一、填空题

1：假设

```
String s1 = "Welcome to Java";
String s2 = s1;
String s3 = new String("Welcome to Java");
```

那么下面表达式的结果是什么?

(1) s1 == s2 ________true____________________

(2) s1 == s3 ________false___________________

(3) s1.equals(s2) ________true____________________

(4) s2.equals(s3) ________true____________________

(5) s1.compareTo(s2); ________0_______________________

(6) s2.compareTo(s3); ________0_______________________

(7) s1.charAt(0); ________W_______________________

(8) s1.indexOf('j'); ________-1______________________

(9) s1.indexOf("to"); ________8_______________________

(10) s1.lastIndexOf("o",15) ______ 9________________________

(11) s1.substring(3, 11); ________come to （含一个空格）_____

(12) s1.endsWith("Java") _________true___________________

(13) s1.startsWith("wel"); _________false__________________

(14) " We come ".trim(); _________We come_________________

(15) s1.toUpperCase(); _________WELCOME TO JAVA_________

(16) s1.replace('o', 'T'); _________WelcTme tT Java_________

2. 如果

```
StringBuffer s1 = new StringBuffer("Java");
StringBuffer s2 = new StringBuffer("HTML");
```

假设下列每个语句是独立的，每条语句结束后，写出相应结果

(1) s1.append(" is fun"); s1 为__Java is fun_________

(2) s1.append(s2); s1 为__JavaHTML______________

(3) s1.insert(2, "is fun"); s1 为__Jais funva___________

(4) s1.insert(1,s2); s1 为__JHTMLava______________

(5) char c = s1.charAt(2); c 为____v__________________

(6) int i = s1.length(); i 为____4__________________

(7) s1.deleteCharAt(3); s1 为___Jav__________________

(8) s1.delete(1,3); s1 为___Ja___________________

(9) s1.reverse(); s1 为___avaJ_________________

(10) s1.replace(1,3, "Computer"); s1 为__JComputera_____________

(11) String s3 = s1.substring(1,3);

s3 为__________av_____________, s1 为_____Java__________________

(12) String s4 = s1.substring(2);

S4 为__________va_____________, s1 为_____Java____________________

3. 假设 StringBuffer s = new StringBuffer("Welcome to JAVA");
将 s 的内容清空的语句是___ s.replace(0,s.length(),"");________________。

或者：s.setLength(0);

4.如果

```
String s1 = "Welcome";
String s2 = new String("Welcome");
String s3 = s2.intern();
String s4 = "Wel" + "come";
String s5 = "Wel";
String s6 = "come";
String s7 = s5 + s6;
String s8 = "Wel" + new String("come");
```

那么下面表达式的结果为：

(1) s1 == s2 ___ false_________

(2) s1 == s3 ____ true________

(3) s1 == s4 ____ true________

(4) s1 == s7 ____false_______

(5) s1 == s8 ____ false_________

(6) s1.equals(s2) ___ true_________

(7) s1.equals(s3) ___ true_________

(8) s1.equals(s4) ___ true________

(9) s1.equals(s7) ____ true________

(10) s1.equals(s8) _____ true_______

二、单项选择题

1. 可以获取字符串 s 的最后一个字符的表达式是___C_____。

(A) s.length()

(B) s[s.length() - 1]

(C) s.charAt(s.length() - 1)

(D) charAt(s, length(s))

2. 下面程序

```
class C {
    public static void main(String[] args) {
        String s = “null”;
        if(s == null)
            System.out.print(“a”);
        else if(s.length() == 0)
            System.out.print(“b”);
        else
            System.out.print(“c”);
    }
}
```

的输出为___C_____。

(A) a　　　　　　(B) b

(C) c　　　　　　(D) null

3. 下面的程序

```
class C {
    public static void main(String[] args) {
        String s = “Welcome to ”;
        concat(s);
        System.out.print(s);
    }
    public static void concat(String s) {
        s += “Java”;
    }
}
```

的输出为___A_____。

(A) Welcome to　　　　　　(B) Welcome to Java

(C) 编译错误　　　　　　(D) 运行时异常

三、编程题

1: 编写程序，从控制台或对话框任意输入一个英文字符串，统计字符串中每个英文字母出现的次数并输出到控制台（大小写不敏感）。

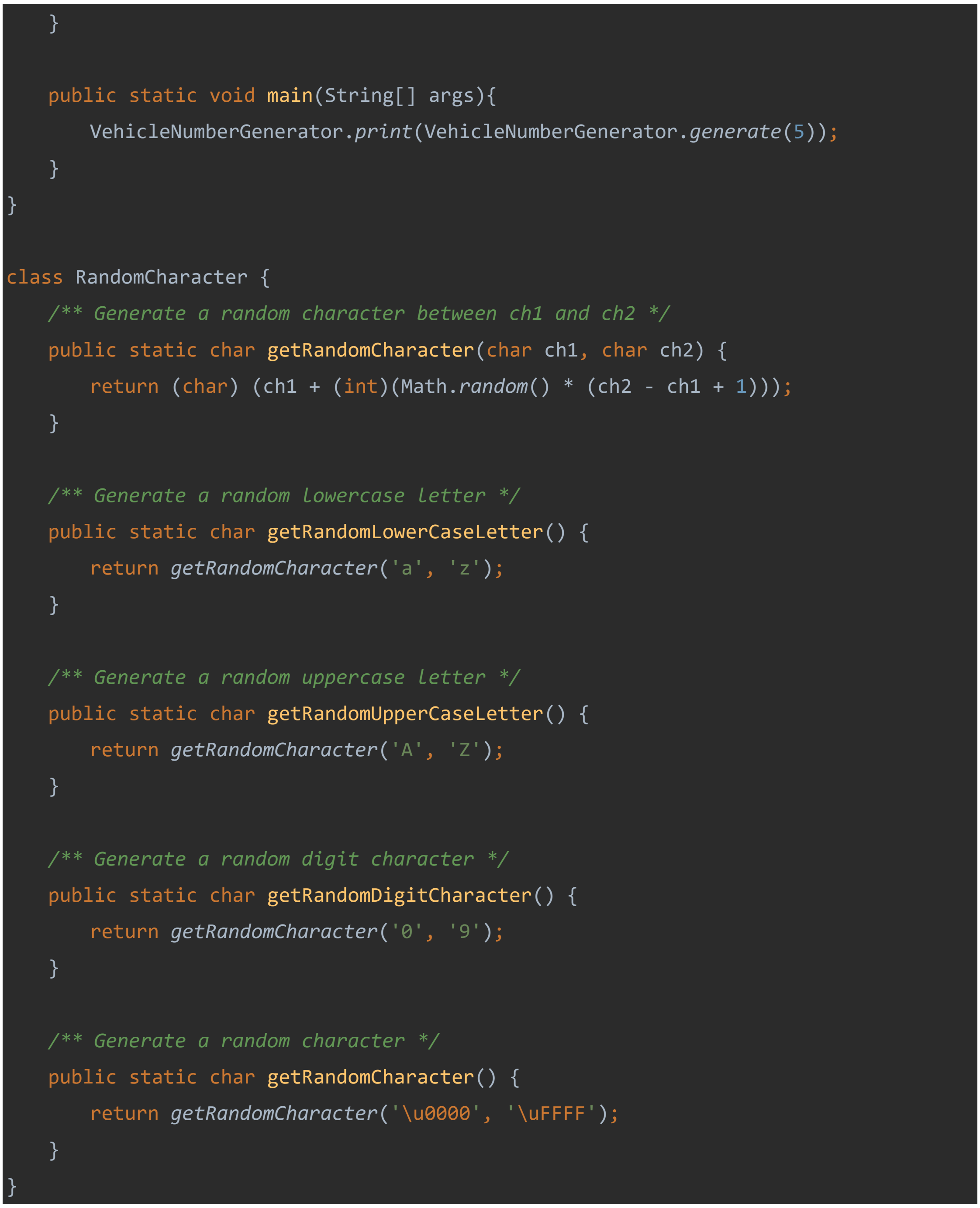
2: 假设一个车牌号码由三个大写字母和后面的四个数字组成。编写一个程序．生成 5 个不重复的车牌号码。

1:参考答案:

```
public class CountEachLetter {
    /** Main method */
    public static void main(String[] args) {
        // Prompt the user to enter a string
        String s = JOptionPane.showInputDialog("Enter a string:");

        // Invoke the countLetters method to count each letter
        int[] counts = countLetters(s.toLowerCase());

        // Declare and initialize output string
        String output = "";

        // Display results
        for (int i = 0; i < counts.length; i++) {
            if (counts[i] != 0)

                // (char)('a' + i )：得到 counts 数组第 i 个元素对应的是哪个字符

                output += (char) ('a' + i) + " appears  " + counts[i]
                        + ((counts[i] == 1) ? " time\n" : " times\n");
        }

        // Display the result
        JOptionPane.showMessageDialog(null, output);
    }

    // Count each letter in the string
    public static int[] countLetters(String s) {
        int[] counts = new int[26];

        for (int i = 0; i < s.length(); i++) {
            if (Character.isLetter(s.charAt(i)))

                //s.charAt(i) - 'a'计算第 i 个字母在 counts 数组中对应的索引，以便计数+1

                counts[s.charAt(i) - 'a']++;
        }

        return counts;
    }
}
```

2：参考答案

```java
public class VehicleNumberGenerator {

    private static final int UPPER_LETTER_LENGTH = 3;
    private static final int DIGIT_LENGTH = 4;
    /**
     * 产生指定数目的不重复车牌号码，车牌号码由三个大写字母和后面的四个数字组成
     * @param n 车牌个数
     * @return 生成的车牌
     */
    public static String[] generate(int n){
        if( n < 1)
            return null;

        List<String> list = new ArrayList<>();
        while(list.size() < n){
            //Generate  Uppercase Letter
            char[] letters = new char[UPPER_LETTER_LENGTH];
            for(int j = 0; j < UPPER_LETTER_LENGTH; j ++){
                letters[j] = RandomCharacter.getRandomUpperCaseLetter();
            }
            //Generate Digits
            char[] digits = new char[DIGIT_LENGTH];
            for(int j = 0; j < DIGIT_LENGTH; j++){
                digits[j] = RandomCharacter.getRandomDigitCharacter();
            }
            StringBuffer buf = new StringBuffer();
            buf.append(letters).append(digits);
            String number = buf.toString();


            if(!list.contains(number)){ //只有不重复，才加入 list

                list.add(number);
            }

        }

        return list.toArray(new String[]{});
    }

    public static void print(@NotNull  String[] numbers){
        for(String number: numbers){
            System.out.println(number);
        }
```



```java
    }

    public static void main(String[] args){
        VehicleNumberGenerator.print(VehicleNumberGenerator.generate(5));
    }
}

class RandomCharacter {
    /** Generate a random character between ch1 and ch2 */
    public static char getRandomCharacter(char ch1, char ch2) {
        return (char) (ch1 + (int)(Math.random() * (ch2 - ch1 + 1)));
    }

    /** Generate a random lowercase letter */
    public static char getRandomLowerCaseLetter() {
        return getRandomCharacter('a', 'z');
    }

    /** Generate a random uppercase letter */
    public static char getRandomUpperCaseLetter() {
        return getRandomCharacter('A', 'Z');
    }

    /** Generate a random digit character */
    public static char getRandomDigitCharacter() {
        return getRandomCharacter('0', '9');
    }

    /** Generate a random character */
    public static char getRandomCharacter() {
        return getRandomCharacter('\u0000', '\uFFFF');
    }
}
```