Advanced Java

UID: 24MCI10204

Name: Rahul Saxena

Branch: 24MCA – AI & ML

Question 1: Write a program in java that identifies and print perfect numbers between 2 and 500.

Code:

```
class Problem1{
   public static void main(String[] args) {
      System.out.println("Perfect numbers between 2 and 500 are:");
      for (int num = 2; num <= 500; num++) {
         int sum = 0;
         for (int i = 1; i <= num / 2; i++) {
            if (num % i == 0) {
               sum += i;
            }
         }
         if (sum == num) {
            System.out.println(num);
         }
      }
   }
}
```

Question 2: Write a program to find how many letter a and letter b are occurs in the given string "aabaaaababa".

Code:

```
class Problem2 {
   public static void main(String[] args) {
      String str = "aabaaaababa";
      int countA = 0;
      int countB = 0;

      for (int i = 0; i < str.length(); i++) {
         char ch = str.charAt(i);
         if (ch == 'a') {
            countA++;
         } else if (ch == 'b') {
            countB++;
         }
      }
```

```
        System.out.println("Number of 'a': " + countA);
        System.out.println("Number of 'b': " + countB);
    }
}
```

Question 3: Write a program to count number of words from a string in java.

Code:

```
class Problem3{
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.println("Enter a string:");
        String str = scanner.nextLine();
        int wordCount = 0;
        boolean inWord = false;
        for (int i = 0; i < str.length(); i++) {
            char ch = str.charAt(i);
            if (ch != ' ' && !inWord) {
                wordCount++;
                inWord = true;
            } else if (ch == ' ') {
                inWord = false;
            }
        }

        System.out.println("Number of words: " + wordCount);
    }
}
```