FORMAL LANGUAGES and AUTOMATA THEORY

(CS4402)

CLASS TEST – 1

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-1**
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. A language L = {w | w ∈ (a + b) * and every ***substring*** of length three in w has at most two a's. For example, baabbba and abbaab are in the language, but baaaba is not. All strings of length less than three are also in the language. Construct the Deterministic Finite Automat for L and minimize it. You must mention all the five tuples of the machine. **4M**
2. Give the regular Expression for the language L = {w | w ∈ (a + b) * and w should not end with two consecutive a's or two consecutive b's.} **2M**
3. Convert the following DFA into Regular Expression. **4M**

   M = ({A, B, C, D}, {a, b}, δ, A, {C})

   ***δ*:**

	a	b
A	B	D
B	B	C
C	D	C
D	D	D