**FORMAL LANGUAGES and AUTOMATA THEORY (CS4402)**

**CLASS TEST – 2**

Instructions:

1. Try to answer in A4 papers (Try to answer in less than or equal to two pages).
2. On top left side of every page write your roll number, name and **page number** and **Class Test-2**
3. Scan the pages in the same order, convert them into pdf and merge them.
4. Save the document with your full roll number followed by CS4402 (For example 1906001\_CS4402).

**Answer All questions**

1. Construct the Non-Deterministic Push Down Automata to accept the language L = {xy **|** x and y (a + b) \*, |x| = |y| and x ≠ y. Mention all the tuples of the PDA. 4M
2. Design CFG for L = {anbmck | k = n − m, n ≥ 0, m ≥ 0; and n > m. Mention all the tuples of the grammar (use only less than five productions) 4M
3. Check the following grammar is ambiguous or not? 2M

G = ({S, B}, {a, b}, {S🡪aSb | SS | aB | aaB | €, B 🡪 b}, S).