LOOPS ASSIGNMENT QUESTIONS

Q.1) Write a Java program to calculate the sum of natural numbers up to a given positive integer 'n'.

sol-
```
package loopsAssignment;
import java.util.Scanner;
public class sumOfNaturalNumbers {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        System.out.print("Enter n:");
        int n = scan.nextInt();
        int sum = 0;
        for(int i=1; i<=n; i++){
            sum+=i;
        }
        System.out.println("The of n natural numbers is "+sum);
    }
}
```

Q.2) Write a Java program to print a multiplication table for a given number 'n'.

sol-
```
package loopsAssignment;
import java.util.Scanner;
public class multiplicationTable {
    public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter n:");
      int n = scan.nextInt();
      for(int i=n; i<=(n*10); i+=n){
      System.out.println(i);
      }
    }
}
```

Q.3)Write a Java program to find the GCD (Greatest Common Divisor) of two numbers using a loop.

sol-
```
public class GreatestCommonDivisor {
    public static void main(String[] args) {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter num1:");
      int num1 = scan.nextInt();
      System.out.print("Enter num2:");
      int num2 = scan.nextInt();
      int GCD=1;
      for(int i=1; i<=num1 && i<=num2; i++){
          if(num1%2==0 && num2 % 2 == 0){
              GCD = i;
          }
          System.out.println(GCD);
      }

    }
  }
```

Q.4)Write a Java program to check if a given string is a palindrome or not using a loop.

sol-
```
public class palindrome {
    public static void main(String[] args) {
     String string = "Kayak";
     boolean flag = true;
     string = string.toLowerCase();

     for(int i = 0; i < string.length()/2; i++){
         if(string.charAt(i) != string.charAt(string.length()-i-1)){
             flag = false;
             break;
         }
     }
     if(flag)
        System.out.println("Given string is palindrome");
     else
         System.out.println("Given string is not a palindrome");
  }
}
```

Q.5) Write a Java program to generate and print the first 'n' terms of the Fibonacci series.

sol-
```
package loopsAssignment;
import java.util.Scanner;
public class fibonacciSeries {
  public static void main(String[] args) {
    int n1 = 0, n2 = 1, n3, i, count = 10;
    System.out.print(n1 + " " + n2);//printing 0 and 1

    for (i = 2; i < count; ++i)//loop starts from 2 because 0 and 1 are already printed
    {
      n3 = n1 + n2;
      System.out.print(" " + n3);
      n1 = n2;
      n2 = n3;

    }
  }
}
```