**Assignment No- 2**

**Chapter No-2 Propositional Logic**

**Q.1)** **Write FOL of the following**

1. Mary loves everyone.

2. Mary loves everyone.

3. No one talks.

4. Everyone loves himself.

5. Everyone loves everyone.

6. Everyone loves everyone except himself.

7. Every student smiles.

8. Every student except

9. Everyone walks or talks.

10. Every student walks or talks.

11. Every student who walks talks.

12. Every student who loves Mary is happy.

13. Every boy who loves Mary hates every boy who Mary loves.

14. Every boy who loves Mary hates every other boy who Mary loves.

Q.2) "As per the law, it is a crime for an American to sell weapons to hostile nations. Country A, an enemy of America, has some missiles, and all the missiles were sold to it by Robert, who is an American citizen."

**Prove that "Robert is criminal."**

**(By Forward and Backward Chaining)**

Q.3) Construct the truth table for

(p → q) Λ (¬p → q)

Q.4) Show that “If there is cream and there is a donut then, I will drink a coffee or if there is a no donut, then I will not drink a coffee.” is valid.