

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

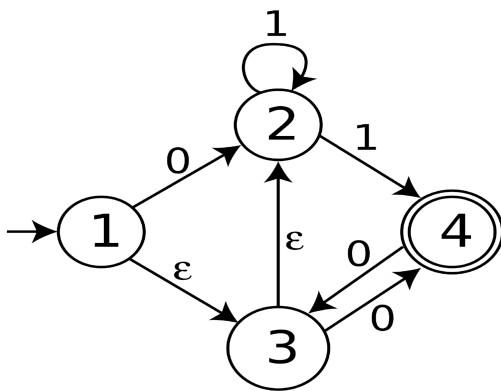
Instructions

- 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.

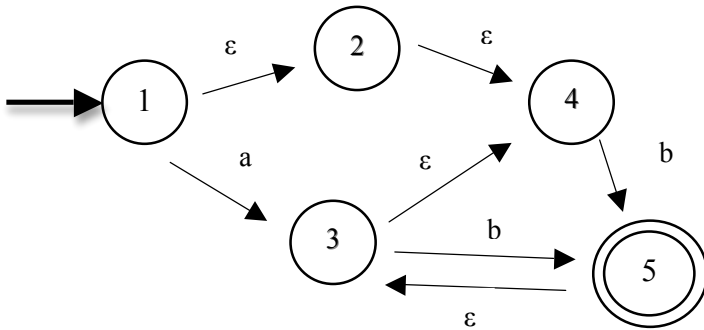
$ab \mid c^*d$

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



- |             |        |        |
|-------------|--------|--------|
| 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  $abaa$ .