

Tutorial 1

Q1 RE for

a) a^*b

a) set of strings over $\{a, b, c\}$ start and end different char

$a(a+bbc)^*b / a(a+bbc)^*c / b(a+bbc)^*c / b(a+bbc)^*a / c(a+bbc)^*a / c(a+bbc)^*b$

b) set of strings over $\{0, 1\}$ odd no. of 0's

$(1^* (00)^* 01^*)^*$

c) i) $(a+bb)^*$

$L_1 = \{a, b\}^n \mid n \text{ is natural} \}$ $L_2 = \{b, a\}^n \mid n \text{ is natural} \}$

$L = \{L_1 \cup L_2\}$

ii) $1(0+1)(0+1)(0+1)(0+1)^*0$

$L_1 = \{1\}$ $L_2 = \{0\}$ $L_3 = \{(0+1)^n \mid n \geq 3\}$

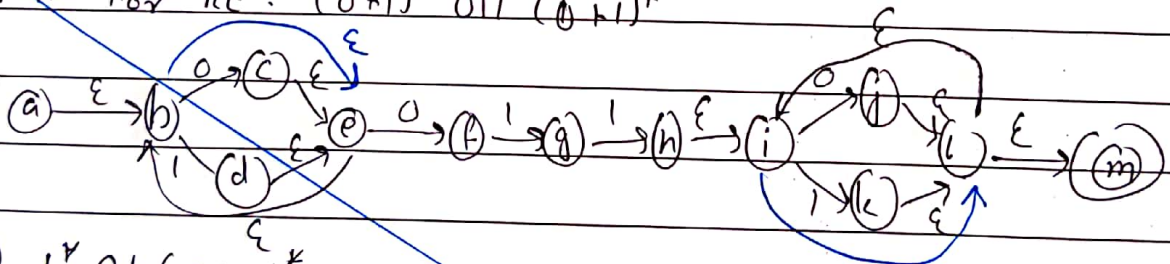
$L = \{L_1 \cdot L_2 \cdot L_3\}$

3) RE $L(\sigma) = \{a^2b^2, aab, aba, abb, ba^2, bab, bba, bbb\}$

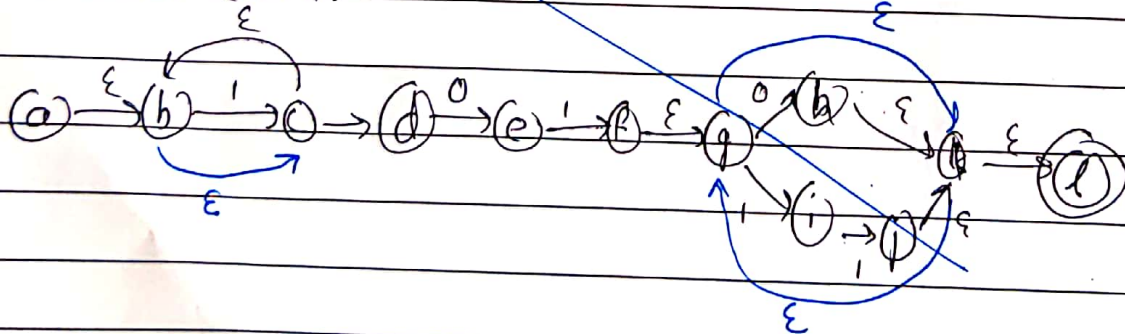
Find R.E which represent $L(\sigma)$

R.E = $(a+bb)(a+bb)(a+bb)$ or $(a+bb)^3$

4) NFA for RE: $(0+1)^* 011 (0+1)^*$

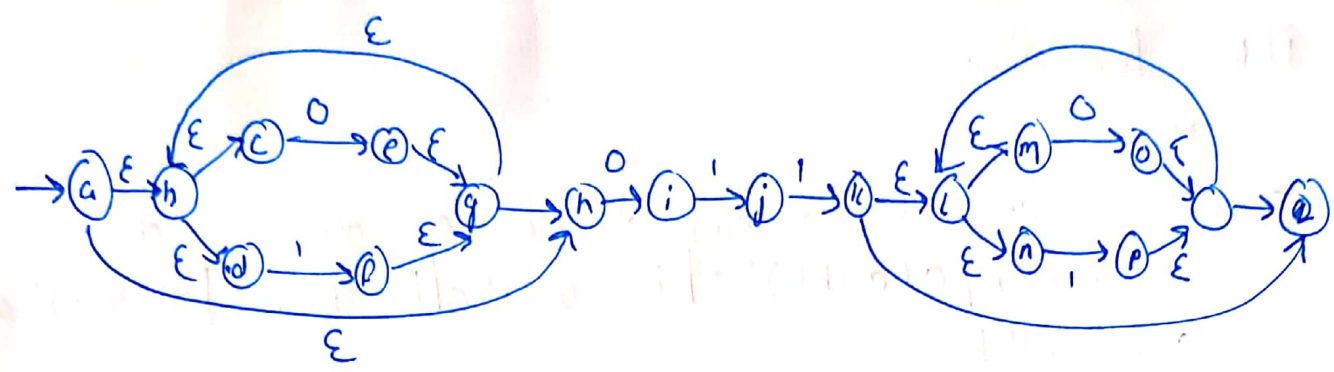


ii) $1^* 01 (0+1)^*$



Q3

1) $(0+1)^* 011 (0+1)^*$



2) $1^* 01 (0+1)^*$

