

# Practice Questions for Pumping Lemma for RL

1.  $L = \{a^n b^n ; n \geq 0\}$
2.  $L = \{a^n b^m ; n, m \geq 0 \text{ \& } n = m\}$
3.  $L = \{a^m b^n ; n, m \geq 0 \text{ \& } n = m\}$
4.  $L = \{n_a(x) = n_b(x)\}$
5.  $L = \{n_a(x) \geq n_b(x)\}$
6.  $L = \{n_a(x) \leq n_b(x)\}$
7.  $L = \{0^{2^n} ; n \geq 0\}$
8.  $L = \{0^n 10^n ; n \geq 0\}$
9.  $L = \{0^{2^n} 10^n ; n \geq 0\}$
10.  $L = \{0^n 10^{2^n} ; n \geq 0\}$
11.  $L = \{1^{2^n} ; n \geq 0\}$
12.  $L = \{\text{Perfect Squares}; 0^{n^2} ; n \geq 0\}$
13.  $L = \{ww \mid w \text{ over } \{a, b\}\}$
14.  $L = \{\text{Palindromes}\}$
15.  $L = \{0^n 1^m 0^{n+m} ; n, m > 0\}$
16.  $L = \{\text{primes}; 0^p\}$