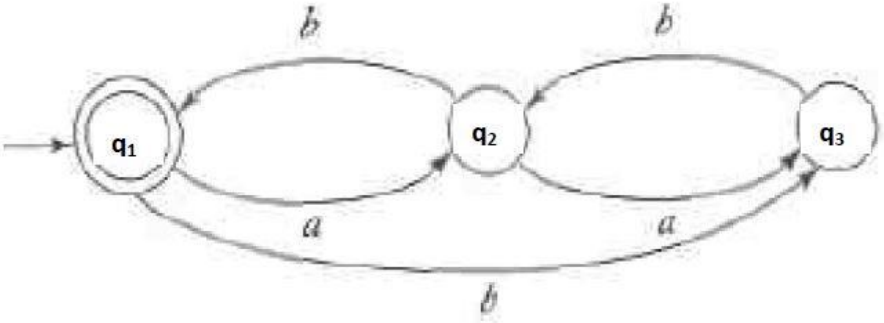
1) a). Give regular expression for the language
L1 = {anbn : n>=4, m<=3}

b). Give regular expression for
L2 = {anbn : n+m is even)

c). Give regular expression for L= {w: |w| mod 3 =0} on alphabet {0,1}.

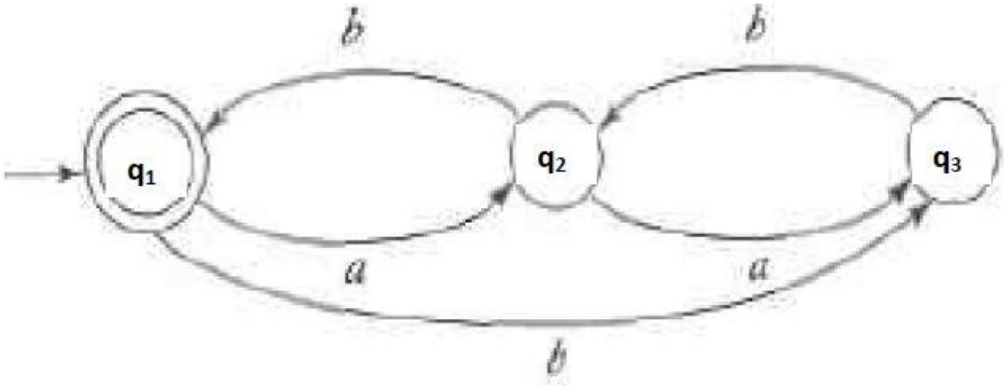
3) Write and explain the procedure to convert NFA to regular expression and apply the same to following NFA to find regular expression



4 Prove that

If L is a regular language on the alphabet Σ, then there exists a right-linear grammar $G = (V, \Sigma, S, P)$ such that $L = L(G)$.

And apply the same to the following NFA



5. State and prove pumping lemma for regular language and show that the language $L=\{a^n b^l : n \text{ not equal to } l\}$ is not regular