MCA, Semester I

Department of Computer Science

MCAC-101 Object Oriented Programming

Minor Exam, Feb-2022

Max marks: 20

Max time: 1Hours + 10minutes for Scanning and uploading answers

Instructions:

I. All questions are compulsory.
II. You MUST document your code properly for full credit.

1. Write a function named `myRevList`, that accepts a list, `items` and returns a list of same length as of `items` where for each element, perform the following operation: **(6)**
    a. If the element in `items` is an integer, the number should be replaced with sum of digit of the number.
    b. If the element is a string, the string should be converted to upper case.
    c. If element is other than an integer or a string, the element should be removed.

    e.g.

```
l=[23, 45, 78, 90, 281, [1, 2]]
myRevList(l) should return [5, 9, 15, 9, 11]

l=["One", 78, "Two" , 89.7, "Three"]
myRevList(l) should return ["ONE", 15, "TWO", "THREE"]
```

2. Write a recursive function, `myCount` to count the number of elements in a string. **(4)**
    Note: don't use any in-built function to find length of a string.
    e.g.

```
str1="Hello World!"
myCount(str1) should return 12
```

3. Write a function named, `checkPerfectSquare` that take arbitrary number of positive integers (without lists, only integers), and returns a list of True or False. The value in the returned list is True if the corresponding number is a perfect square otherwise value will be False. **(10)**

NOTE:

a. Don't use in-built function to find-out square root of the number.
b. Write drivers code also, where take integers from the user.

e.g.

`checkPerfectSquare(12, 4, 25, 89)` should return `[False, True, True, False]`

`checkPerfectSquare(112, 144, 325, 9, 89)` should return `[False, True, False, True, False]`