

Topics on CS 456/656 Fall 2025 Third Examination November 25, 2025

1. True/False/Open
2. Definitions.
3. Reductions (to prove \mathcal{NP} -completeness)
4. The four theorems related to enumeration and acceptance.
5. Prove that the halting problem is undecidable.
6. Identifying the complexity class of some languages, problems.
7. Important unsolved problems in complexity theory.
8. What is Russell's paradox?
9. Chomsky hierarchy and Chomsky normal form
10. Finite Automata, Regular expressions, minimization, NFA to DFA, etc.
11. LALR parsing
12. Pumping lemmas
13. PDA and DPDA