

Epistemic Gazes and Formal Fallacies: A College Logic Seminar

Synthesize complex deductive structures and evaluate nuanced informal fallacies through high-level propositional calculus and architectural argument mapping.

1. In the context of modal logic, if we define 'Necessity' (\Box) as 'it is not possible for P to be false', which theorem best describes the relationship in a System K framework?

- A. The Distribution Axiom: $(P \wedge Q) \rightarrow (P \wedge Q)$
- B. The Reflexivity Axiom: $P \rightarrow P$
- C. The Brouwerian Axiom: $P \rightarrow \Box P$
- D. The S5 Characteristic: $\Box \rightarrow \Box \Box P$

2. True or False: According to the Quine-Duhem thesis, a single hypothesis cannot be isolated for falsification because it relies on a 'web of belief' including auxiliary assumptions.

- A. True
- B. False

3. Consider a case where a debater attacks the underlying motive of an opponent's funding source rather than the empirical data provided. This specific iteration of the genetic fallacy is best categorized as ____.

- A. Circulus in demonstrando
- B. Circumstantial ad hominem
- C. Ignoratio elenchi
- D. Post hoc ergo propter hoc

4. Analyze the following syllogism: 'No nihilists are optimists. Some philosophers are optimists. Therefore, some philosophers are not nihilists.' Identify the valid mood and figure.

- A. Barbara (AAA-1)
- B. Celarent (EAE-1)
- C. Festino (EIO-2)
- D. Baroco (AOO-2)

5. In Bayesian epistemology, when we update our prior probability ($P(H)$) in light of new evidence (E) to reach a posterior probability, we are applying the principle of ____.

- A. Conditionalization
- B. Deductivism
- C. Falsificationism
- D. Equivocation

6. True or False: Gödel's First Incompleteness Theorem demonstrates that in any sufficiently powerful recursive axiomatic system, there are true statements that cannot be proven within that system.

Name: _____

Date: _____

- A. True
- B. False

7. When an interlocutor assumes that because the individual parts of a high-frequency trading algorithm are simple, the emergent behavior of the entire market system must also be simple, they commit the ____.

- A. Fallacy of Division
- B. Fallacy of Composition
- C. Fallacy of Accident
- D. Naturalistic Fallacy

8. The logical operator commonly used to represent 'if and only if' situations, signifying that two statements are truth-functionally equivalent, is the ____.

- A. Negation
- B. Conjunction
- C. Biconditional
- D. Disjunction

9. True or False: In a Reductio ad Absurdum argument, one demonstrates the truth of a proposition by showing that its negation leads to a logical contradiction.

- A. True
- B. False

10. Which heuristic, identified by Tversky and Kahneman, describes the tendency to estimate the probability of an event based on how easily similar instances come to mind, often skewing logical risk assessment?

- A. Representativeness Heuristic
- B. Anchoring and Adjustment
- C. Availability Heuristic
- D. Confirmation Bias