1)

```java
import java.util.Scanner;

public class Sample {
        public static void main(String[] args) {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter the word");
                String word = sc.nextLine();
                int vowelCount = 0;

                int n = word.length();
                for(int i=0; i<n; i++)     {
                        if(word.toLowerCase().charAt(i) == 'a' || word.toLowerCase().charAt(i) ==
'e' || word.toLowerCase().charAt(i) == 'i' || word.toLowerCase().charAt(i) == 'o' ||
word.toLowerCase().charAt(i) == 'u') vowelCount++;
                }

                System.out.println("The vowel count in the word is :" + vowelCount);
        }
}
```

2)

```java
import java.util.Scanner;

public class Sample {
        public static void main(String[] args) {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter the word");
                String reverseWord = "";
                String word = sc.nextLine();
                int vowelCount = 0;

                int n = word.length();
                for(int i=0; i<n; i++)     {
                        reverseWord += word.charAt(n-i-1);
                }

                System.out.println("The reversed word is :" + reverseWord);
        }
}
```

3)
```java
public class Sample {
    public static void main(String[] args) {
        String sentence = "This is a sample sentence";
        int n = sentence.length();
        String reverseWords = "";

        String word = "";
        for(int i=0; i<n; i++)    {
            if(sentence.charAt(i) == ' ')    {
                if(!word.equals(""))    {
                    reverseWords = word + " " +reverseWords;
                    word = "";
                }
            }
            else    word += sentence.charAt(i);
        }

        if(!word.equals(""))    reverseWords = word + " " + reverseWords;

        System.out.println(reverseWords);

    }
}
```

4)

```java
import java.util.Scanner;

public class Sample {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        String email = sc.nextLine();
        if(email.contains("@") && (email.endsWith("gmail.com") ||
email.endsWith("zohotrainees.com")))        {
            System.out.println("Valid Email");
        }
        else System.out.println("Invalid email");
    }
}
```

5)

```java
public class Sample {
        public static void main(String[] args) {

                String sentence = "this is a sample sentence that needs to be capitalized";
                int n = sentence.length();
                String capitalizedSentence = "";

                String word = "";
                for(int i=0; i<n; i++)    {
                        if(sentence.charAt(i) == ' ')    {
                                capitalizedSentence += " " +  word.toUpperCase().charAt(0) +
word.substring(1);

                                word = "";
                        }
                        else word += sentence.charAt(i);
                }

                capitalizedSentence += " " +  word.toUpperCase().charAt(0) + word.substring(1);

                System.out.println(capitalizedSentence);
        }
}
```

6)