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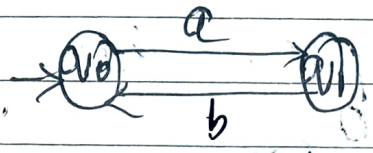
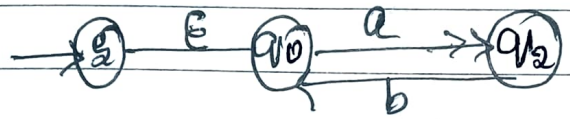
Building RE from FSM (state elimination/ heuristic

initial state should not have any incoming edge if present create a new initial state

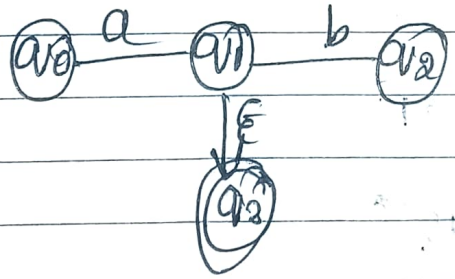
Ex





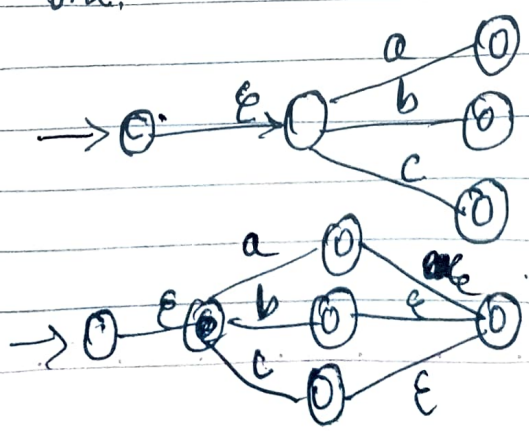
final state should not have outgoing edge if present create a new non final state we will make ~~intended~~ final state as a non final state

Ex:-



there should be only one final state if there multiple final states combine into one.

Ex:-



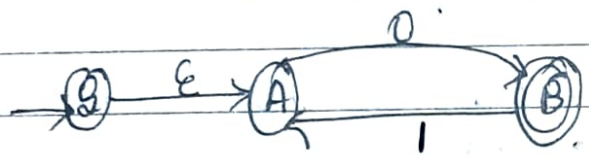
other than initial state & final state. eliminate all other state one by one

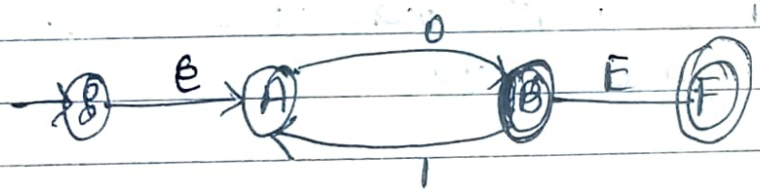
problems

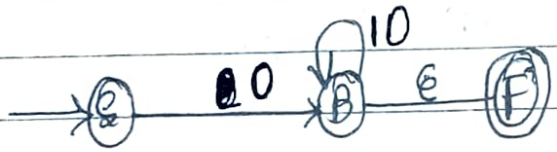
obtain regular expression from given FSM

i)

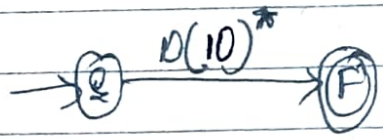
ed





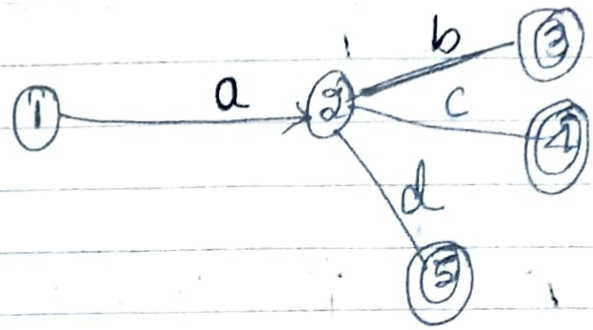


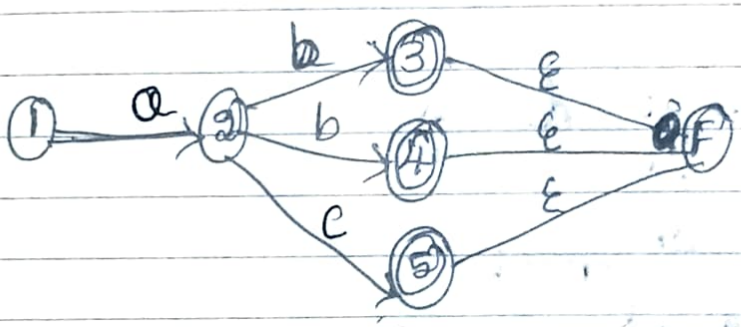
ed

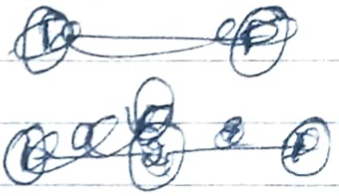


$RE = 0(10)^*$

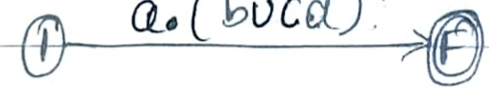
(2)







bucd



RE = a.(bucud)

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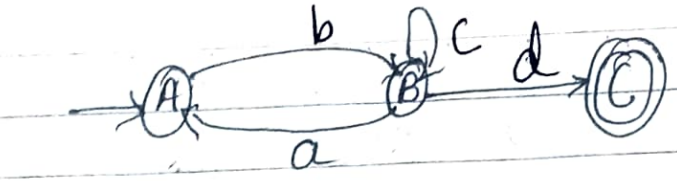
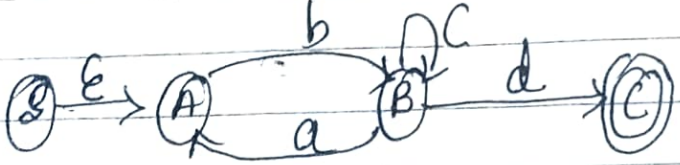
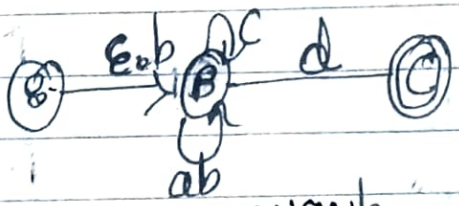
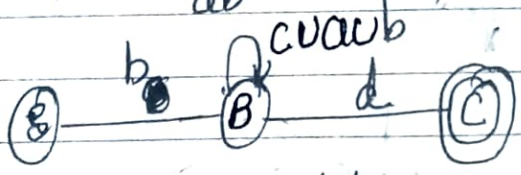
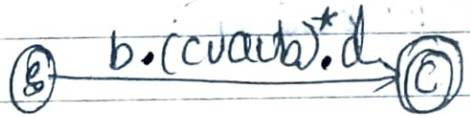
(3)





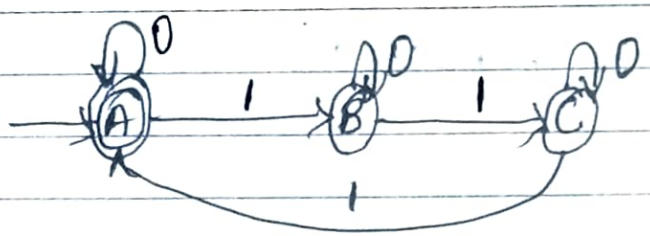


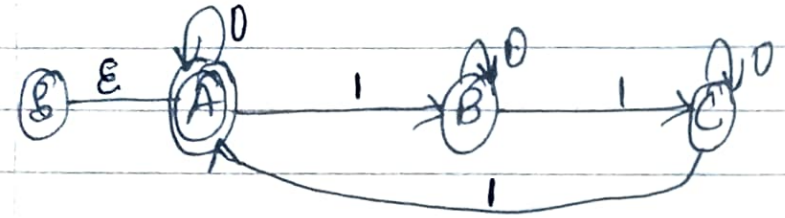


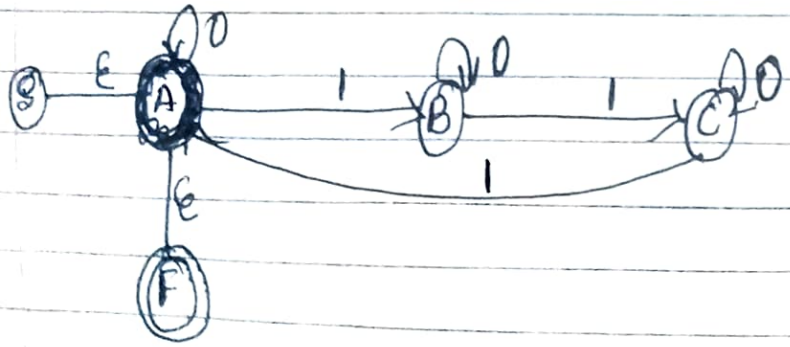


RE = b.(cvavb)*.d.

(4) ★★★







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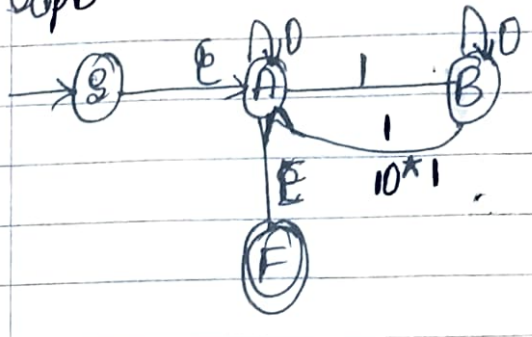
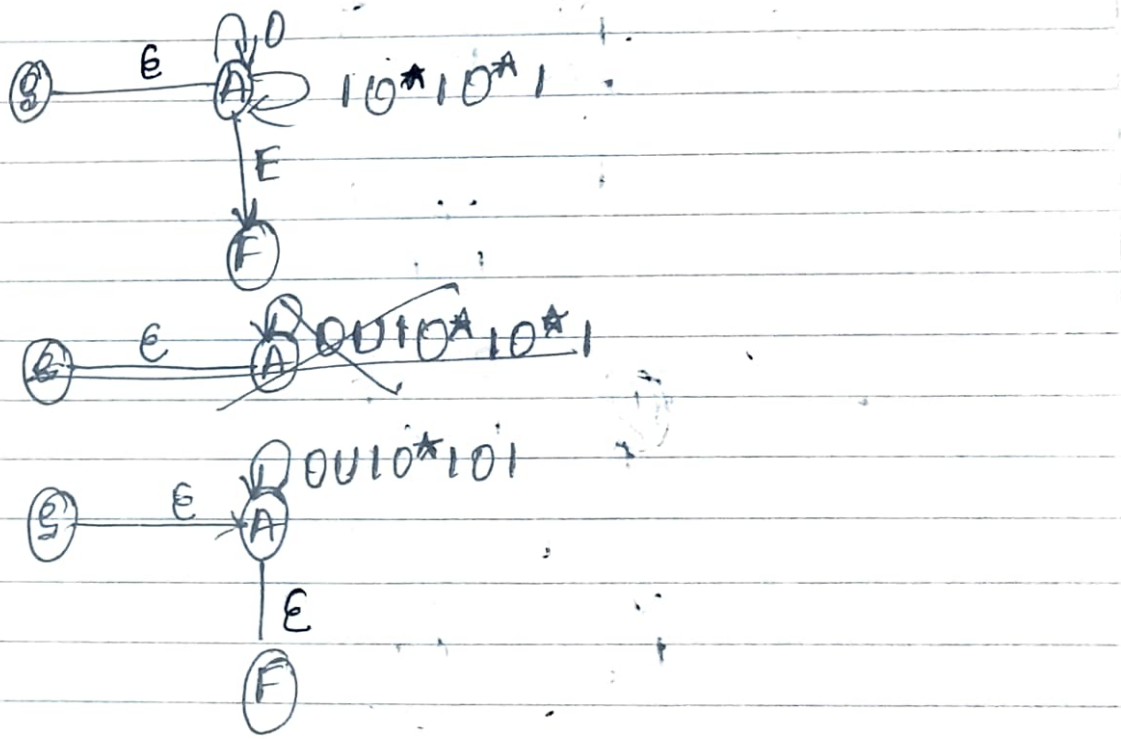
elim B



elim B

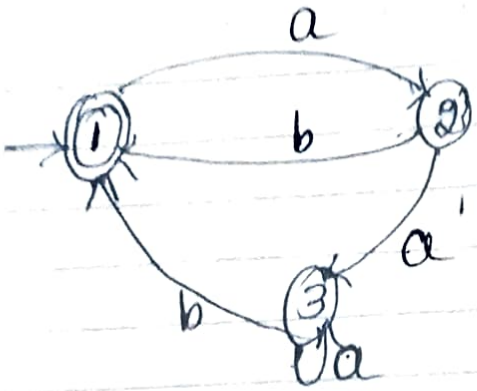


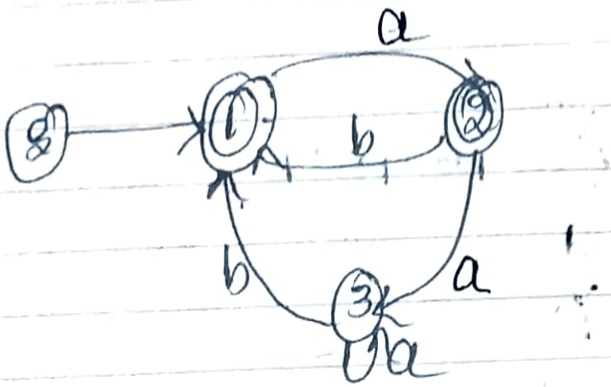
elim A

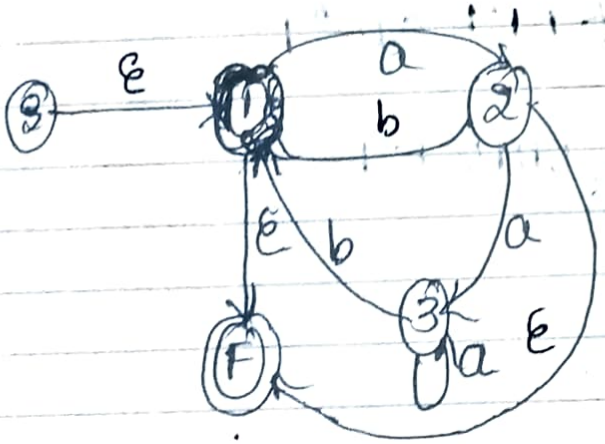
$$RE = (0U10^*10^*1)^*$$

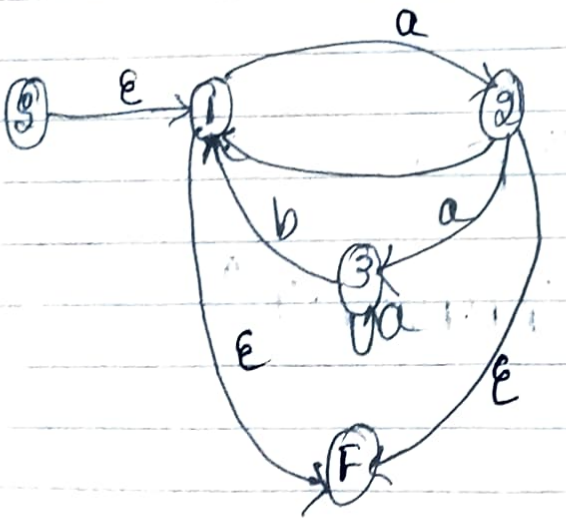
(b)

★★★

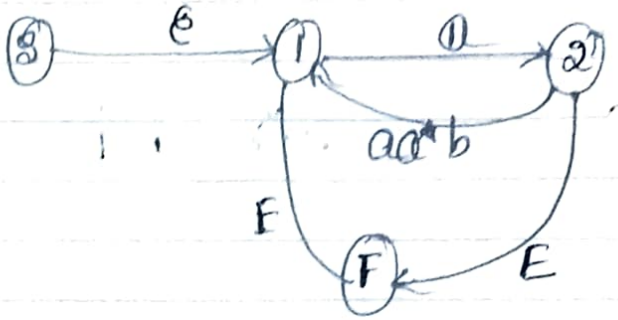




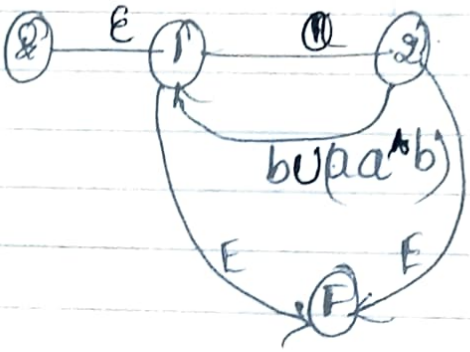


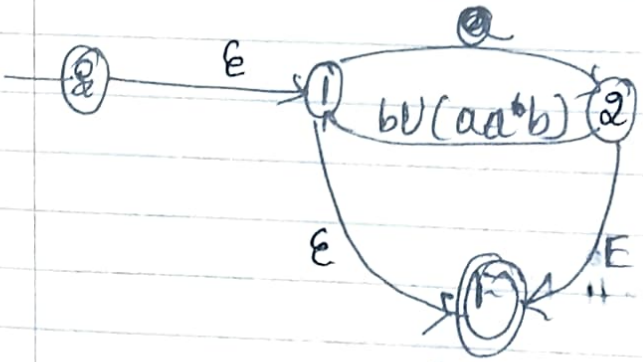


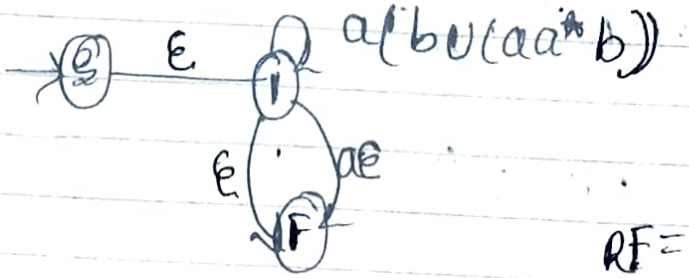
ans 3



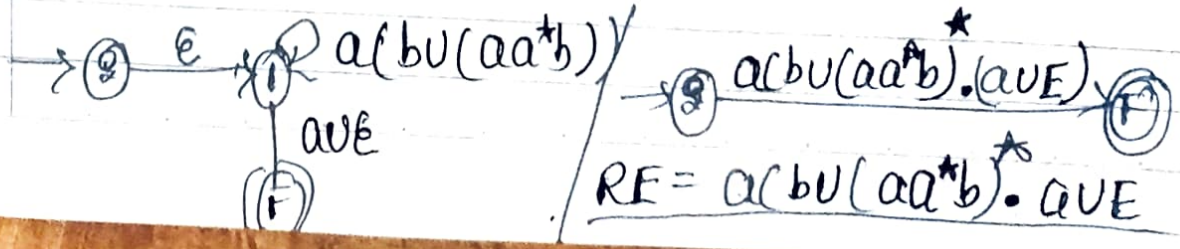
ans (2)





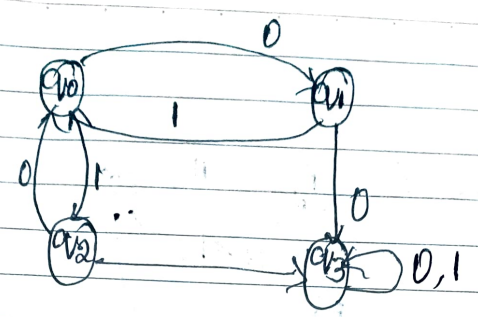


$RE = (abU'aaa^*b)^{\star}.(aUE)$

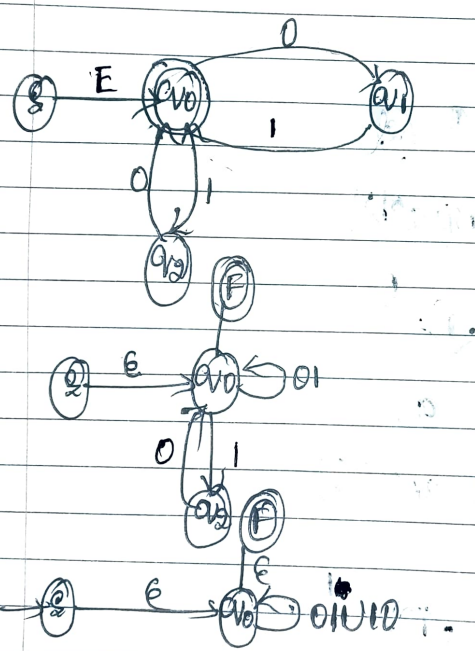


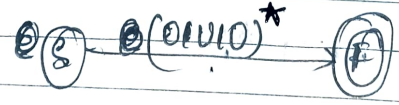
$RE = a(bU(aa^*b)^{\star}.aUE$

6



q_3 is unreachable, so remove q_3





RE = $(01U10)^*$