Birla Institute of Technology and Science, Pilani, Pilani Campus, Rajasthan
CS F351 (Theory of Computation)
Tutorial #1

Topic: Finite Automata

Q1. Construct a Deterministic Finite Automata over Σ = {a, b} for the following languages where

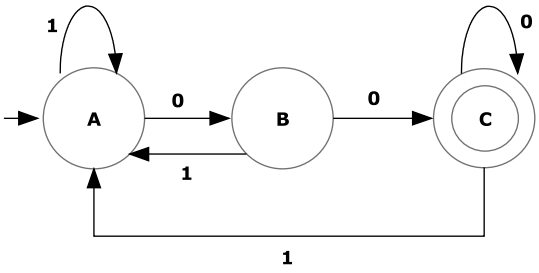
a) Each string in the language contains ab as a substring.
b) The length of the string is exactly three.
c) The third input symbol from L.H.S. is 'a'.
d) The number of a's are even.

Q2. Design a minimal DFA for the following languages:

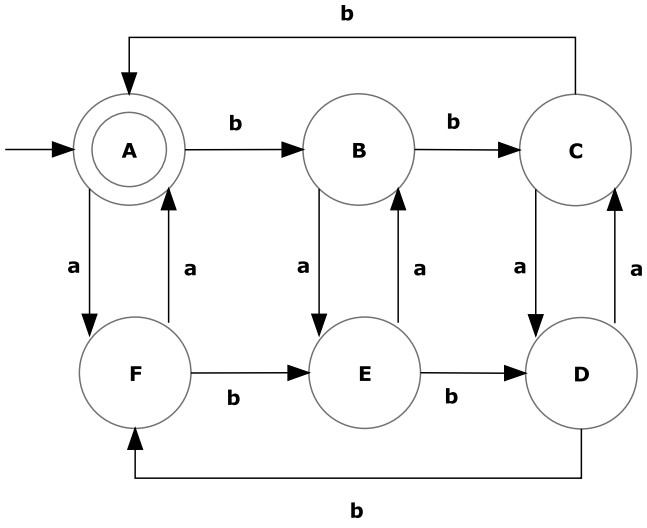
a) $L = \{a^n b^m \mid n, m \geq 1\}$
b) $L = \{a^m b^n \mid m, n \geq 0\}$

Q3. Identify the language pattern accepted by the accepting state of Finite Automata

a)



b)



Q4. Consider the following DFA over Σ = {a,b}. Complement this automata and identify the language generated by this complemented DFA