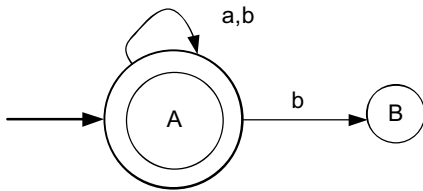


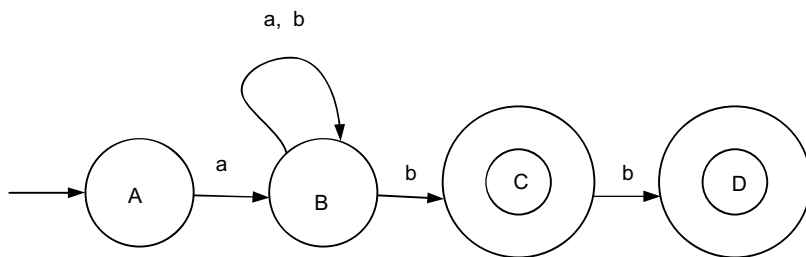
Tutorial 3

1. Convert each of the following NFA's in to DFA's.

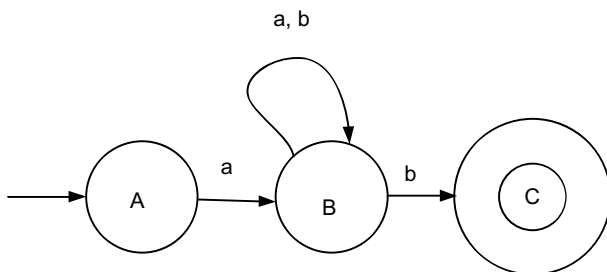
(a)



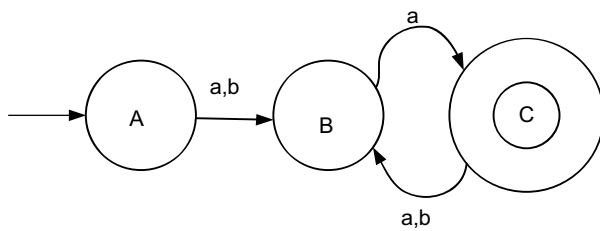
(b)



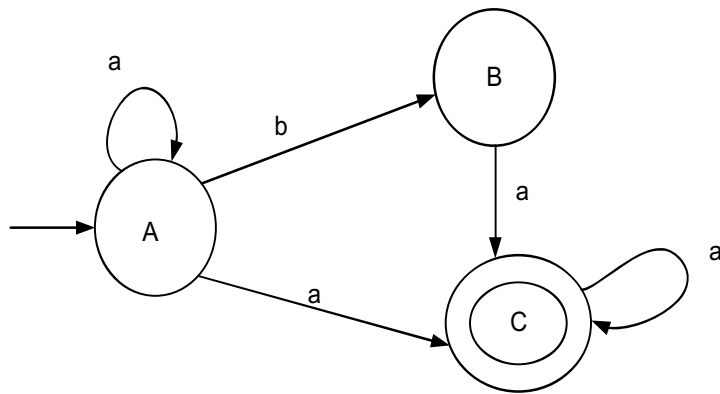
(c)



(d)



(e)



2. Minimize the following DFA's.

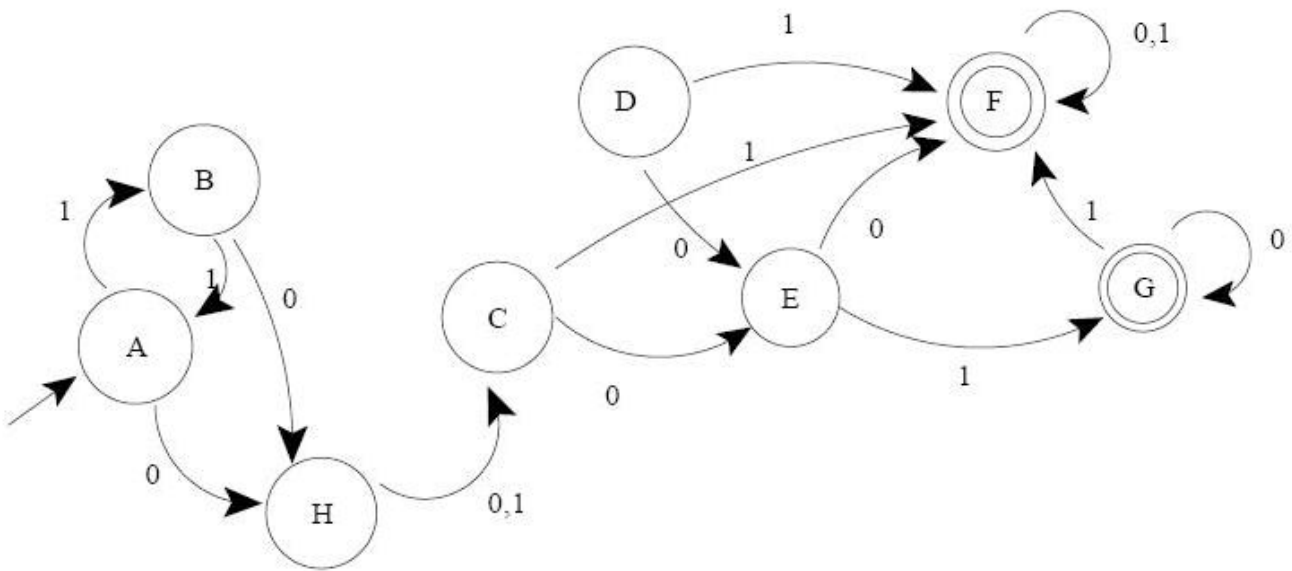


Figure 1

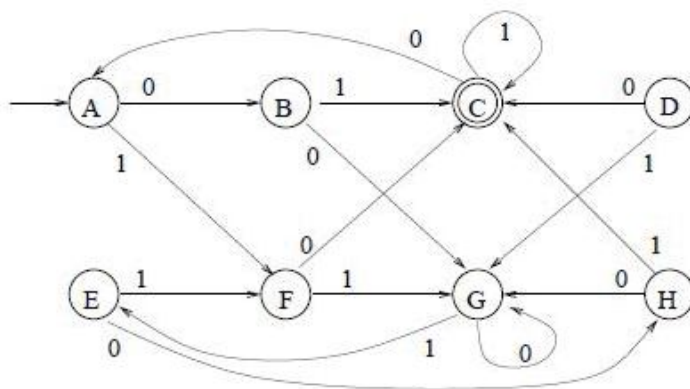
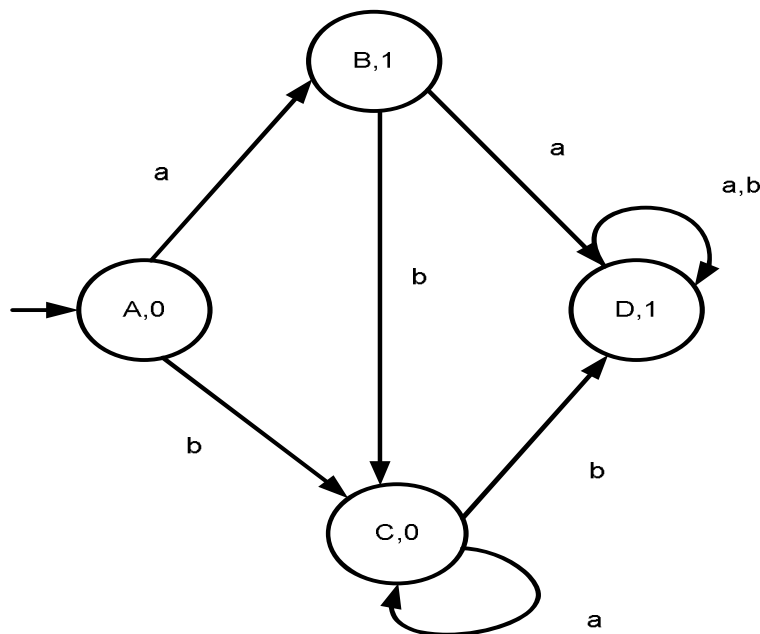


Figure-2

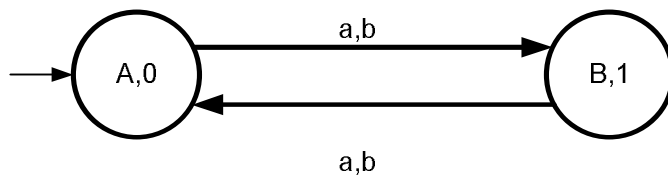
TUTORIAL 4

1. Design a Moore machine over $\Sigma = \{a, b\}$ which counts the occurrences of substring aab in the input string.
2. Design a Moore machine which determines the residue mod-3 for each binary string treated as binary integer.
3. Design a Mealy machine which calculates residue mod-4 for each binary string treated as a binary integer.
4. Design a Mealy machine which can output EVEN (E) ODD (O) according as total number of 1's encountered is even or odd. The input symbols are 0 and 1.
5. Design the Mealy and Moore machine for the following processes. For input from $(0+1)^*$, if the input ends in 101, output A; if input ends in 110, outputs B, otherwise output C.
6. Convert the following Moore machine into Mealy machine:

(a.)

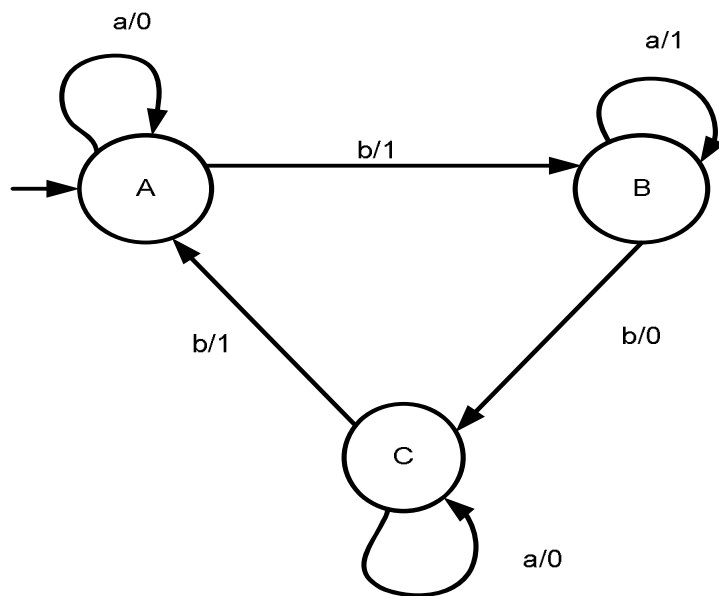


(b)



7. Convert the following Mealy machine into Moore machine:

(a.)



(b)

