CS305 Tutorial-12

1. Show that there is no algorithm for deciding if any two Turing machines M_1 and M_2 accept the same language.

2. Let B be the set of all Turing machines that halt when started with a blank tape. Show that this set is recursively enumerable, but not recursive.

3. Show that for $|\Sigma| = 1$, the PCP is decidable.

4. Show that, for arbitrary context-free grammers G_1 and G_2, the problem "$L(G_1) \cap L(G_2)$ is context-free" is undecidable.

5. Consider the language $L = \{ww : w \in \{a,b\}^+\}$. construct a two tape nondeterministic turing machine and compare its efficiency with single tape NDTM and single tape DTM.