Practical 1: Find the Factorial of a Number Using SciLab

Aim:

To find the factorial of a given non-negative integer using SciLab.

Materials Required:

- SciLab software (version 6.1 or higher)
- A computer system with SciLab installed

Theory (In Brief):

The factorial of a non-negative integer n is defined as the product of all positive integers less than or equal to n. It is denoted by n!. The factorial function is used in various areas such as permutations, combinations, and series expansions.

Key Points:

- 0! = 1 by definition.
- Factorials grow rapidly with increasing numbers.
- Only defined for non-negative integers.

Applications:

- Counting and arrangements in combinatorics.
- Probability calculations.
- Mathematical series expansions.

Formulas Required:

1. Factorial Definition:

$n! = n \times (n - 1) \times (n - 2) \times ... \times 1$

2. Special Case:

$0! = 1$

Result:

The factorial of a given non-negative integer was successfully calculated using SciLab.