

Exercises - Problems Sheet # 1: Functions (Recursion)

No. Of Questions: 7

No. Of Pages: 2

► Students will lose 2 marks if this homework is not delivered on time or found out to be copied.

Answer the following:

- 1) Repeat the problem no. 11 in **Sheet#0** but with an 'Exit' option; that is, the program allows the user to enter new values and choose the required operations until the user chooses to exit.
- 2) Repeat the problems from 5 to 16 in **Sheet#0** using functions, and you should call them from the main. The functions should return a value to the main and the main is responsible for printing the output.
- 3) Write a program that will:
 - Prompt the user to input ten integer values.
 - Calculate the smallest and the greatest of those values.
 - Call a function to calculate the difference between those smallest and greatest values.
 - Finally: displays the entered ten integers, the difference between the smallest and greatest values, and the value that occurs the most.
- 4) Write a C program to find the sum of the first n natural numbers using recursion.
Note: Positive integers are known as natural numbers.
- 5) Write a C program to check whether a number is a prime number or not, by using recursion.
- 6) Write a C program to reverse a string, by using recursion.
- 7) What does the following program do?

5.43 What does the following program do?

```
1  #include <stdio.h>
2
3  int mystery( int a, int b ); /* function prototype */
```