

**UNIVERSITY OF LONDON**  
**M PHIL EXAMINATIONS 2005**  
**for internal students**

**PHILOSOPHY OF SCIENCE**

Candidates should answer THREE of the following questions. Please avoid overlap in your answers.

1. 'If I am justified in believing that there is a mouse under my floorboards solely on the basis of scratching noises, brown droppings and nibbled wire, then I am justified in believing that there are subatomic particles on the basis of lines in cloud chamber photographs and other such observational data.' Discuss.
2. Are laws of nature necessary truths?
3. Are all true scientific theories ultimately reducible to physics?
4. 'There is no such thing as a theory-free observation statement.' Is this true? If so, does it threaten scientific knowledge? If not, what criterion is there for distinguishing theory-free from theory-laden observation statements?
5. Is every scientific explanation a causal explanation?
6. For what sense of 'converging', if any, is it reasonable to think of science as converging to the truth?
7. Does Bayesianism provide us with the means for a satisfactory solution of the Duhem-Quine problem?
8. Could a psychoanalytic theory of the unconscious be a genuinely scientific theory?
9. Is the scientific acceptability of the theory of natural selection impugned by the controversy over the units of natural selection?
10. 'Sample data are usable for scientific purposes if and only if the sample is truly random.' Discuss.
11. Is a revolution in science anything more than a theory change that hits the headlines?
12. Is the anisotropy of time an illusion?

**END OF PAPER**