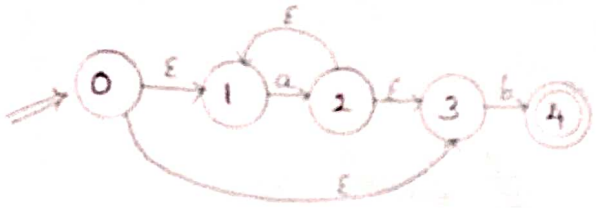
THEORY OF COMPUTATION

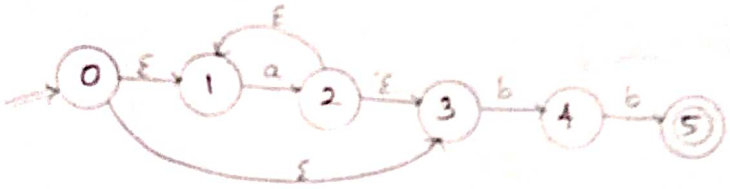
1- NFA

Construct NFA for the following regular expressions

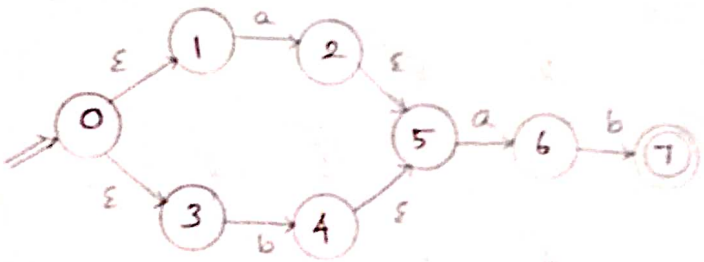
(1) a^*b



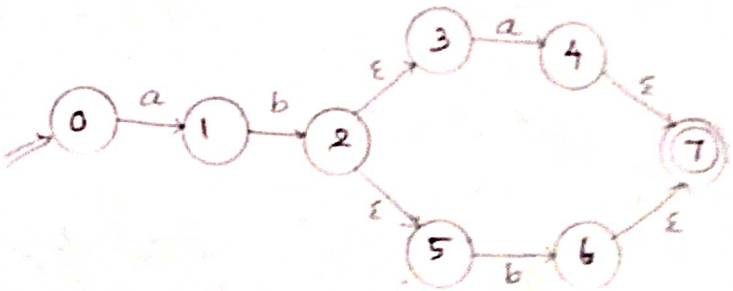
(2) a^*bb



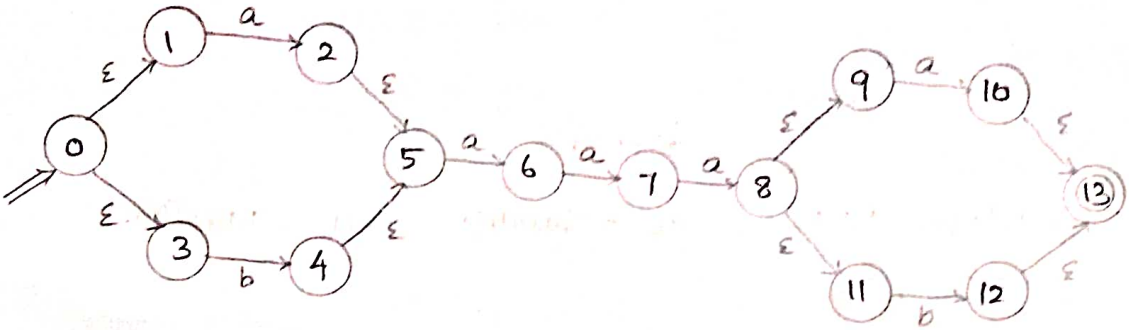
(3) $(a|b)ab$



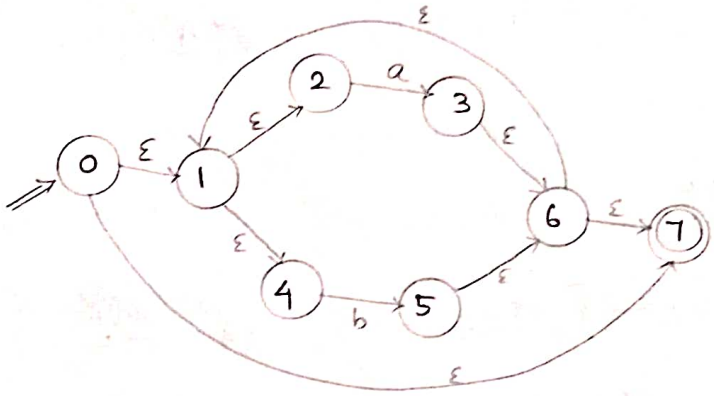
(4) $ab(a|b)$



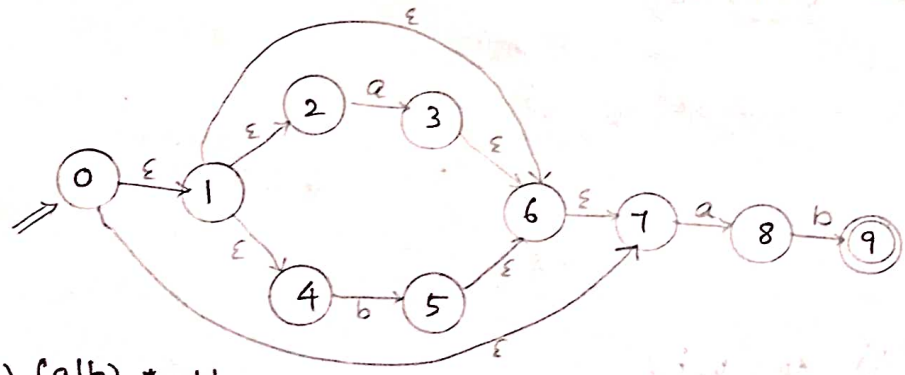
(5) (a|b) aaa (a|b)



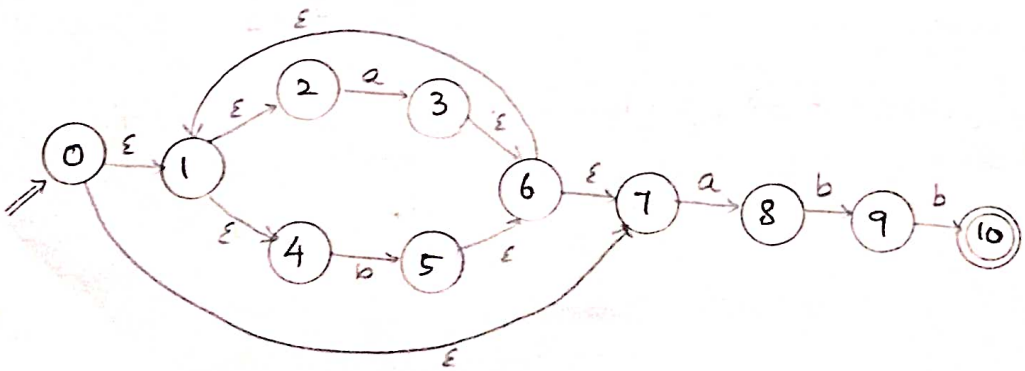
(6) (a|b)*



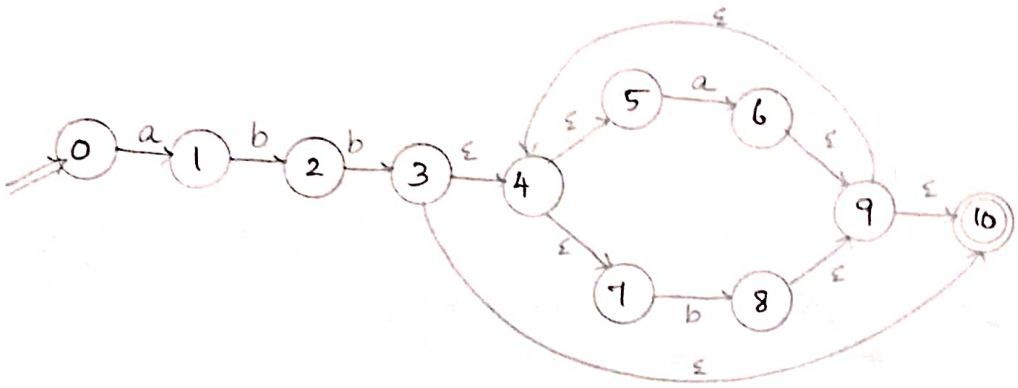
(7) (a|b)* ab



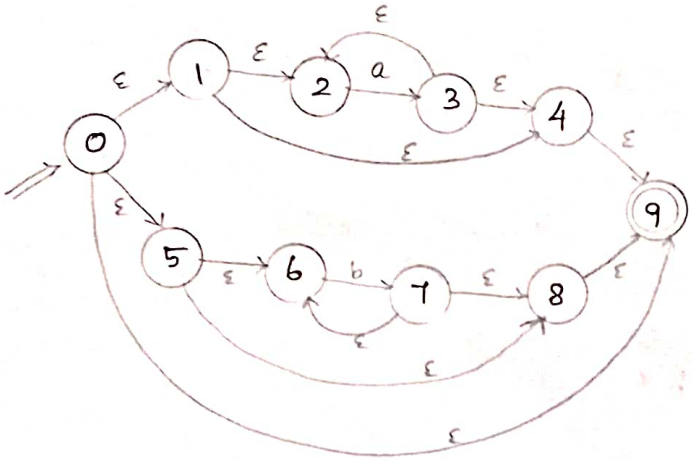
(8) (a|b)* abb



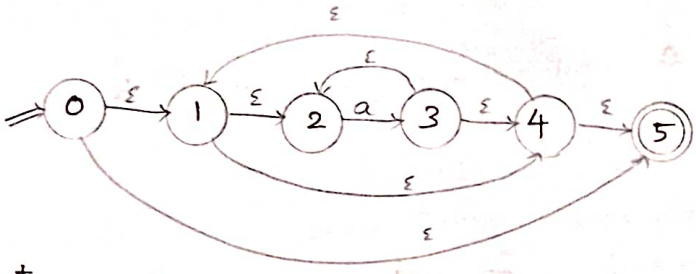
(9) $abb(a|b)^*$



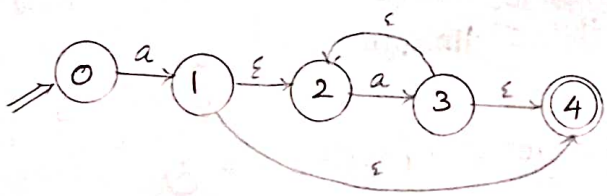
(10) $a^*|b^*$

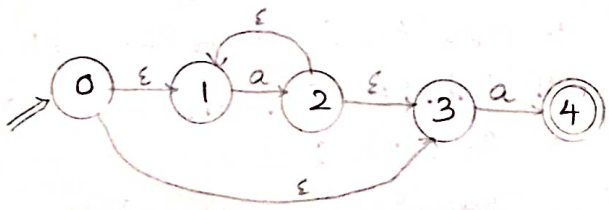


(11) $(a^*)^* = a^*$



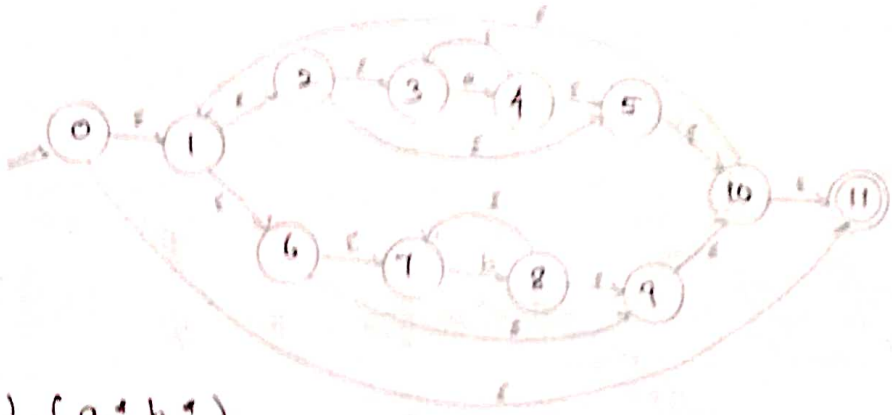
(12) $a^+ = aa^* = a^*a$



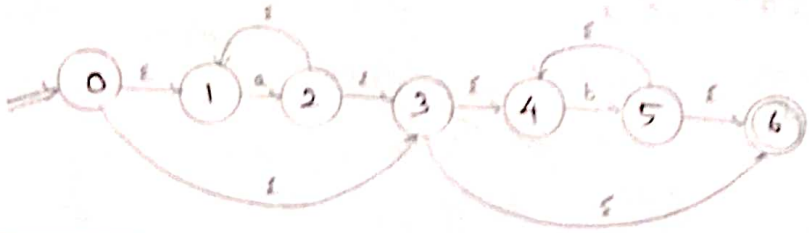


(13) $(a^*|b^*)abb$

(14) $(a^*|b^*)^*$



(15) (a^*b^*)



2. DFA

(1) a^*b

Set of states that can be reached from state s through ε-transition.

I/p	Starting node	ending node.
a	1	2
b	3	4

ε-closure(0) = {0,1,3} → (A)

Apply input 'a' on state (A), ε-closure(2) = {1,2,3} → (B)

Apply input 'b' on state (A), ε-closure(4) = {4} → (C)

Apply input 'a' on state (B), ε-closure(2) = → (B)

Apply input 'b' on state (B), ε-closure(4) = → (C)