Nature of Preposition

1. Tautology
2. Contradiction
3. Contingency
4. Valid
5. Invalid
6. Falsifiable
7. Unfalsifiable
8. Satisfiable
9. Unsatisfiable

Tautology

- A compound proposition is called **tautology** if and only if it is true for all possible truth values of its propositional variables.
- It contains only T (Truth) in last column of its truth table.

Contradiction

- A compound proposition is called **contradiction** if and only if it is false for all possible truth values of its propositional variables.
- It contains only F (False) in last column of its truth table.

Contingency

- A compound proposition is called **contingency** if and only if it is neither a tautology nor a contradiction.
- It contains both T (True) and F (False) in last column of its truth table.

Valid

- A compound proposition is called **valid** if and only if it is a tautology.
- It contains only T (Truth) in last column of its truth table.

Invalid

- A compound proposition is called **invalid** if and only if it is not a tautology.
- It contains either only F (False) or both T (Truth) and F (False) in last column of its truth table.

Falsifiable

- A compound proposition is called **falsifiable** if and only if it can be made false for some value of its propositional variables.
- It contains either only F (False) or both T (Truth) and F (False) in last column of its truth table.

Unfalsifiable

- A compound proposition is called **unfalsifiable** if and only if it can never be made false for any value of its propositional variables.
- It contains only T (Truth) in last column of its truth table.

Satisfiable

- A compound proposition is called **satisfiable** if and only if it can be made true for some value of its propositional variables.
- It contains either only T (Truth) or both T (True) and F (False) in last column of its truth table.

Unsatisfiable

- A compound proposition is called **unsatisfiable** if and only if it can not be made true for any value of its propositional variables.
- It contains only F (False) in last column of its truth table.