

Here are 5 of the 6 clusters that will be selected for the final exam. Answer one question from each cluster, and keep in mind that one more question will be announced next week. The total number of questions that you will answer will be 6. The word count for each question is between 250 and 500 words. Don't go over the word count.

The final exam is due on the 17th of December. You may hand it in electronically on UM Learn, or in person in my office on December 17th between noon and 1 pm.

Cluster 1) Pick one of the following three questions to prepare for the final.

- A) How does Popper address the problem of induction? Does he solve it or step around it? Given his approach to induction, how does he propose we obtain scientific knowledge? Give one criticism of Popper's approach to induction.
- B) In Popper's conclusions, he states that "Confirmations should count only if they are the result of *risky predictions* . . ." [page number forthcoming]. What is the difference between a risky and a safe prediction? Give examples of each. Why might Popper believe that riskiness increases the scientific status of a theory? How might the "riskiness criterion" be related to his critique of verification/confirmation?
- C) Peter Lipton discusses the descriptive problem of induction. What is the descriptive problem of induction according to Lipton? Give three accounts of induction found in his article, and explain one problem for each account.

Cluster 3) Pick one of the following three questions to prepare for the final.

- A) Kitcher gives the example of a spiritual teacher who says, "Quietness is wholeness in the center of stillness." What is the point of this example? What does it function as an argument against? How does the argument work?
- B) When Hanson asks the question of whether two different people see the same thing, he considers the proposal that they see the same thing but interpret it differently. What is Hanson's argument against this proposal? What are some implications of Hanson's view for the testability of theories?
- C) Creationists express skepticism about evolutionary biology because they say it doesn't have conclusive proof. Explain the dilemma this creates. Does proof have to be conclusive for a theory to be acceptable, according to Kitcher? What about according to you? Briefly explain the difference between possible and warranted skepticism, and discuss whether the creationists, as presented by Kitcher, use either in their criticism of evolution.

Cluster 4) Pick one of the following three questions to prepare for the final.

- A) Kuhn talks about incommensurability. What are the two types of incommensurability? How do these two types of incommensurability threaten objectivity?
- B) Why does Kuhn think that scientific change is noncumulative? What is his argument? Put this in your own words, with page numbers. Offer one criticism of his argument.
- C) How does Kuhn's argument from history work? Put this in your own words. No page number necessary since I drew this from his work overall. Offer two criticisms of this argument.

Cluster 6) Pick one of the following four questions to prepare for the final.

- A) Longino describes several different notions of objectivity. What are these different notions (in your own words)? Which notion does she go with? Do you think that the type of objectivity Longino emphasizes will actually improve science? Why or why not?

- B) Longino offers criteria that an objective community must have. What are these criteria? Will these criteria, if followed, lead to a more objective science? Why or why not?
- C) How does Longino's views on objectivity differ from some of the other authors in this course (pick just one author for comparison)?
- D) Feyerabend espouses a theory of methodology that is radical in nature. Explain his approach to methodology. Provide an example of an academic discipline that presents a methodological problem, and offer an appropriate application of Feyerabend's theory. Does this make the discipline better or worse? (P.S. I think this is a really hard question, but one of you came up with it!). Try it if you think you can give a good and interesting answer.

Cluster 7) Pick one of the following 3 questions to prepare for the final.

- A) Realists often use an inference to the best explanation type of argument for the realistic interpretation of theories. How does the argument work? What are the competitor explanations? Which competitor is the best and why?
- B) Bas van Fraassen holds the view of constructive empiricism. What is this view? Why does Bas van Fraassen think that constructive empiricism is a better interpretation of science than realism? Do you think he's right?
- C) James Brown provides a description of what he means when he says that science is successful. What does he mean by the success of science? Please put this in your own words. How would Bas van Fraassen react to each part of Brown's description of success?