

Mid-term Examination Study Questions

Note to the student: I have decided to change the structure of the mid-term examination a bit. Instead of giving you twenty-four study questions divided into four categories, I'm giving you sixteen questions divided into two categories. On the examination itself, you will be given four of the eight questions in each category, and you will be asked to write answers to two questions in each category.

Newton to Reid

1. With examples drawn from his work in both optics and mechanics, explain what Newton means with his famous claim that he “frames” or “feigns” no hypotheses. In the specific case of the law of universal gravitation, explain how Newton understands this as a proposition “inferred directly from the phenomena and rendered general by induction.” Is Newton justified in this assessment of the methodological status of the law of universal gravitation?
2. Newton’s third “Rule of Reasoning” spells out the range of properties over which one may generalize when rendering general by induction laws deduced from the phenomena. What distinguishes those properties, and how should this rule be situated in Newton’s own more general metaphysical commitments? What inferences might we draw from Rule 3 with regard to Newton’s place in the mechanistic tradition descending from Descartes?
3. Karl Popper argues that Berkeley can be understood as a precursor of Mach. With appropriate attention to the views of both Berkeley and Mach, critically evaluate Popper’s argument.
4. Berkeley was a famous critic of Newton’s views on absolute space, time, and motion. Outline Berkeley’s criticism.
5. Causality for Hume equals contiguity in space, succession in time, and constant conjunction. What more needs to be said? (NB: Tempted though I might be, I won’t accept a one-word answer.)
6. Compare Hume on habit and custom with Kant on the a priori.
7. Hume and Reid are both students of Newton, in the broadest sense of the word. Thus, they might agree when it comes to skepticism about a role for hypotheses in science and, yet, they disagree with regard to the more thoroughgoing skepticism that some associate with Hume. Give a sketch of the views of both Hume and Reid as they concern these two points of sameness and difference with an eye toward identifying the root difference in their positions.
8. Critically assess the view that Reid opposes to the Lockean theory of ideas.

Kant and Comte

9. Compare Reid on necessary and contingent self-evident principles with Kant on the a priori.
10. Though recognizing that they deal with an empirical concept of matter, Kant still asserts that the principles of mechanics have an a priori status. How, on Kant's view, is this possible?
11. Explain what Kant meant when he wrote, in the *Metaphysische Anfangsgründe*, "I assert, however, that in any special doctrine of nature there can be only as much *proper* science as there is *mathematics* therein." In your answer, be sure to pay attention to the role of "construction" at this point in Kant's thinking.
12. More surprising than Kant's claim about the principles of mechanics is his claim that the law of universal gravitation can come to be regarded as an a priori law. What is required to make this possible? Why, by contrast, does he think that chemistry is probably not capable of being given an a priori foundation?
13. Newton is often taken to be a realist about absolute space. Would it be fair to say the same of Kant?
14. We have not yet read Mach, but we've read Popper on Berkeley as precursor to Mach, so you have enough with which to work for the following: What, if anything, is the genus of which both Comtean positivism and Machian positivism are species?
15. Explain what Comte meant when he wrote, "The formation of social physics at last completes the system of natural sciences."
16. Comte regards the positive philosophy as a new science of science. Explain what he envisions for this new science.