FORMAL LANGUAGES and AUTOMATA THEORY

(CS4402)

ASSIGNMENT – 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 **Assignment-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. Draw the Complete DFA for the following languages: 6M
   i) L_1 = {The set of strings that either begin or end (or both) with 01 over the alphabet {0, 1}.
   ii) L_2 = {The set of strings such that the number of 0's is divisible by five and the number of 1's is divisible by 3 over the alphabet {0, 1}}.

2. Design ϵ-NFA that language accepts set of strings that consists of either 01 repeated one or more times or 010 repeated one or more times. 2M

3. Write the regular expression for the following language: 2M
   L = {The set of all strings of 0's and 1's such that every pair of adjacent 0's appears before any pair of adjacent 1's over the alphabet {0, 1}}.