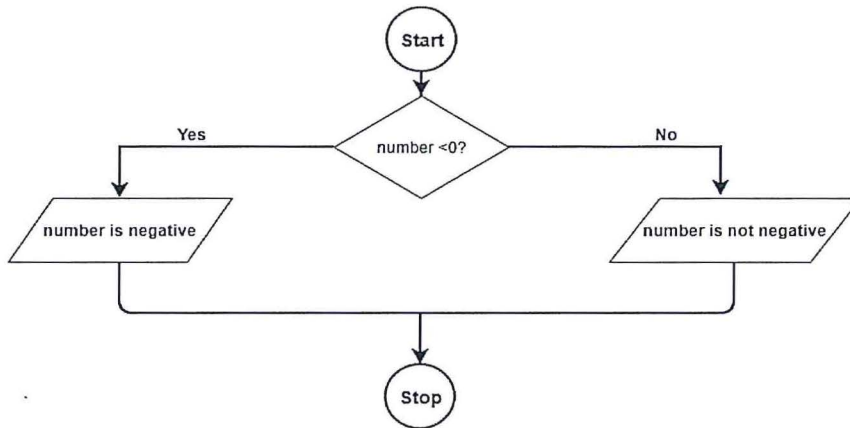
a. Identify the inputs, process and outputs [5 Marks]

b. Further create a flowchart for the above-mentioned problem (Section B, Question 1(a)). [10 marks]

2. A programmer for Aisha Beauty Salon is developing a program to calculate discount pricing for bulk beauty product orders. Write an algorithm in pseudocode that calculates and displays the cost price of beauty products after deduction of discount using this pricing table. The program prints “no discount” for any other item quantity not specified in the pricing table. [10 Marks].

Item quantity range	Discount
10-49	10%
50-99	15%
100-199	17%
200 or More	20%

3. Given the following flowchart, convert it into the equivalent pseudocode. [5 marks]



4. Given the following pseudocode, convert the linear if statement into a case structure. [10 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!"
endif
```

```
endif
```

```
endif
```

```
endif
```

```
endif
```

```
endif
```

```
end
```

5. Create a pseudocode that will ask for the age of all students in your tutorial group and store it in an array, `age[]`. The program should then print the age of the oldest student in the group. Assume that your tutorial group consists of 50 students. **[10 Marks]**

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