TOPICS: **Allowed Time:** 70 Minutes
Instructions: **Total Marks:** 45

1. Gossips are not allowed.
2. Teacher assistants are for your help, so be nice with them. Respect them as they are teaching you. Raise your hands if you have some problem and need help from TA. Avoid calling them by raising your voice and disturbing the environment of Lab.
3. TA may deduct your marks for any kind of ill-discipline or misconduct from your side.
4. Evaluation will be considered final and you cannot debate for the marks. So, focus on performing the tasks when the time is given to you.

Task 01: (5 Marks, 10 min)

Write a recursive function to find the nth Fibonacci number.
Example:
Input: 5 → Output: 5
(Series: 0, 1, 1, 2, 3, 5, 8, 13, ...)

Task 02: (5 Marks, 10 min)

Find the sum of natural numbers up to N.
Example:
Input: 5 → Output: 15

Task 03: (10 Marks, 15 min)

Count how many zeros appear in a given number.
Example:
Input: 1020304 → Output: 3

Task 04: (10 Marks, 15 min)

Multiply two numbers without using * operator, only addition and recursion.

Example:
Input: 3, 4 → Output: 12

Task 05: (15 Marks, 20 min)

You are given a staircase with N steps, and you can climb either 1 or 2 steps at a time. Find how many distinct ways you can reach the top (Nth step) from the ground.

Example:
Input: 3 → Output: 3

Explanation:
(1,1,1), (1,2), (2,1)