1. [10 marks] Describe, with proof, all the equivalence classes for the Myhill-Nerode equivalence relation on the language \( L = \{a^n b^n c^n : n \geq 1\} \).

2. [10 marks] Let \( L \) be regular. Show that the number of final states in any DFA accepting \( L \) is at least the number of final states in the minimal DFA for \( L \).

3. [10 marks] Let \( L = \{x \in \Sigma^* : x = x^R\} \), the language of palindromes over the alphabet \( \Sigma = \{0, 1\} \). Show that every word of \( \Sigma^* \) is in a Myhill-Nerode equivalence class by itself.