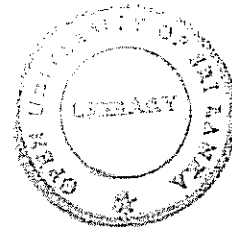
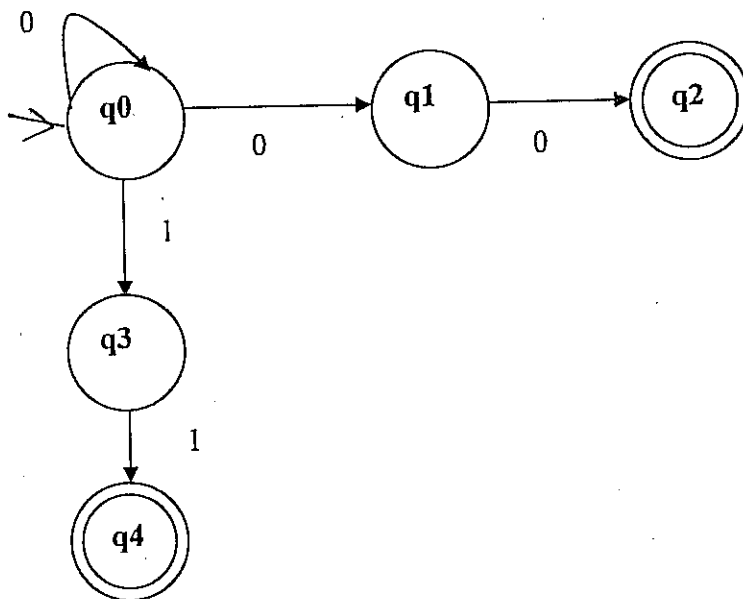




Answer All Questions.

1. Design the equivalent DFA for the following NFA using the subset construction method.



- a) Differentiate DFAs and NDFAs.
 - b) Construct the transition table.
2. Construct and define a DFA to accept strings that start and end with the same letter over an alphabet $\{a,b\}$ and minimum length of the string is 2. The state transition table should also be provided.

3. Consider the DFA given by the following transition table $M(A,S,I, \delta ,F)$, where A is the initial state and F is the final state.

	0	1
A	B	D
B	C	D
C	F	D
D	B	E
E	B	F
F	F	F

- Draw the directed graph for the above table.
- Prove or disprove that $\delta^*(A, 001(111)^*10) = F$.
- Check whether 00110^*1 is accepted or not. (Start from the initial state).
- Implement the machine M.

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