Go through the questions below and answer the questions:

1. What are the basic data types in Java used to store whole numbers and decimal numbers?
   Ans: The basic data types in Java used to store whole numbers and decimal numbers are **Int** and **float.**

2. How do you declare an integer variable in Java, and what is the range of values it can hold?
   Ans: We use **Int** datatype to declare an integer variable in java. The range value is **2147483648 to 2147483647**.

3. Explain the difference between `int` and `double` data types in Java.

int	double
It stores an integer value.	It stores floating point values.
It allocates 4 bytes to store data.	It allocates 8 bytes to store data.
The int data range value is -2147483648 to 2147483647.	The double data range value is 1.7976931348623157 x 10^308 to 4.9406564584124654 x 10^-324.

4. Write a Java code snippet to declare and initialize an integer variable with the value 5.

```
public class main(){
        public static void main (Strings[] args){
                int a= 5;
        }
}
```

5. How can you perform addition, subtraction, multiplication, and division in Java using arithmetic operators?

```java
import java.util.Scanner;

public class Operations {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter a number: ");
        int a= sc.nextInt();
        System.out.println("Enter another number: ");
        int b= sc.nextInt();
        int add= a+b;
        System.out.println("Addition: "+add);
        int sub= a-b;
        System.out.println("Subtraction: "+sub);
        int mul= a*b;
        System.out.println("Multiplication is: "+mul);
        float div= a/b;
        System.out.println("Division is: "+div);
        sc.close();
    }

}
```

Problems Javadoc Declaration Console

<terminated> Operations [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (Nov 23,

```
Enter a number:
5
Enter another number:
1
Addition: 6
Subtraction: 4
Multiplication is: 5
Division is: 5.0
```

6. What is the result of the expression `7 / 2` in Java, and how can you get the correct result if you want to include the remainder?

   Ans: The result of the expression 7/2 in Java is 3. If we want to include the remainder, we use modulus(%).

7. How do you declare a variable to store a single character in Java, and what is its data type? Char ch; ch='a';

   Ans: To declare a single character in java:

   char ch;

   ch='m';

   Bits datatype is char.

8. What is the difference between the `float` and `double` data types in terms of precision and storage space? a float is 32 bits in size while a double is 64 bits.

float	double
A float is 32 bits in size.	A double is 64 bits in size.
It can allow up to 6 digits of precision after the decimal.	It can allow up to 15 digits of precision after the decimal

9. Write a Java code snippet to calculate the area of a rectangle with a length of 10 units and a width of 5 units.

```
public class main(){
        public static void main(String[] args){
                int l,b,area;
                l=10;
                b=5;
                area= l*b;
                System.out.println("Area of rectangle is "+area);
        }
}
```

10. Explain the purpose of the modulus operator (%) in Java and provide an example.

Ans: The purpose of the modulus operator (%) in java is to find the reminder.

Example:

```
public class main(){
        public static void main(String[] args){
                int a,b,c;
                a=7;
                b=2;
                c=a%b;
                System.out.println(c);
        }
}
```

Output: 1

11. What is the significance of variable naming conventions in Java, and what are some best practices?

    Ans: Variable naming conventions in Java are important for writing clear, readable, and maintainable code.

    Some of the best practices are:

    •Variable names must start with a letter

    •You cannot use other symbols (? or %...) and spaces are not permitted

    •Separate words with ‘camelCase’ notation

    •Use upper case letters to signify word boundaries

    •Don’t use reserved ‘Java’ words

12. Write a Java program to calculate the sum of two numbers the user enters and display the result.

```
Import java.util.Scanner
public class SumOfNumbers4{
        public static void main(String args[]) {
        Scanner sc=new Scanner(System.in);
        System.out.print(“Enter a number: ”);
        int A=sc.nextInt();
        System.out.print(“Enter another number: ”);
        int B=sc.nextInt();
        int sum= A+B;
        System.out.println(“The sum of two numbers is: “+sum);
        }
}
```

13. How do you determine the data type of a variable in Java?

    Ans: We determine the data type by the value that needs to be stored in that variable.