nAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF COMPUTING AND INFORMATICS
DEPARTMENT OF SOFTWARE ENGINEERING

QUALIFICATION: BACHELOR OF COMPUTER SCIENCE, BACHELOR OF COMPUTER SCIENCE IN CYBER SECURITY AND BACHELOR OF INFORMATICS	
QUALIFICATION CODE: 07BCMS, 07BCCY, 07BAIT	LEVEL: 5
COURSE: PROGRAMMING 1	COURSE CODE: PRG510S
DATE: JANUARY 2024	PAPER: THEORY
DURATION: 2 HOURS	MARKS: 100

SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER	
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INSTRUCTIONS
1. Answer ALL the questions.
2. Read all the questions carefully before answering.
3. Number the answers clearly.

THIS QUESTION PAPER CONSISTS OF 5 PAGES
(Including this front page)

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. It is compulsory to insert package in a Java program on VPL elearning. [2 Marks]
2. Every Java program requires at least one class   . [2 Marks]
3. In Java, the following statements are allowed: System.out.println(); or
   System.out.print(); or System.out.printf(); [2 Marks]
4. Once an Array is declared, the size cannot be changed. [2 Marks]
5. An Array can store only values of the same type [2 Marks]
6. print() - prints string inside the bracket and the cursor moves to the
   beginning of the next line [2 Marks]
7. In Java, the keywords: main, Main, and mAin are the same [2 Marks]
8. A variable is a location in the library to hold data. [2 Marks]
9. This statement should be declared as char   str1 = "Java Programming"; [2 Marks]
10. The statement: *K7 = M1/N1 * N2* is the same as *k7 = M1/n1*n2* [2 Marks]
11. You can pass data, known as parameters, into a method. [2 Marks]
12. scanner9 is a valid variable name. [2 Marks]
13. The output of *(8*2)/4-1* using precedence operator rule is: 9 [2 Marks]
14. In java the statement *int 1age* is a valid statement [2 Marks]
15. Every Java source file must bear the same name with the package and the
    same name with the public class [2 Marks]
16. Division by 0 or out of range array is an example of exception handling [2 Marks]
17. The statement   *double difference == num1 - num2   is valid* [2 Marks]
18. int[] nums1= { 1, 2, -2, 3, 4, 5, 6 }   declares an integer array with the following
    elements: 1, 2, -2, 3, 4, 5, 6 [2 Marks]
19. In Java, the identifiers *DSEstudent, DSEStudent and DSEsTudent* are all the same. [2 Marks]
20. Student_Mark is a Java keyword [2 Marks]

SECTION B: FILL THE GAP
Copy and complete the table below.

Question Number	Data Type	Value	Example of declarations and assignment	Marks
1		80.5		[2 Marks]
2		D		[2 Marks]
3		True		[2 Marks]
4		25003453.902		[2 Marks]
5		"Distinction Student!"		[2 Marks]
6		21		[2 Marks]

This section consist of 3 questions. Answer **all** the questions
Each correct answer to a question is allocated 8 Marks

Question One [8 Marks]

(A) **What will be the output of this Java code snippet?** (4 Marks)

```java
public class example1 {
public static void main(String[] args) {
 int a = 10;
 int b = 12;
 b++;
 System.out.println(a+b);
 a++;
}
```

(B) **What is the output of the following Java code snippet:** (4 Marks)

```java
public class example2 {
    public static void main(String[] args) {
        int[]  x = {120, 200, 8};
        for(int i = 0; i < x.length; i++){
            System.out.print(x[i] + " ");
        }
    }
}
```

Question Two [8 Marks]

(A) **What is the output of running the code snippet below:** (4 Marks)

```java
int age = 24;
AGE = 25
if (age < 22) { AGE++;  }
age++;
AGE--;
System.out.println(age);
System.out.println(AGE);
```

(B) Modify the print statement below to print 2. (4 Marks)

```java
int x =2;
int y=-2;
System.out.println( );
```

Question Three [8 Marks]

Write a Java program to request for an input number from the keyboard and print out Even if the number is even or Odd if the number is odd. Write a Main program to call the Method below.

```
//Method starts from here
Public static void findEvenOdd(int num)
{
    //method body
    if(num%2==0)
    {
        System.out.println(num+ "is Even");
        else
        System.out.println(num+"is Old");
    }
}
```

SECTION D: CODING/THEORY

Answer **ALL** questions
Each correct answer to a question is allocated 8 Marks

Question one   **[8 Marks]**

Write a Java program that computes the areas of 3 circles, given that:

Area = PR^2 where P = 3.14, R for Radius.

For each circle, the program should accept a number (Radius) as input from the keyboard.

The program should display this as sample output:

Please Enter Radius: 5
Area = 78.5   [Hint: Area = 3.14*5*5=78.5]
Please Enter Radius: 9
Area = 254.34   [Hint: Area = 3.14*9*9=254.34]
Please Enter Radius: 4
Area = 50.24   [Hint: Area = 3.14*4*4=50.24]
Note that the Hint is not part of the output.

Question Two   **[8 Marks]**

Write a Java program that will ask for two integer numbers as input from the keyboard and print out the sum, difference, product, division, square root, comparism of the two numbers and increment of a third number.

Sample input
Enter the first number: 20
Enter the second number: 10

Sample Output
The sum of the two numbers is: 30.0
The difference of the two numbers is: 10.0
The product of the two numbers is: 200.0
The division of the two numbers is: 2.0
The square root of third number 9 is: 3
First number is bigger than the second number.
Increment of third number 9: 10

Question Three
[8 Marks]

Write a Java program to sum ALL numbers between startNo and endNo. You may use either for statement, While statement, Do while statement or any other control structure statement in Java. The following should be programmed:

Two numbers (startNo and endNo) should be accepted as input from the keyboard.
(1) If startNo is less than 0 then the program should print "startNo cannot be less than 0" and the program will end. **(2 Marks)**
(2) If endNo is less than 0 then the program should print "endNo cannot be less than 0" and the program will end. **(2 Marks)**
(3) If endNo is greater than 9 then the program should print "endNo cannot be greater than 9" and the program will end. **(2 Marks)**
(4) 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 ALL numbers between startNo and EndNo will be calculated and the program will printout "Sum of ALL Numbers = " sumALL.   **(2 Marks)**

Sample output 1:
Input: Enter 2 Numbers separated with a space (startNo and endNo): -3 7
Output: startNo cannot be less than 0

Sample output 2:
Input: Enter 2 Numbers separated with a space (startNo and endNo): 2 -9
Output: endNo cannot be less than 0

Sample output 3:
Input: Enter 2 Numbers separated with a space (startNo and endNo): 2 20
Output: endNo cannot be greater than 9

Sample output 4:
Input: Enter 2 Numbers separated with a space (startNo and endNo): 2 5
Output: Sum of ALL Numbers = 14

[Hint: ALL numbers from 2 to 5 are: 2,3,4,5 therefore Sum = 2+3+4+5=14]

Note: Kindly accept any other reasonable solutions and allocate marks accordingly.

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