

Closed book. No notes. Work strictly from memory. **No calculators. Scratch paper okay.** Yes, WRITE ON THIS TEST.

1/3p. Let L be the language accepted by the regular expression $b?(babaa)^+$. List the shortest five (or all) strings in L .

2/3p. Let L be the language accepted by the regular expression $ba+abb|bba$. List the shortest five (or all) strings in L .

3/3p. Let L be the language accepted by the regular expression $(aabab)^+baa$. List the shortest five (or all) strings in L .

4/3p. Let L be the language accepted by the regular expression $(baa|ab)?aa$. List the shortest five (or all) strings in L .

5/3p. Let L be the language accepted by the regular expression $a?(bab|ab)^+$. List the shortest five (or all) strings in L .

6/3p. Let L be the language accepted by the regular expression $(bb)aab*(bb|baa)aba?b?(a?b*)?$. List the shortest five (or all) strings in L.

7/3p. Let L be the language accepted by the regular expression $((aaba)+aa|b?+bbaba)*b*(ab|b*)+$. List the shortest five (or all) strings in L.

8/3p. Let L be the language accepted by the regular expression $b*aab?abb?b*+bb|ba|(b*|bb)a+$. List the shortest five (or all) strings in L.

9/3p. Let L be the language accepted by the regular expression $a(b?|a)**(baababa?)+(aab*aa)+$. List the shortest five (or all) strings in L.

10/3p. Let L be the language accepted by the regular expression $aab(aababb)*(aba(babb?)*|(abbb*)*aba)+$. List the shortest five (or all) strings in L.

Total points 30.

Answer Key (points per line)