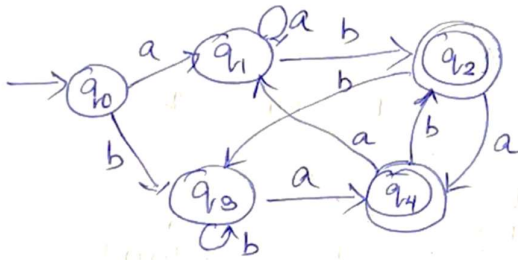


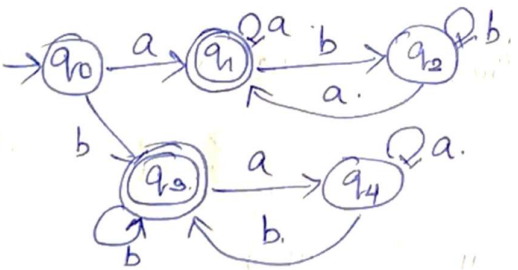
TUTORIAL – 1 (DFA)

I. Recognize the languages accepted by the following DFAs

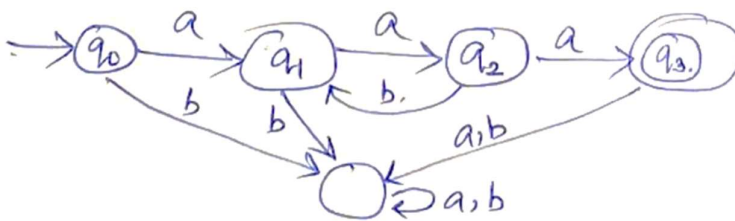
a)



b)



c)

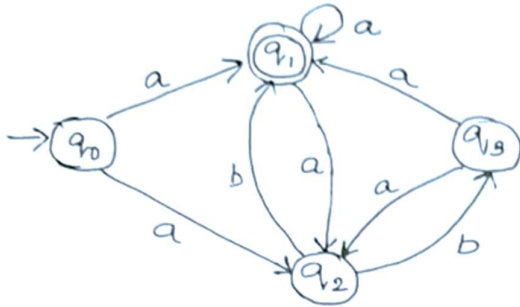


II. Design DFA to recognize strings in the following language:

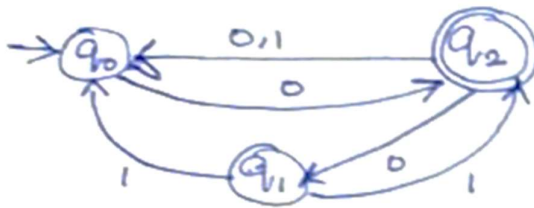
- a) $L_1 = \{w \mid w \text{ contains even no of } a\text{'s and even no. of } b\text{'s, } \Sigma = \{a,b\} \}$
- b) $L_2 = \{w \mid w \text{ contains } 0110 \text{ or } 1001, \Sigma = \{0,1\} \}$
- c) $L_3 = \{w \mid w \text{ is a binary string with atleast two ones and atmost two zeros, } \Sigma = \{0,1\} \}$
- d) $L_4 = \{w \mid w \text{ has } n_a(w) \% 3 \geq n_b(w) \% 4, \Sigma = \{a,b\} \}$
- e) $L_5 = \{w \mid \text{No of consecutive } 1\text{'s in } w \text{ is } 0 \text{ or multiple of } 4, \Sigma = \{0,1\} \}$

III. Convert the following NFA to DFA using Subset Construction method.

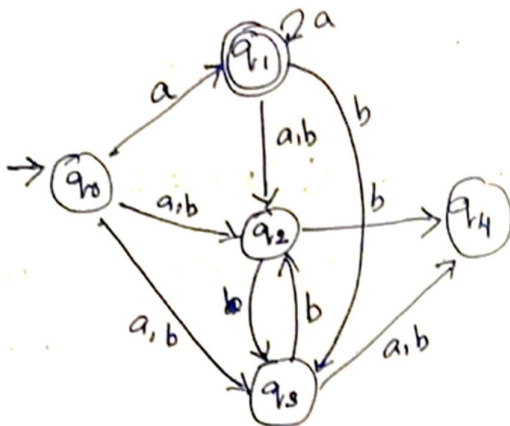
a)



b)



c)



d)

