

QUESTIONS FOR THE FIRST IN-CLASS ESSAY EXAM

PHL 363L
Emergence, Supervenience, and Reduction

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Guidelines

- The exam contains the four essay questions below, and you are to answer just one of them.
- Each exam question is structured so that it has three components: analytic, critical, reflective.
- Your essay should be approximately 800-1000 words.
- It should be written in a 20 page *blue book* in *ink* rather than lead.
- Write on *every other line*, and leave a *one inch margin* on the left of each page for comments.

Exam Questions

1. Suppose that T_1 and T_2 are theories, that T_2 is to be reduced to T_1 , and that A is a primitive attribute term in T_2 . Causey claims that there must be a basic or a compound attribute term δ in T_1 such that $\delta x \leftrightarrow Ax$. Kemeny and Oppenheim, and Nagel claim that $\delta x \rightarrow Ax$ is adequate for reduction. State Causey's reason for thinking that the biconditional is needed rather than the conditional, then elaborate on his reason. Criticize his reason from the perspective of Kemeny and Oppenheim or that of Nagel, then defend his reason against this criticism.
2. Causey claims that identities rather than causal mechanisms are crucial to reduction. By contrast, Wimsatt claims that it is the determination of causal mechanisms that is crucial to reduction, and that identities are useful tools in the search for causal mechanisms. Explain what is at the heart of this disagreement between Causey and Wimsatt, and then state whether you agree with Causey or with Wimsatt. Justify your choice, and then respond to that justification on behalf of the person with whom you disagree.
3. Sarkar lists four necessary conditions on scientific explanations, and three conditions that an explanation can satisfy (in five possible ways) to become a reduction (in one of five modes). One objection to his scheme is that all scientific explanations must satisfy fundamentalism, the first of the three reduction conditions. After explaining each of the four conditions for explanation and fundamentalism, develop the above criticism. Defend Sarkar's scheme against this criticism along the lines that he sketches, and then discuss the limitations of that response.
4. Sarkar claims that Rosenberg is being overly pessimistic in claiming that classical genetics is only supervenient on molecular genetics. Explain why Rosenberg thinks that supervenience is the only plausible mode of connection, and then explain Sarkar's reason for thinking otherwise. Pinpoint the key differences of their perspectives on the nature of explanation and the role of ontology in science. State the perspective with which you agree (of the two) and then explain why. Respond to that explanation on behalf of the one with whom you disagree.