Nashit Budhwani 20K-0274

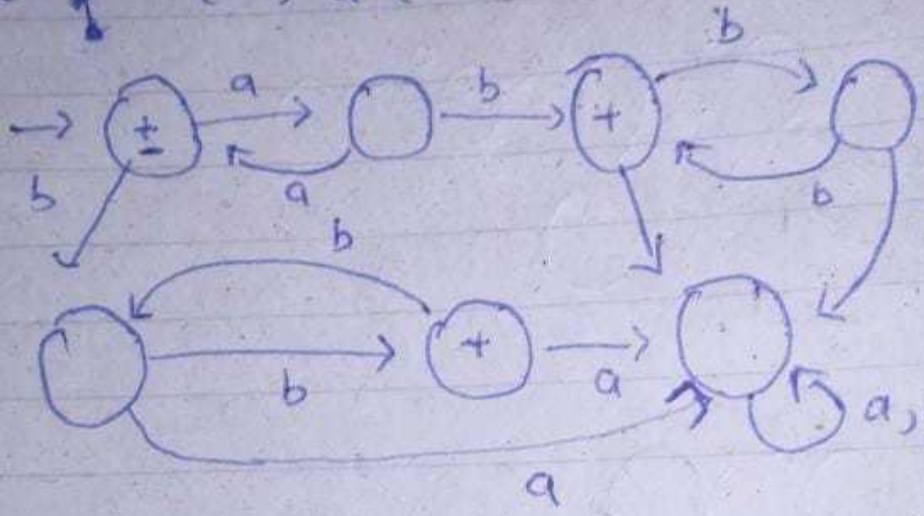
L1 = {

even + even = even

odd + odd = even.

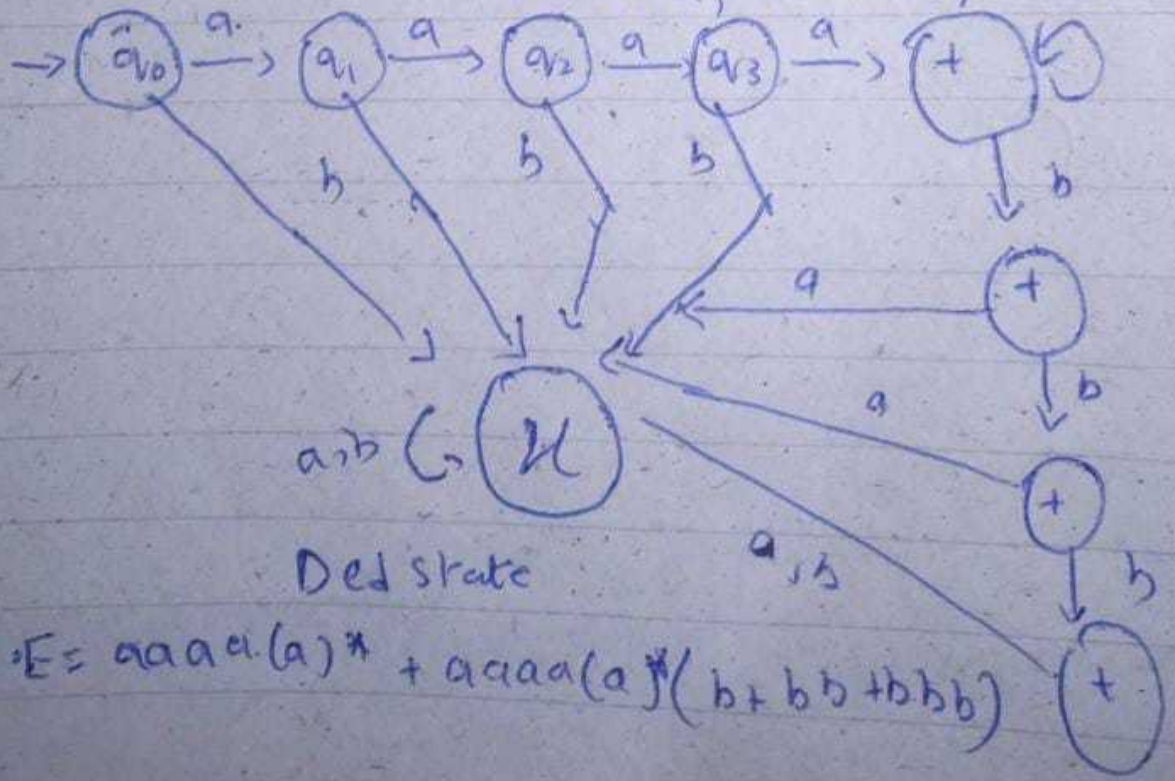
L1 = {ab, abbb, aabb, aaabbb.

R.E = $(aa)^*a(bb)^*b + (aa)^*(bb)^*$



L2 $n \geq 4, m \leq 3$ {aaaa, aaaab, aaaabbb

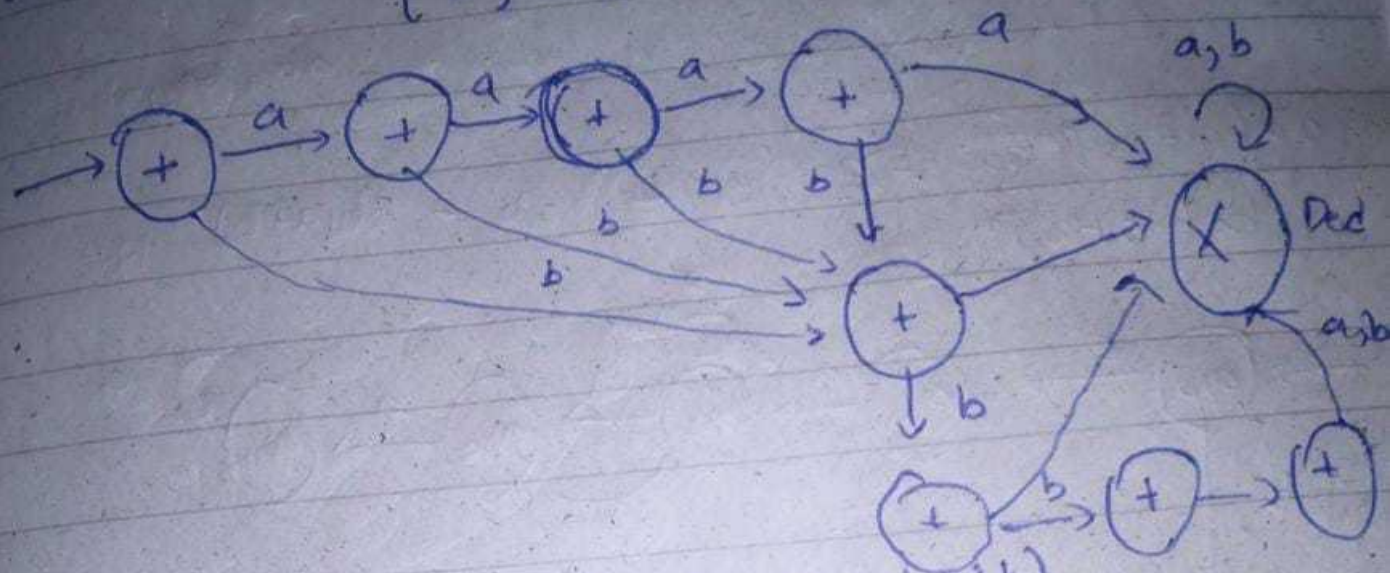
aaaaa, aaaaab, aaaaaabb



Ded state

R.E = aaaa(a)* + aaaa(a)*(b + bb + bbb)

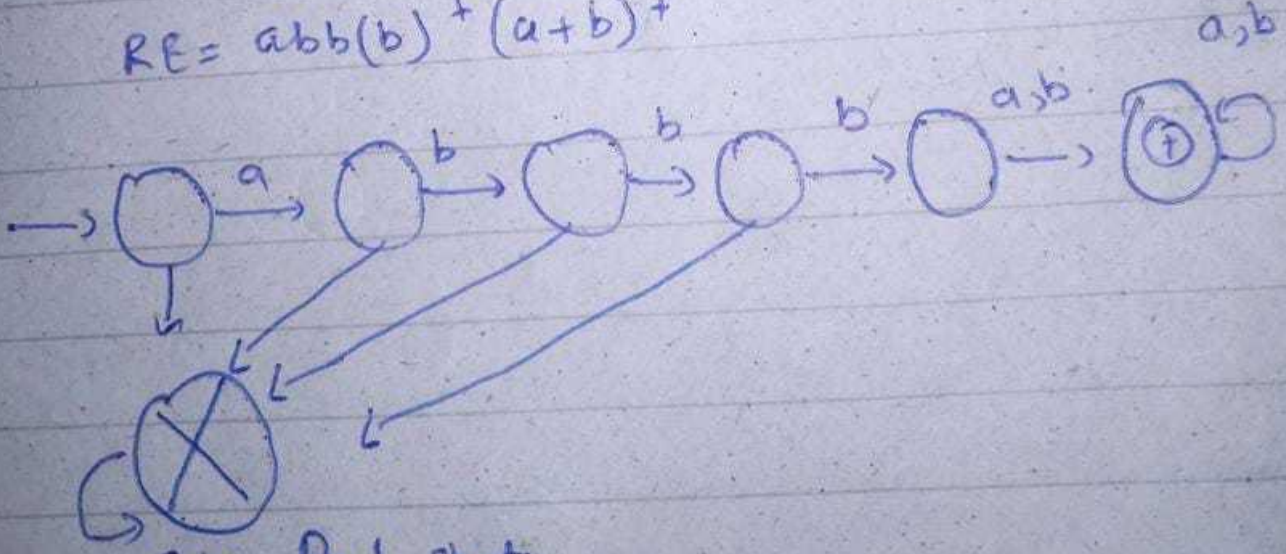
L3: $n<4,\ m\leq 4$ $\{\lambda, a, aa, aaa, b, bb, bbb, bbbb, ab, aab, aabb$



RE = $(a+aa+aaa)(\lambda+b+bb+bbbb)$

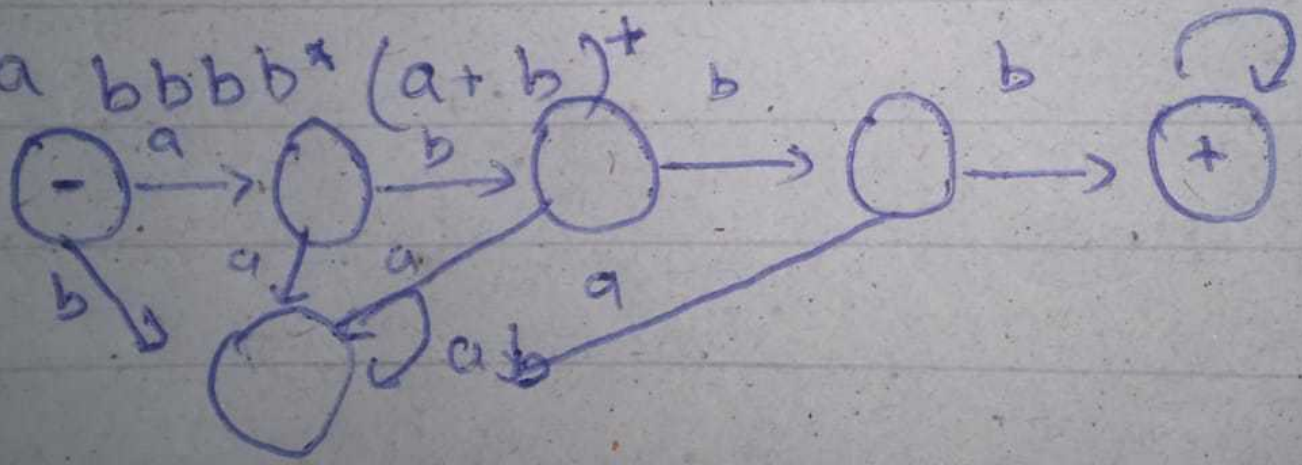
L4: $n\geq 1,\ m\geq 1,\ nm\geq 3$, $L=\{abbba, abbb, abbbbba, abbbbb$

RE = $abb(b)^{+}(a+b)^{+}$



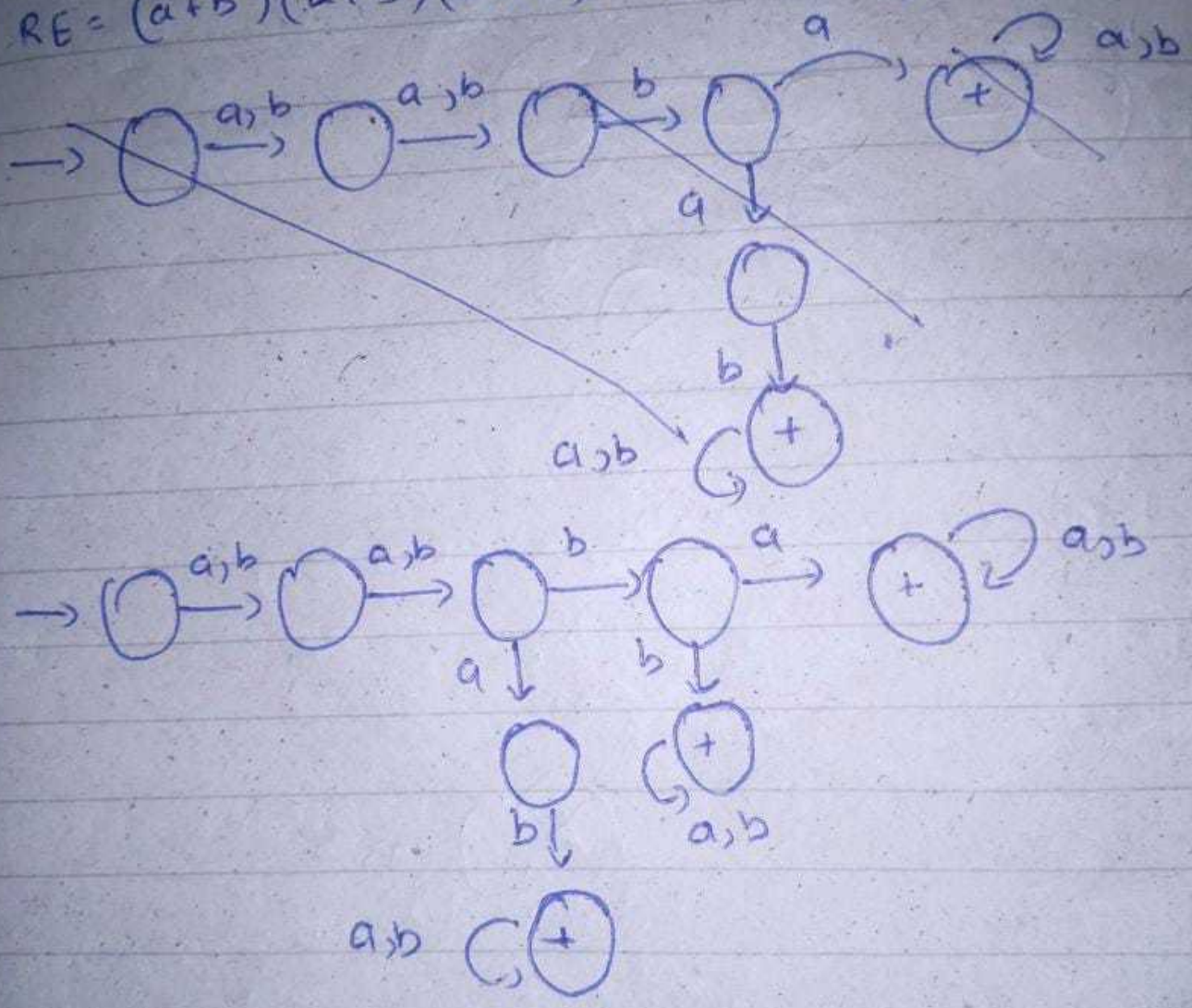
15:

RE : a bbbb* (a+b)+



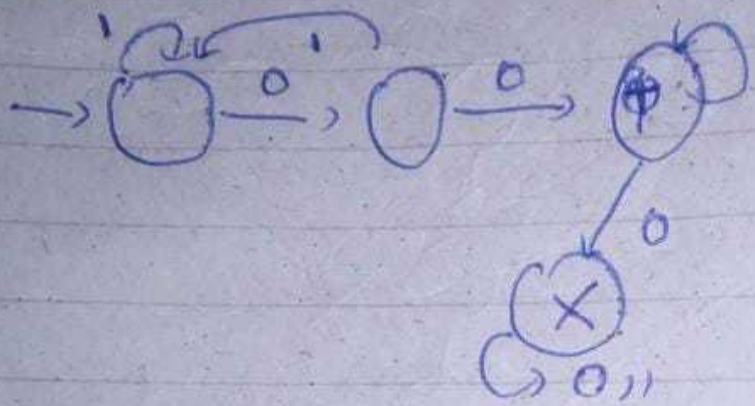
L6 :- VWV L6 = { aabb , aaab , aaba

RE = (a+b)(a+b)(a+b)* (a+b)(a+b)

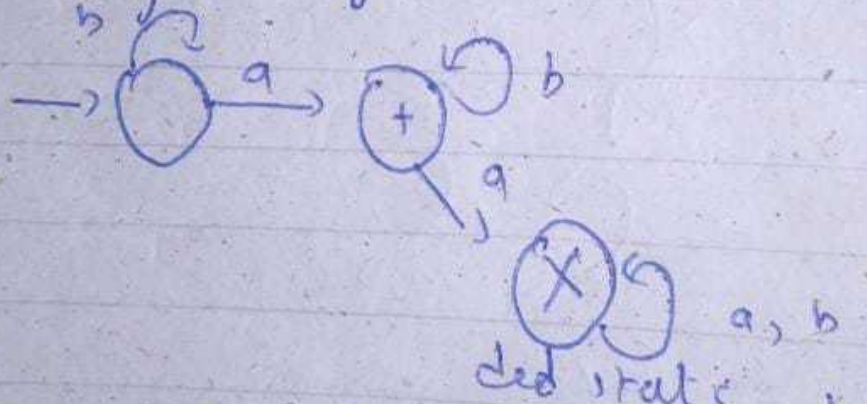


L7: Having exactly one pair of consecutive zeros.

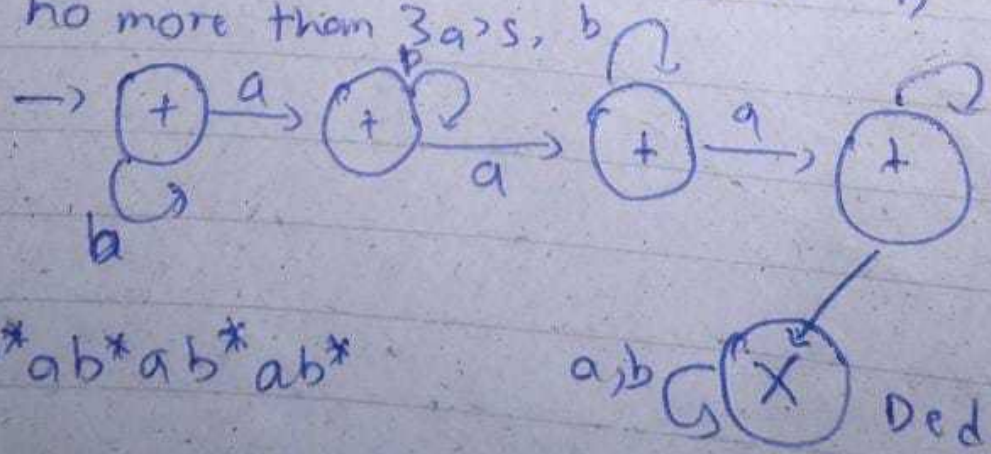
RE = $(1+01)^* 00 (1+10)^*$



L8: Having exactly 1 a's



L9: no more than 3 a's, b

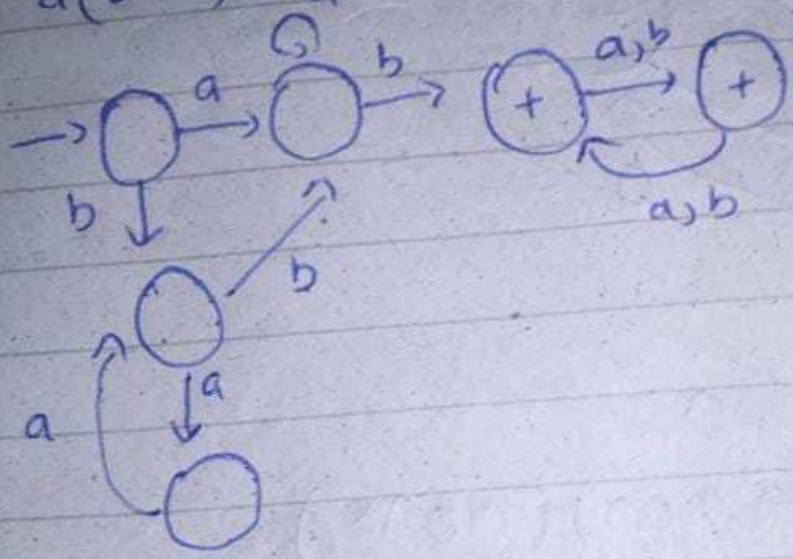


RE = $b^* a b^* a b^* a b^*$

L10: All Letters must occur once

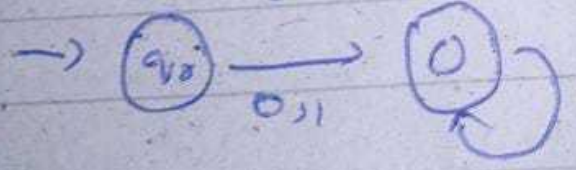
RE = $(a+b)^* a (a+b)^* b (a+b)^* + (a+b)^* b (a+b)^*$

$a(a+b)^*$ a



L11: all strings ending with 0,1

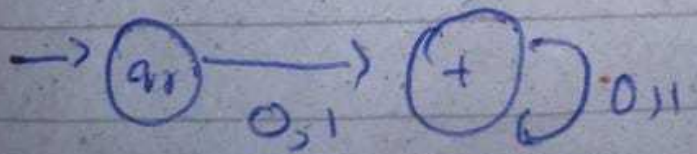
$(0+1)^*$



L12: all strings not ending in 0,1

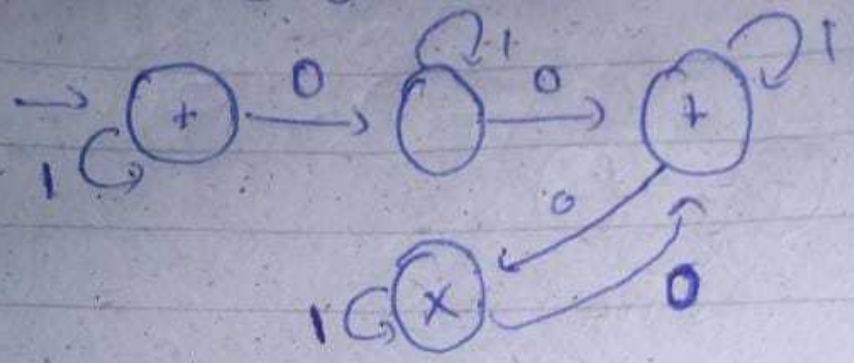
~~$(0+1)^* (1)$~~

R.E = ~~L^*0+1^*~~ $(0+1)^*$



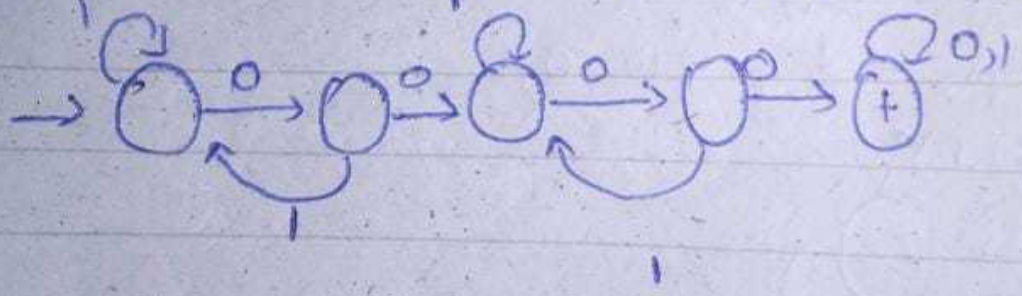
L13: even number of 0's

RE: $1^* + (1^*01^*01^*)^*$



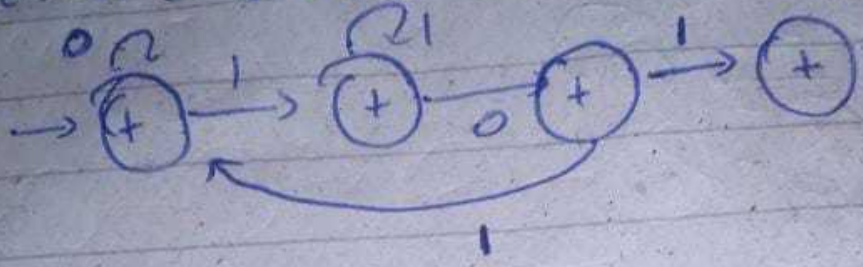
L14: two occurences of '00'.

$((1+0)^*00(1+0)^*00)(1+0)^*)$



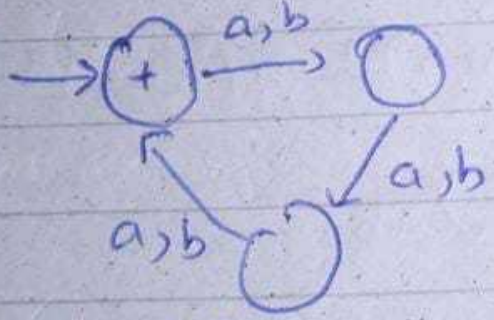
L15: all strings not containing 101

RE: $0^*(1^*000^*)1^*0^*$



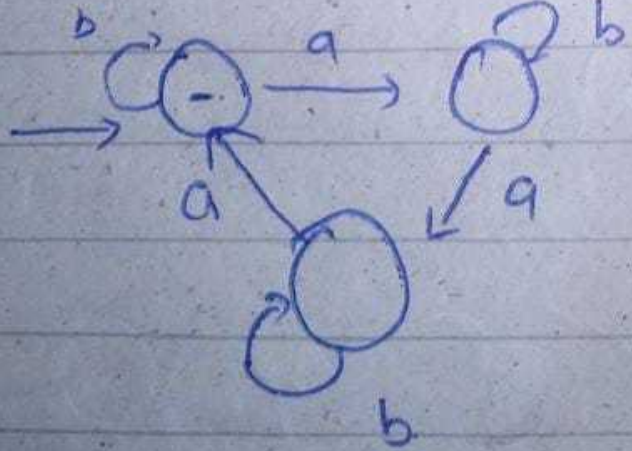
L16: $|w| \bmod 3$

$((a+b)(a+b)(a+b))^*$



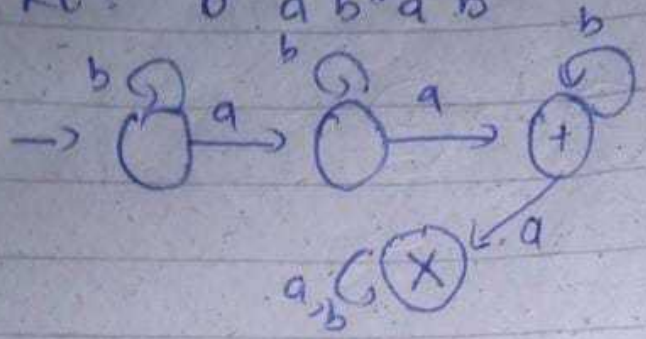
L17: $n_a \bmod 3$

$b^* + (b^* a b^* a b^* a b^*)^*$



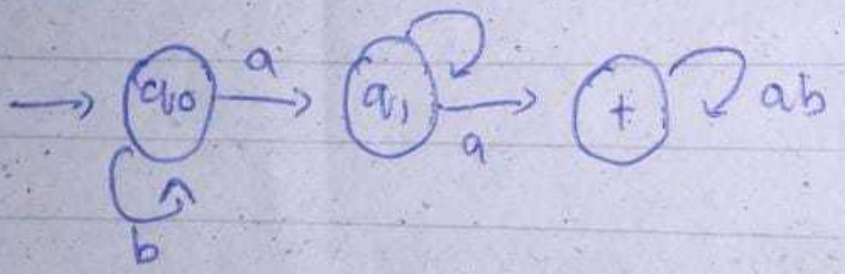
L18: Language of all strings containing exactly two a's

RE: $b^* a b^* a b^*$



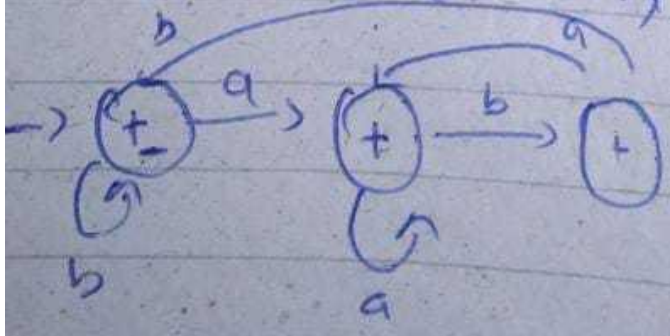
L19: at least two a's.

RE: $(a+b)^* a a (a+b)^*$



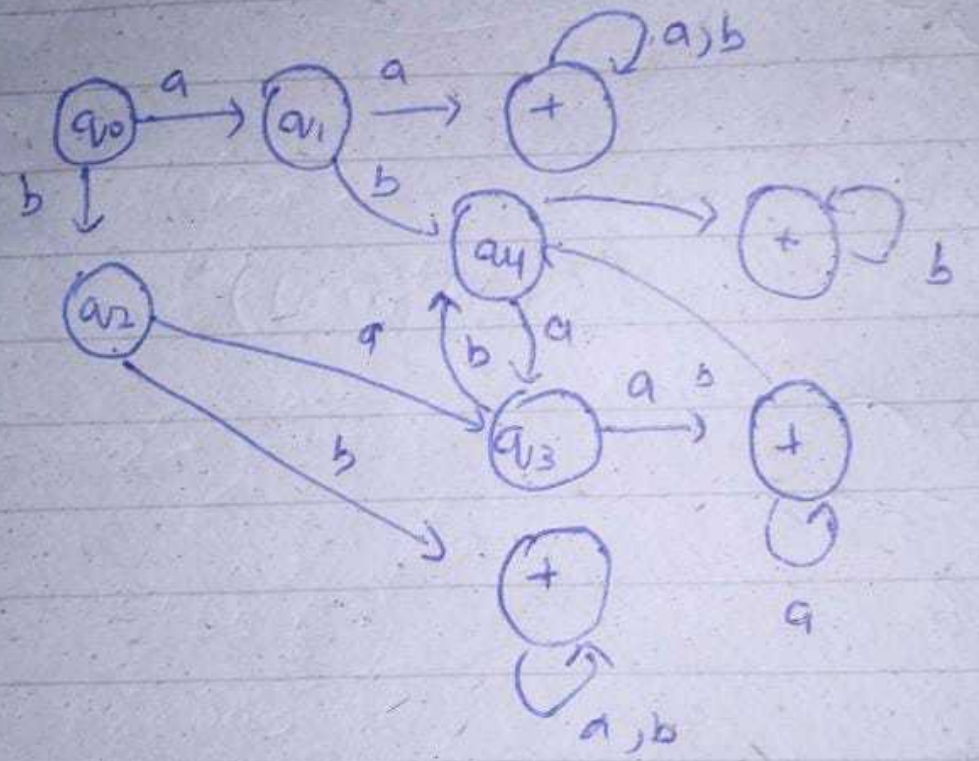
L20: donot end with ab

$(a+b)^*(aa+ba+bb)$

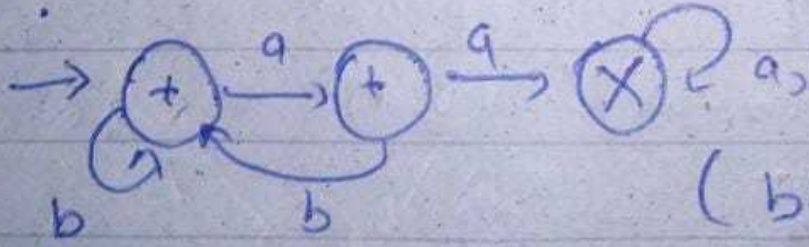


L21: begin with aa or bb

RE: $aa(a+b)^* + (a+b)^*aa + bb(a+b)^* + (a+b)^*bb + aa(a+b)^*bb + bb(a+b)^*aa$



L22: not containing 'aa'

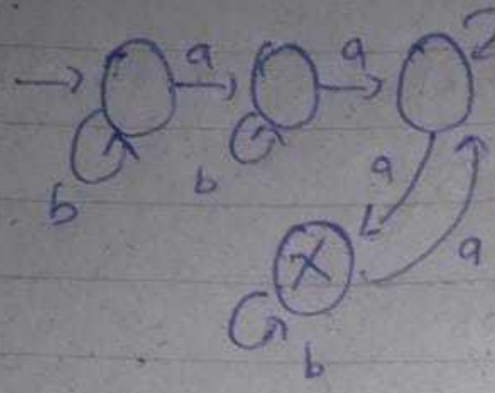


$(b^*ab)^*(\lambda + a)$

Q2: L23: even number of a's

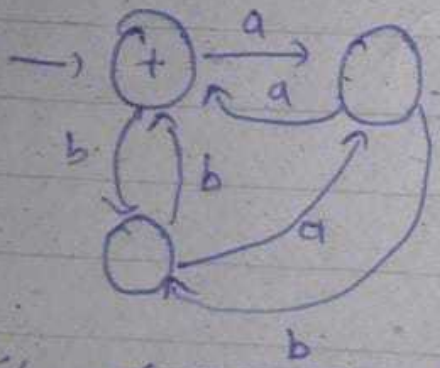
~~(aa)~~

$a(a)^* + (b^*a^*b^*a^*)^*$



L24: even num of a's and b's

$((a+b)(a+b))^*$

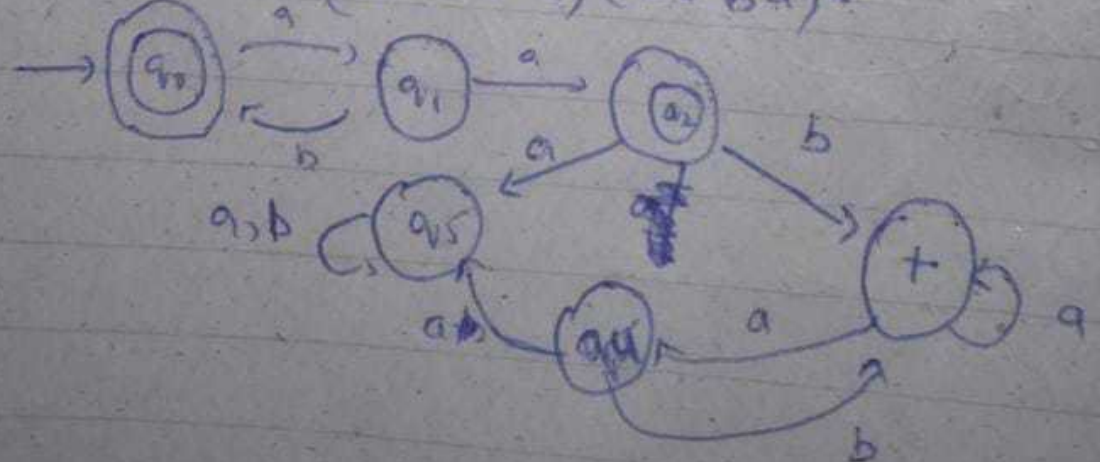


~~L25:~~ a followed by bb

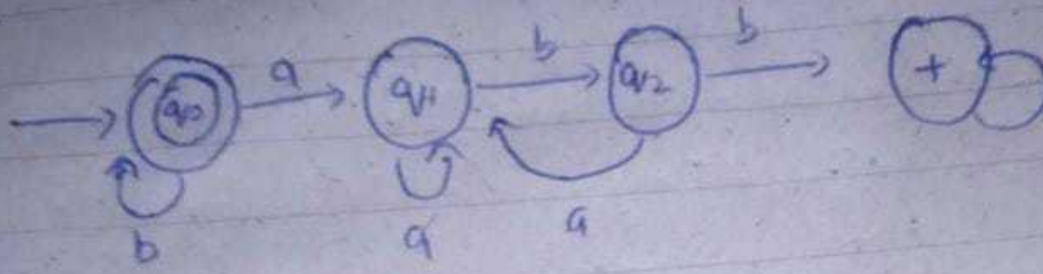
$b^* + (abb+b)^*$

25: no more than 1 occurence of 'aa'

RE = $(b+ab)^*(\lambda+a+aa)(b+ba)^*$

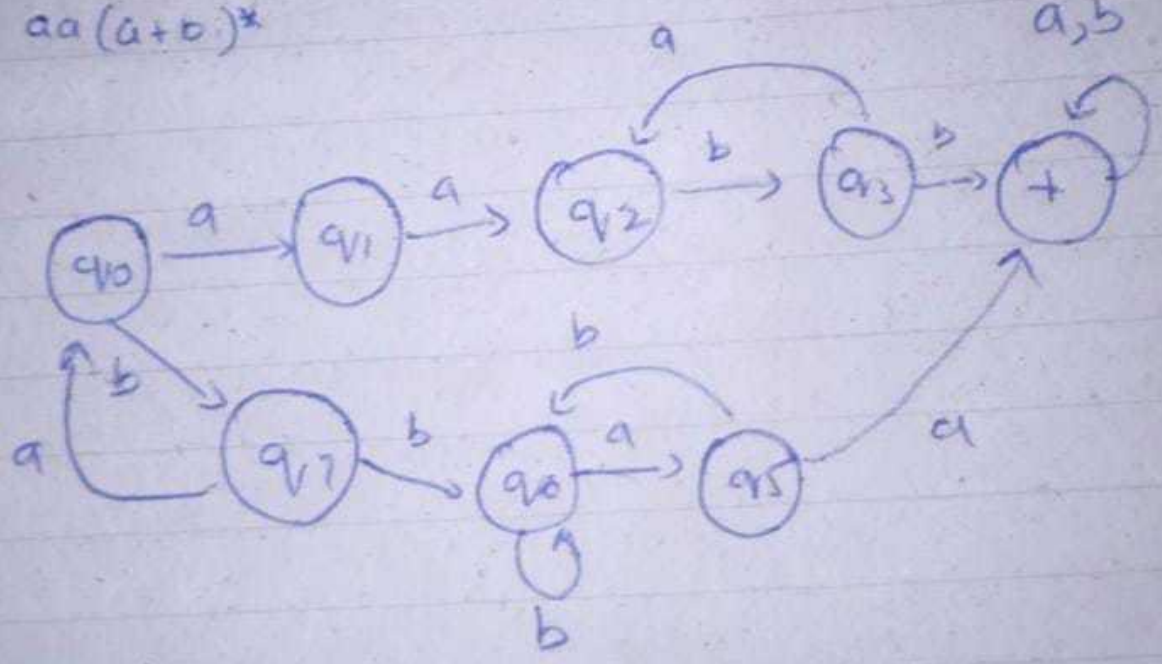


L26: a followed by bb. $b^* + (abb + b)^*$



L27: both bb and aa substrings

RE = $(a+b)^* aa (a+b)^* bb (a+b)^* + (a+b)^* bb (a+b)^* aa (a+b)^*$



L28: $[(a+b)^* abba (a+b)^* b (a+b)^*] + [(a+b)^* baab (a+b)^* a (a+$