# CSC 360 FINAL EXAM

*Exam carries 30% of grade. All questions carry equal weight.*.

*Time Limit: 180 min*

# Name:

1. What is the language of the following context-free grammar. Give your answer in set-notation *{...}*

*S → aS | AB A → abA | b B → baB | a*

1. Give the tree built by the **top-down breadth first** parse of

abbbaa for the grammar:

*S → A | AB A → abA | b B → baB | a*

1. Write a **regular expression** for the set of strings over *{a, b}*

which **do not begin** with the the substring ’aba’.

1. Give the state diagram of a DFA that accepts strings over *{a, b}*

which **contain** the substring ’aaba’.

1. Convert the following grammar rules into equivalent grammar rules without any *λ***-rules**. Your answer must include NULL set.

*S → AB | BCS*

*A → aA | C B → bbB | b C → cC | λ*

1. For the following NFA construct an equivalent DFA.