

Artificial Intelligence CS60045

Exercise Problems in Logical Deduction

Solve the following problems using Predicate Logic and Resolution Refutation

1. There is a professor who is liked by every student who likes at least one professor. Every student likes some professor or the other. Therefore, there is a professor who is liked by all students.
2. No man who is a candidate will be defeated if he is a good campaigner. Any man who runs for office is a candidate. Any candidate who is not defeated will be elected. Every man who is elected is a good campaigner. Therefore, any man who runs for office will be elected if and only if he is a good campaigner.
3. No sane witness would lie if his lying would implicate him in a crime. Therefore, if any witness implicated himself in a crime, then if all witnesses were sane, that witness did not lie.