

Sample Questions for **Computer Science A**

Question 2

(a)

Iterative version:

```
public static String apcsReplaceAll(String str,
                                   String oldStr,
                                   String newStr)
{
    String firstPart = "";
    String lastPart = str;
    int pos = lastPart.indexOf(oldStr);
    while (pos >= 0)
    {
        firstPart += lastPart.substring(0, pos);
        firstPart += newStr;
        lastPart = lastPart.substring(pos + oldStr.length());
        pos = lastPart.indexOf(oldStr);
    }
    return firstPart + lastPart;
}
```

Sample Questions for **Computer Science A**

(b)

```
public static String replaceNameNickname(String str,
                                         List<Person> people)
{
    for (Person p : people)
    {
        str = apcsReplaceAll(str, p.getFirstName(), p.getNickname());
    }
    return str;
}
```

Question 4

(a)

```
public static void shiftArray(int[] arr, int num)
{
    for (int k = arr.length - 1; k > 0; k--)
    {
        arr[k] = arr[k - 1];
    }

    arr[0] = num;
}
```

(b)

```
public void shiftMatrix(int num)
{
    for (int[] row: matrix)
    {
        int temp = row[row.length - 1];
        ArrayUtil.shiftArray(row, num);
        num = temp;
    }
}
```

(c)

```
public void rotateMatrix()
{
    shiftMatrix(matrix[matrix.length - 1][matrix[0].length - 1]);
}
```