

Foundations of Formal Logic

Logic · Answer Key · 8 Questions

1. In formal logic, which term describes an argument where the conclusion must be true if the premises are true?

- A) Inductive
- B) Abductive
- C) Deductive**
- D) Fallacious

2. Which propositional operator is represented by the symbol '?' in formal logic?

- A) Conjunction
- B) Disjunction**
- C) Negation
- D) Conditional

3. What is the standard name for a three-part deductive argument consisting of a major premise, a minor premise, and a conclusion?

- A) Syllogism**
- B) Paradox
- C) Axiom
- D) Tautology

4. In a truth table for the conjunction operator (AND), under what condition is the entire statement true?

- A) When both parts are false
- B) When either part is true
- C) When only the first part is true
- D) When both parts are true**

5. Which term refers to a statement that is true in every possible interpretation, such as 'It is raining or it is not raining'?

- A) Contradiction
- B) Tautology**
- C) Conditional
- D) Inverse

6. Who is historically recognized for formalizing the system of categorical syllogisms in 'Prior Analytics'?

- A) Plato
- B) Socrates
- C) Aristotle**
- D) Euclid

7. Which logical fallacy occurs when an argument assumes the truth of the conclusion in its premises?

- A) Circular reasoning**
- B) Ad hominem
- C) Red herring
- D) False dilemma

8. In logic, what is the 'inverse' of the conditional statement 'If P, then Q'?

- A) If Q, then P
- B) If not P, then not Q**
- C) If not Q, then not P
- D) P if and only if Q