

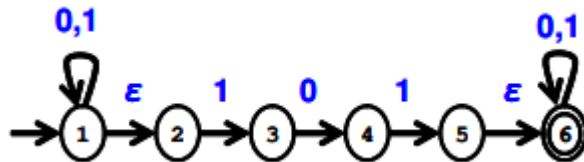
Assignment 2 – CS 301 - Theory of Automata – Fall 2020

Total Marks: 60

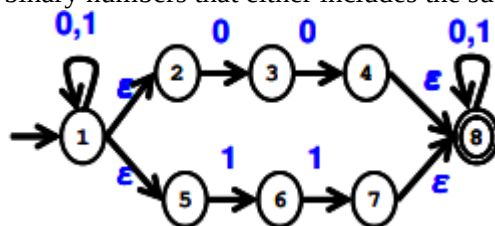
Due: Wednesday, Sept 30, 2020 (online – 5 PM)

Note: Late submissions will have 25% deduction. Submission after Friday (Oct 5 – 2 PM) will not be accepted.

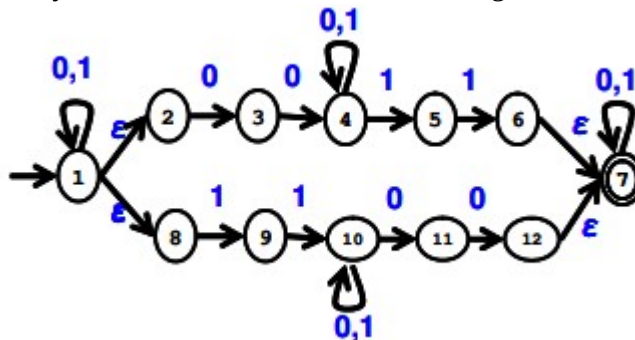
1. [4 * 5] Give NFA (or NFA-null) for the following languages, over the alphabet {0,1}
 - a. All binary numbers that include the substring “101”



- b. All binary numbers that either includes the substring “00” or “11”.

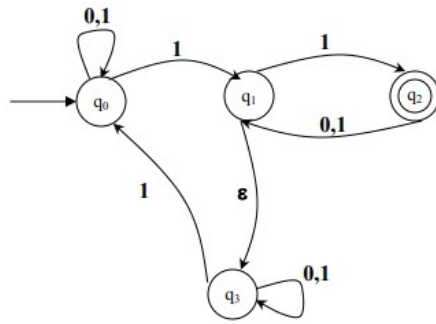


- c. All binary numbers that includes both substrings “00” and “11”.

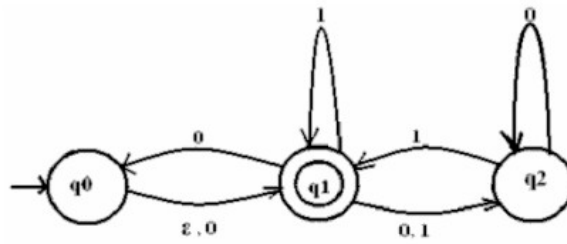


- d. All binary numbers such that the third digit and the second last digit is 1.

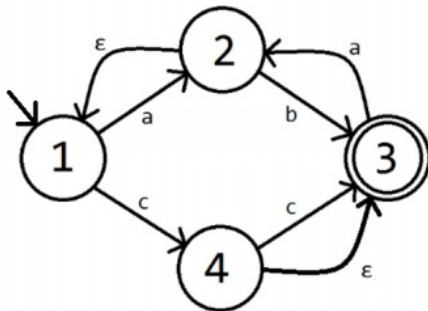
2. [4*10] Given the following NFAs (or NFA-null) convert them to DFA using subset construction method.



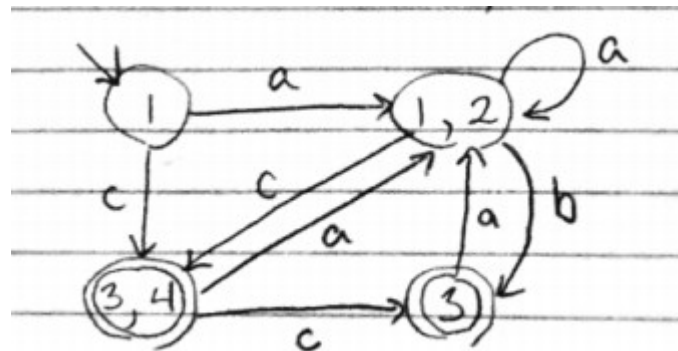
a.



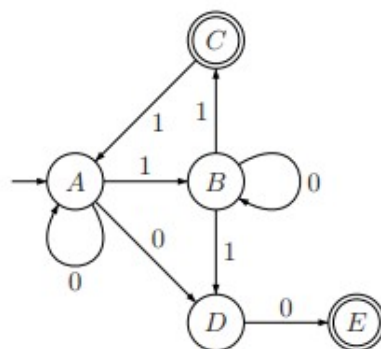
b.



c.



SOLUTION:



d.

SOLUTION

