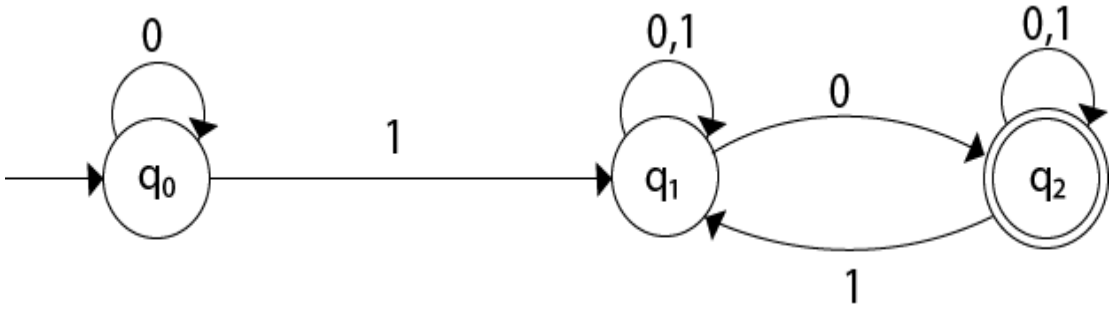
Q1. Construct a DFA , which accept **Odd number of 0's and even number of 1's**

Q2. Design a FA which accept **(a|b)*ab(a|b)***

Q3. What are the closure properties of Regular Language? What is the use of pumping lemma.

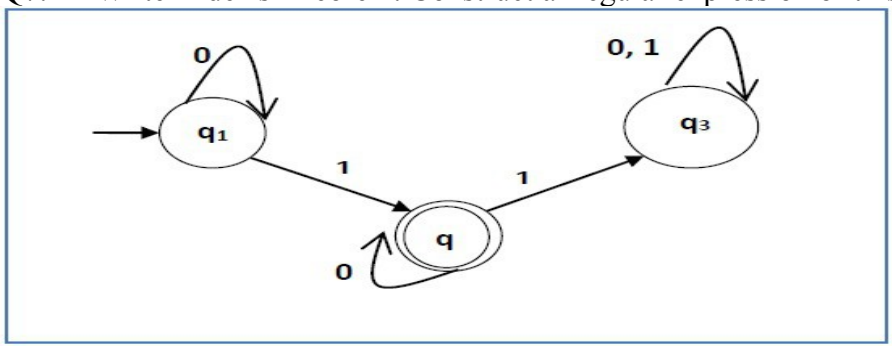
Q4. Convert NFA to DFA



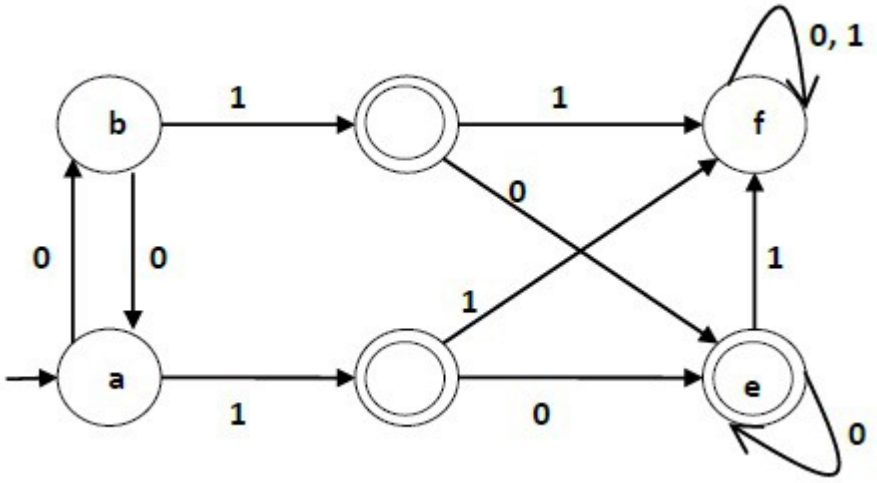
Q5. Define Chomsky Hierarchy of Language.

Q6. What is the language accepted by PDA. Explain with an example of it.

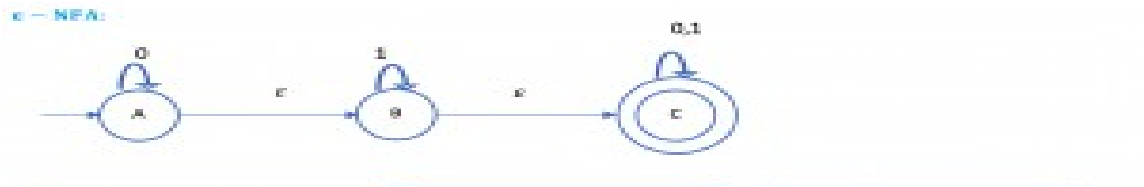
Q7. Write Arden's Theorem. Construct a Regular expression of this Finite Automaton.



Q8. Minimize the DFA



Q9. Convert epsilon NFA to NFA



Q10. What is the closure properties of CFL? Explain it.

Q11. Write the Church Turing Hypothesis.

Q12. Prove the TM Halting Problem is Undecidable.

Q13. Find whether the lists
M = (abb, aa, aaa) and N = (bba, aaa, aa) have a Post Correspondence Solution?

Q14. Design a Push-down Automata which accept $a^n b^n$.

Q15. What is Goodel Number. Find out the Goodel number of the the Goödel number for the symbol "0" is 6 and the Göodel number for the symbol "=" is 5. Thus, in their system, the Göodel number of the formula "0 = 0" is

16. Explain CYK Algorith.
Given a grammar *G* with productions:
S -> AB | BC *A -> BA | a*
B -> CC | b *C -> AB | a*
Test *w = baaba* is generated by *G*.

Q17 Construct a Turing Machine for language L = $\{0^n 1^n 2^n \ n \geq 1\}$

Q18. Define Mealy and Moore Machine.

Q19. Show that the following Grammar is Ambiguous.
Set of alphabets ∑ = {0,…,9, +, *, (,)}
E -> I
E -> E + E
E -> E * E
E -> (E)
I -> ε | 0 | 1 | … | 9

Q20. Solve by using Ackerman's Function A(4,3).

Q21. Convert the CFG to CNF
S → ASB A → aAS|a|ε B → SbS|A|bb

Q22. Convert the CFG to GNF

S → XB |AA A → a|SA B → b X → a