CMSC330 Fall 2015 Quiz #3

Name ________________________________

Discussion Time (circle one): 10am 11am 12pm 1pm 2pm 3pm

Discussion TA (circle one): Adam Amelia Maria Chris Samuel Josh Michael Max Candice

Instructions
• Do not start this test until you are told to do so!
• You have 15 minutes for this quiz.
• This is a closed book exam. No notes or other aids are allowed.
• For partial credit, show all of your work and clearly indicate your answers.

1. (5 pts) Construct and draw an NFA for the following regular expression.

   \( ab \mid c^*d \)

2. (3 pts) Circle “Accept” if the NFA accepts the given string. Circle “Reject” otherwise.

   ![NFA Diagram]

   a. 00001111 Accept Reject
   b. 1111 Accept Reject
   c. 1000 Accept Reject
3. (8 pts) Convert the NFA to a DFA.

4. (4 pts) Given the grammar:

\[ S \rightarrow bS \mid TaT \mid a \]

\[ T \rightarrow Sb \mid a \]

Show the sequence of a leftmost derivation of the string abaa.