NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE

QUALIFICATION: BACHELOR OF COMPUTER SCIENCE, BACHELOR OF COMPUTER SCIENCE IN CYBER SECURITY AND BACHELOR OF INFORMATICS	
QUALIFICATION CODE: 07BACS, 07BCCS, 07BAIF	**LEVEL:** 5
COURSE: PROGRAMMING 1	**COURSE CODE:** PRG510S
DATE: NOVEMBER 2022	**PAPER:** THEORY
DURATION: 2 HOURS	**MARKS:** 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
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MODERATOR:	**MR SIMON MUCHINENYIKA**

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

THIS QUESTION PAPER CONSISTS OF 4 PAGES
(Excluding this front page)

PERMISSIBLE MATERIALS

1. NON-PRGRAMMABLE CALCULATOR

SECTION A: TRUE OR FALSE

This section consist of 20 questions. Answer all the questions
Each correct answer is allocated 2 Marks
Write True or False for Questions 1 to 20.

1. All while loops repeat the associated body less than once. **[2 Marks]**
2. Package statement is not allowed on VPL elearning platform **[2 Marks]**
3. A sequence of statements to a problem when written in a language that can easily be understood by people and not by computers is called a program **[2 Marks]**
4. All computers only understand one language known as machine language **[2 Marks]**
5. Line 1: // This is a sample program
   Line 2: /* This is a plagiarism comments that that requires you
   to insert them on top of VPL */
   Line 2 above is an inline comments and Line 1 above is a multiline comment. **[2 Marks]**
6. The following are all valid identifier names: *First_name, mySchool, package* **[2 Marks]**
7. The Java statement: *Cdev = N1 + N2 /K* is not the same as *cdev = n1 + n2/k* **[2 Marks]**
8. The output of running: *int C=4, D=7; D--; System.out.println(C*D); is 24* **[2 Marks]**
9. The output of *5+7*8* using precedence operator rule is equal to: 96 **[2 Marks]**
10. The output of *(8+3)-27/3* using precedence operator rule is equal to: 2 **[2 Marks]**
11. In java the statement *sum++* is the same as *sum=sum-1* **[2 Marks]**
12. Exception is an indication of reading and writing to a file **[2 Marks]**
13. Division by 0 or index out of array range throws an exception handling **[2 Marks]**
14. Sorting is the process of arranging a group of items into a defined order based on a particular criteria **[2 Marks]**
15. *int, char and double* are all examples of primitive data types in Java **[2 Marks]**
16. In Java, the identifiers *student, Student and sTudent* are all the same. **[2 Marks]**
17. Every source file must be named the same as the class declared in the file **[2 Marks]**
18. Once an array is declared, the size cannot be changed. **[2 Marks]**
19. An Array in the Java programming language has the ability to store only the same types of values **[2 Marks]**
20. For the expression (y>=z && a==b) to be true, both of (y>=z) and (a==b) must be true **[2 Marks]**

SECTION B: FILL THE GAP

Examine the following cases, then for each case decide the correct data type to be used and create a valid declaration and assignment.

21. The number of pages in a book: **[2 Marks]**
22. Your name: **[2 Marks]**
23. Whether or not a car is moving: **[2 Marks]**
24. The amount of money in your bank: **[2 Marks]**
25. The symbol you obtained in a certain subject ie 'A', or 'B', etc: **[2 Marks]**
26. The day you were born: **[2 Marks]**

SECTION C: CODE SNIPPET

This section consist of 3 questions. Answer **ALL** the questions
Each correct answer is allocated 8 Marks

Question One **[8 Marks]**

The Java program below (Grade.java) use IF Statement to determine the grade based on mark obtained by student. Score is read from the keyboard and grade is calculated as follows:

Mark	**Grade**
75-100	Distinction
70-74	Merit
60-69	Credit
50-59	Pass
0-49	Fail

//Grade.java

```
1.  import java.util.Scanner;
2.  public class Lab04_A {
3.    public static void main(String[] args) {
4.    int  mark;
5.    char grade;
6.    Scanner console = new Scanner(System.in);
7.    System.out.print("Enter your numeric exam mark : ");
8.    mark = console.nextInt()
9.   if (mark >= 75) { grade = “Distinction”; }
10.    else if (mark >= 70) { grade = “Merit”; }
11.    else if (mark >= 60) { grade = “Cedit”; }
12.    else if (mark >= 50) { grade = “Pass”; }
13.    else { grade = “Fail”; }
14.  Syste.println("Your grade is  + grade); }
15. }
```

In the Java program above **(Grade.java),** identify which lines (numbers on the left) have errors and describe the error.

Question Two **[8 Marks]**

Giving the program (example1.java) below,

1. Explain what the Java program is doing.
2. Give the output of running the program.

//exampleC.java

```
public class example1 {
        private static Scanner sc;
        public static void main(String[] args)
        {       int number, i;
                sc = new Scanner(System.in);
                for(i = 0; i <= 20; i = i + 2) {
                        System.out.print(i +"\t");
                }
        }
}
```

Question Three **[8 Marks]**

Rewrite the following peace of code using a for loop

```
Public static void Display (String [ ] names, int [ ] marks) {
        int index = 0;
        while (index < names.length ) {
                System.out.println(names[index]+"\tMark: "+marks[index]);
                Index += 1;
        }
}
```

SECTION D: CODES/THEORY

Answer **all** questions

Each correct answer is allocated 8 Marks

Question One **[8 Marks]**

Using arrays write a java program that uses a semester mark to determine if a student qualifies to write examination or not. Giving that: *semester mark= test1 + test2*

If semester mark is less than 50% the program should say 'No, Not Qualified'

If semester mark equal or greater than 50% the program should say 'Yes, Qualified'

Get the input for test1 and test2 from the keyboard. Use arrays in your solution.

Name of student	test1	test2	Semester Mark
John	25	33	58
Harry	19	14	33
Kane	20	22	42

Assume there are three students in the class-John, Harry and Kane.
Also assume there are two Assessments: test1 and test2.

The program should display this Output:

```
Student         Semester mark          Qualifies for Exam?
---------       ------------------     ----------------------
John                  58                Yes, Qualified
Harry                 33                No, Not Qualified
Kane                  42                No, Not Qualified
```

Question Two **[8 Marks]**

Write a Java program that will ask for two integer numbers as input and print out the Addition, Subtraction, Multiplication and Division separated by space.

[Hint: Addition = A+B, Subtraction = A-B, Multiplication = A* B, Division = A/B]

Question Three **[8 Marks]**

Write a Java program to sum the Cubes of numbers between two numbers *startNo* and *endNo*. You may use either for statement or any other looping statement.

Two numbers (startNo and endNo) should be accepted as input from the keyboard.

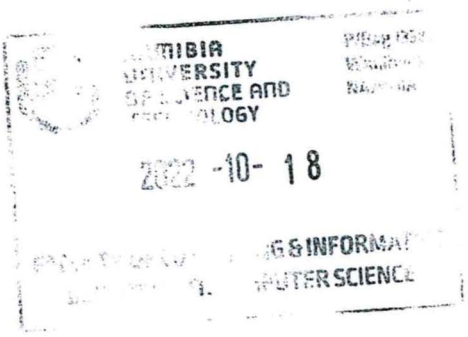
(a) If startNo is less than 0 then the program should print "startNo cannot be less than 0" and the program will end.

(b) If endNo is greater than 9 then the program should print "endNo cannot be greater than 9" and the program will end.

(c) But, if the right numbers (startNo and endNo) are entered ie any two numbers within 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, then the sum of Cube of numbers between startNo and endNo will be calculated and the program will printout "Sum of Cube of Numbers = " sumCube.

[Hint: All numbers from 1 to 3 are: 1,2,3 therefore SumCube = (1*1*1)+(2*2*2)+(3*3*3)=36]

THE END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