

Final Examination

General Directions: This examination is divided into four sections of three questions each. You are to answer a total of four questions, choosing one from each section.

Neo-positivism: Explanation, Laws, and Confirmation

1. What is the deductive-nomological (D-N) or covering-law model of explanation?
2. What is meant by a “causal” law? Is it reasonable to insist that all acceptable scientific explanations make use of causal laws?
3. Give a sketch of Dretske’s critique of the Humean notion of scientific law and his argument for a metaphysical analysis of laws.

Early Critiques of Logical Empiricism

4. What is Goodman’s “New Riddle of Induction” and why does it represent a challenge to logical empiricism? What is Goodman’s own solution to the “New Riddle”?
5. Sketch Quine’s critique of the analytic/synthetic distinction as developed in “Two Dogmas of Empiricism.”
6. According to Quine, what view of the nature and interpretation of theories draws support from the rejection of the analytic/synthetic distinction?

Kuhn's Structure of Scientific Revolutions and the Critical Reaction to It

7. What are Kuhn’s reasons for maintaining that the paradigm disputes typical of revolutionary science are not wholly rational? Are there any shared beliefs or values to which the advocates of competing paradigms can retreat in trying to settle their differences?
8. Explain, briefly, why Kuhn’s model of the development of science constitutes a fundamental challenge to some of the basic assumptions that underlie the logical empiricist picture of both the nature of science and the task of the philosophy of science.
9. In response to the prodding of his critics, Kuhn has developed a view of the nature of paradigms that is more refined than that presented in the first edition of *The Structure of Scientific Revolutions*. First, explain why he now thinks that we need a straightforwardly sociological criterion of membership in a scientific community, and summarize his proposal for such a criterion. Second, explain what he means by the concept of a “disciplinary matrix,” the concept that Kuhn would now use in place of the paradigm concept.

Realism and Anti-realism

10. Explain McMullin’s argument for “structural realism” and Hacking’s argument for “entity realism.”
11. Give a brief characterization of van Fraassen’s “constructive empiricism” (remember to define carefully the concept of “empirical adequacy”) and then explain how it differs from both instrumentalism and realism.
12. What is Fine’s “Natural Ontological Attitude” program? How does it differ from both realism and instrumentalism?