Name - Aryans Rathi

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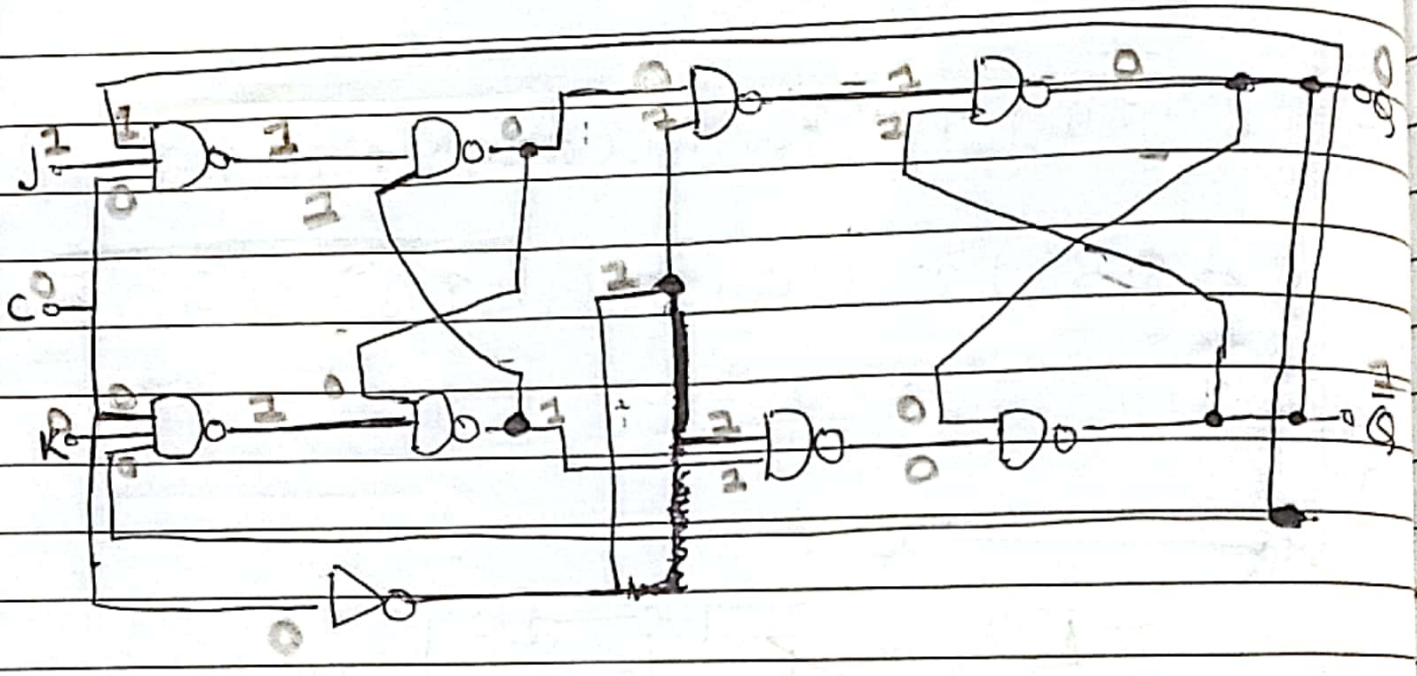
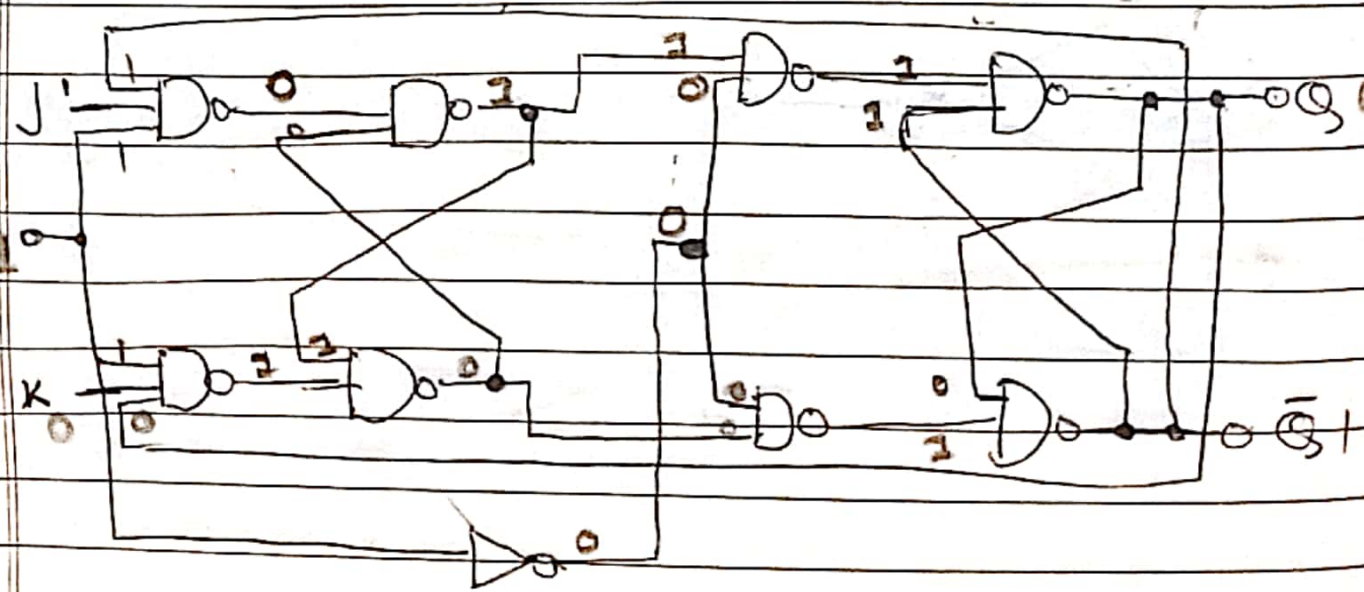
ICS Homework - 9

0.1@



J = 1 C = 0 K = 0 Q = 0 $\bar{Q}$ = 1

(b) when J = 1, C = 1, K = 0, Q = 0, $\bar{Q}$ = 1



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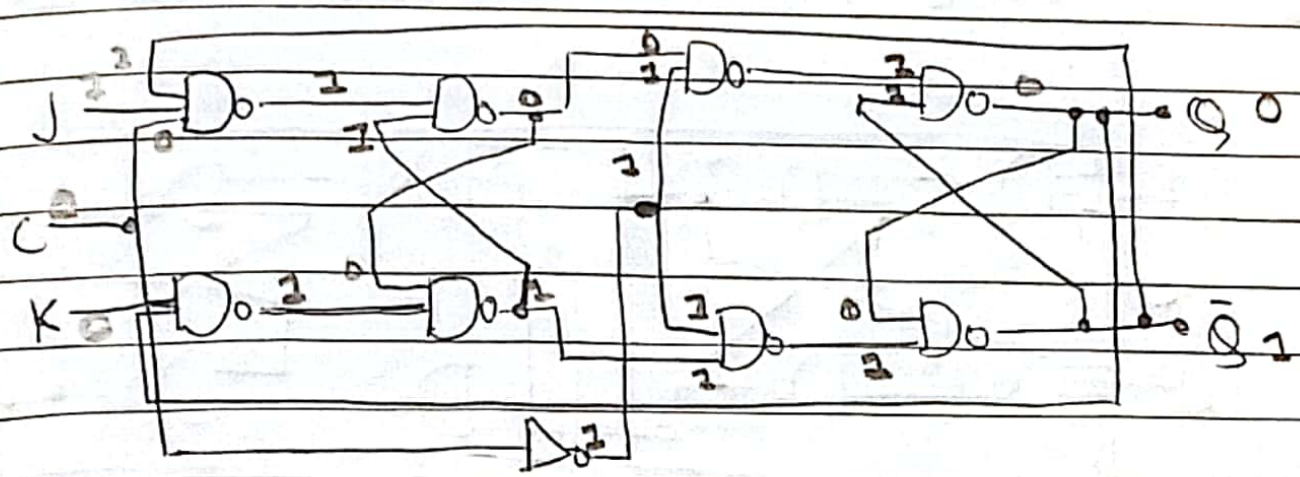
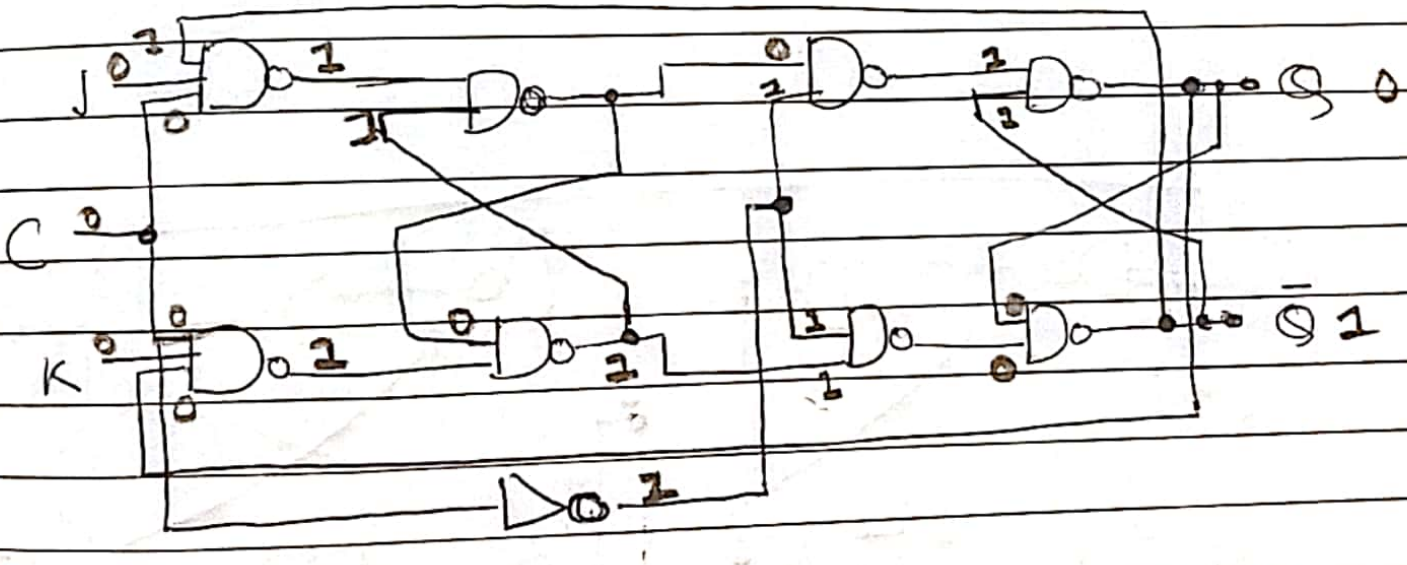
(b)

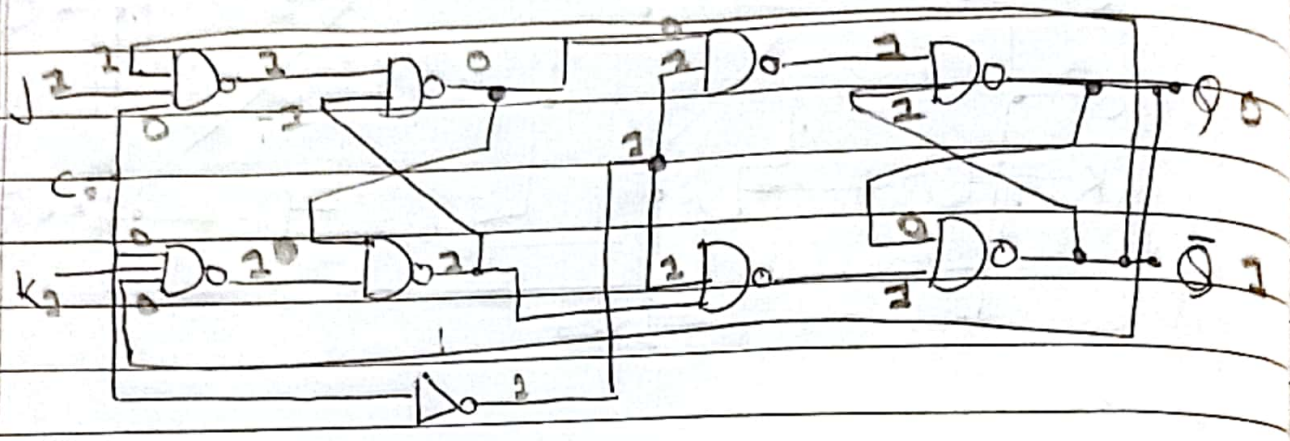
when J = 1 C = 0 K = 0 Q_n = 0 $\bar{Q}$ = 1



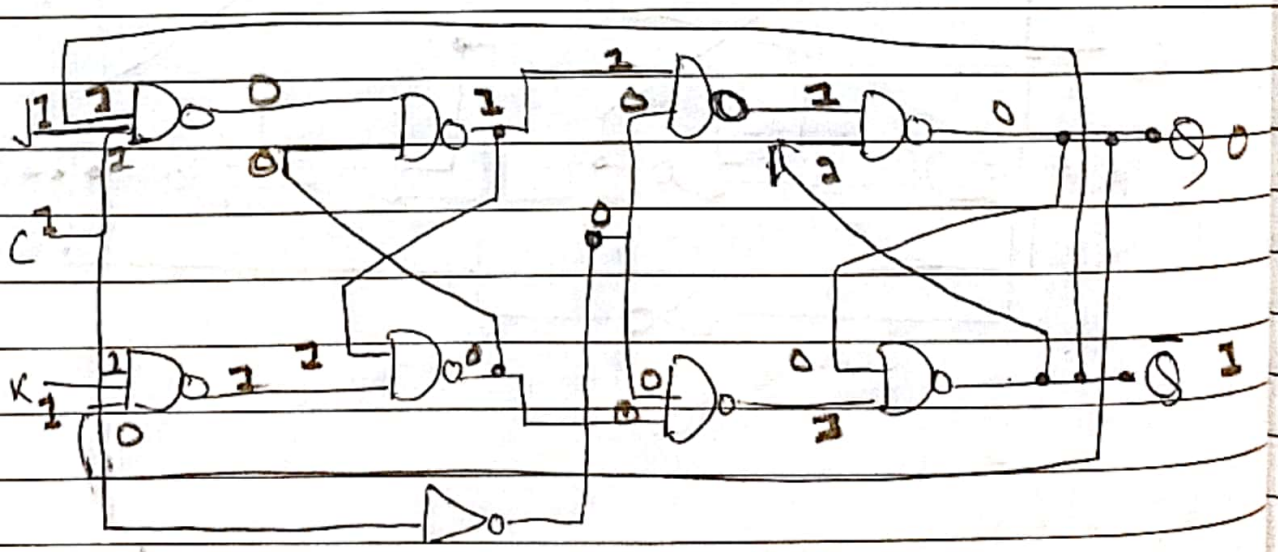
when J = 0 C = 0 K = 0 Q_n = 0 $\bar{Q}$ = 1



(c) when J = 1 K = 1 C = 0 Q = 0 $\bar{Q}$ = 1



when J = 1 K = 1 C = 1 Q = 0 $\bar{Q}$ = 1



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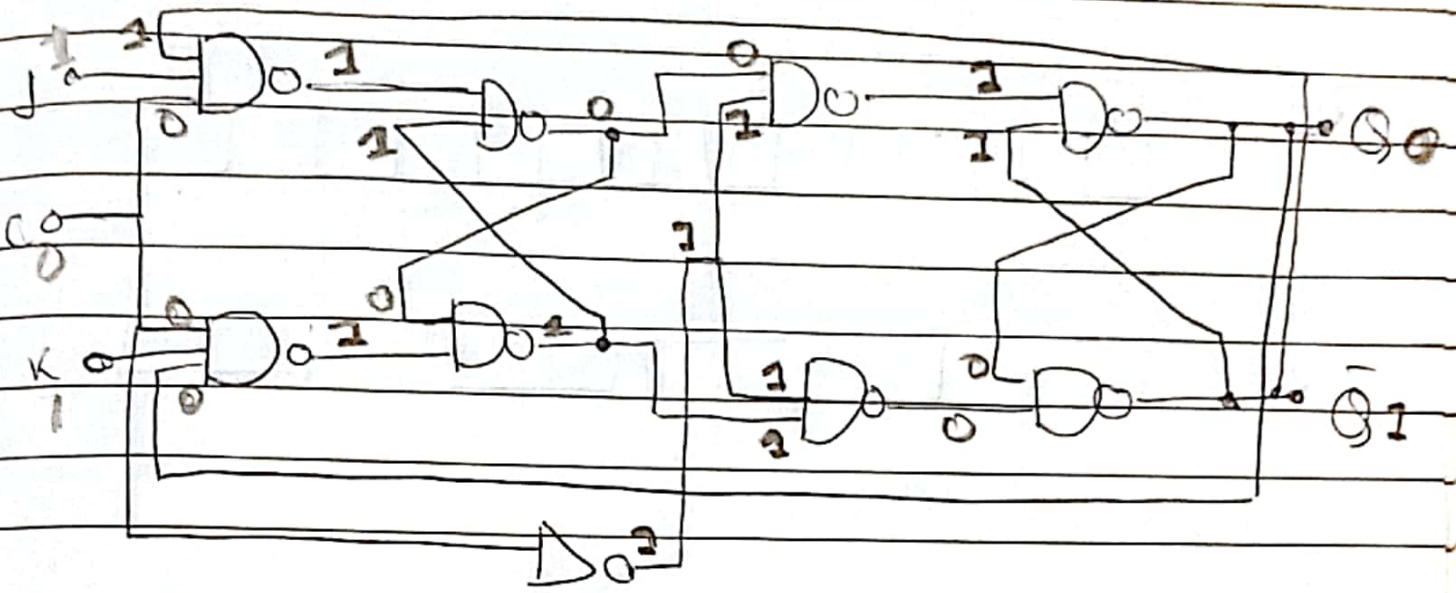
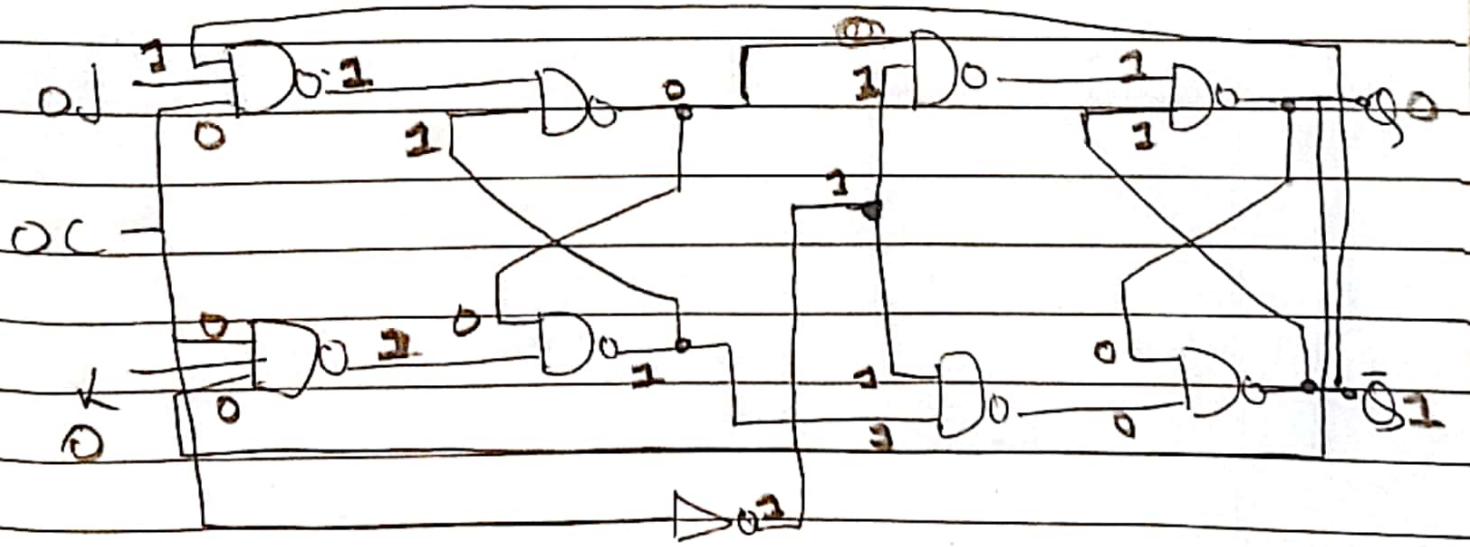
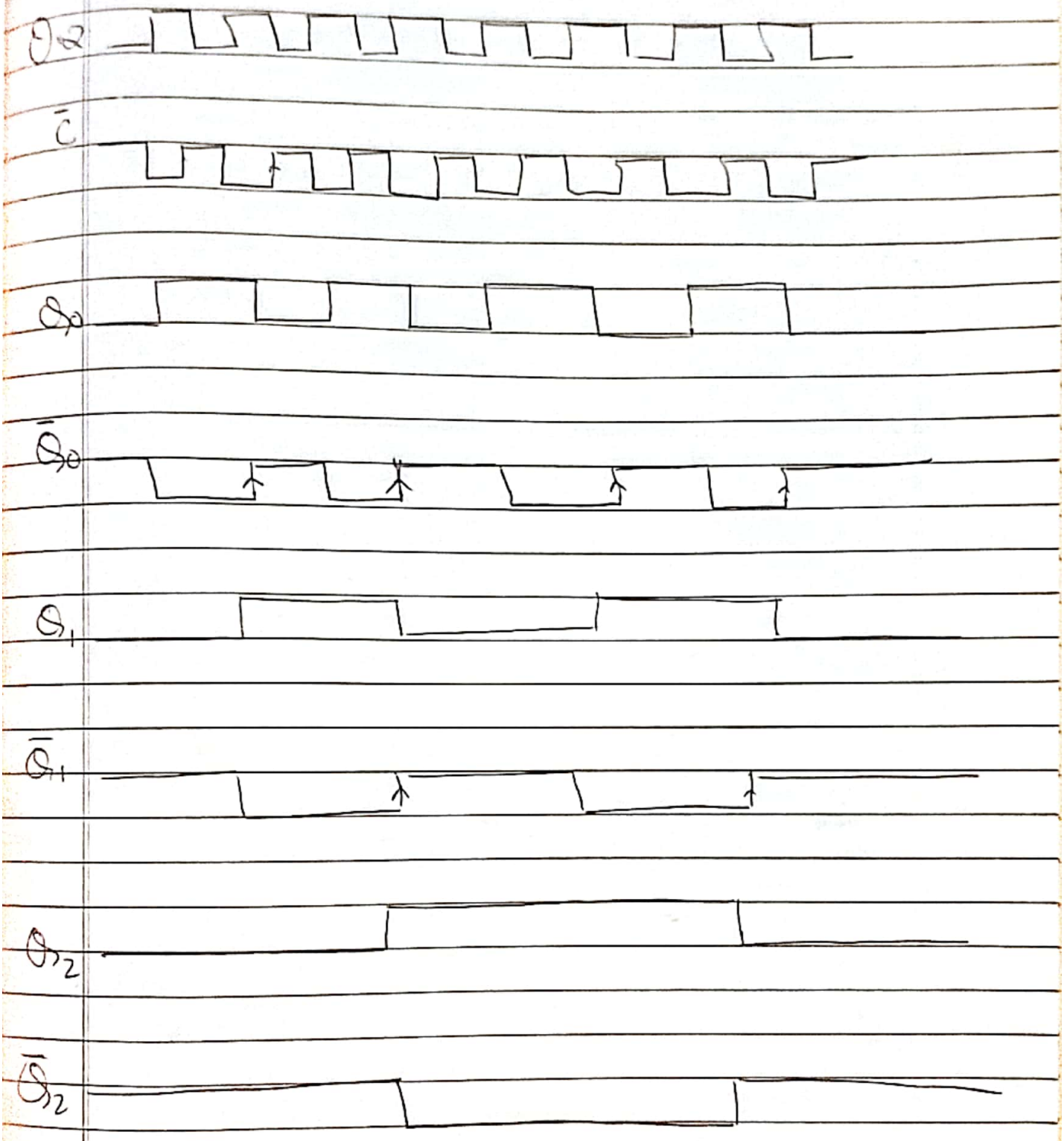
(d) when J = 1 K = 1 C = 0 Q = 0 $\bar{Q}$ = 1



when J = 0 K = 0 C = 0 Q = 0 $\bar{Q}$ = 1





(b) Ripple counter cannot be made arbitary long due to the presence of gate delays. The gate delays will sum as the index of Q increases. Defeating the purpose of circuit.