

COSC 480 – Compilers
Spring 2009
Exam #1 Review

- 1.) Define what an LL(1) grammar is. What are the 3 conditions that must hold for a grammar to be LL?
- 2.) Define what an LR(1) grammar is. What kind of parsing is typically used for an LR grammar?
- 3.) Define FIRST and FOLLOW and the algorithms to determine each of those sets.
- 4.) Describe the algorithm for determining the predictive parsing table for an LL grammar.
- 5.) Give the 6 steps involved in a modern compiler and describe each of the steps.
- 6.) List and describe the five classes of tokens that cover almost all tokens for modern programming languages.
- 7.) Divide the following statement:

$$E = M * C ** 2$$

into appropriate token pairs following the patterns in figure 3.2 (pg 112) in your book. (On the exam I would provide you the table for the patterns).

- 8.) List three possible error-recovery actions for a lexical error.
- 9.) Describe the languages denoted by the following regular expressions:

$a(a|b)^*a$
 $a^*ba^*ba^*ba^*$
 $(a|b)^*a(a|b)(a|b)$

- 10.) Develop the regular expression for the language $\{0^n1^n \mid n \geq 0\}$