

UNIVERSITY OF LONDON

BA EXAMINATION

for Internal Students

This paper is also taken by Combined Studies Students

PHILOSOPHY

Optional Subject (f): Philosophy of Science

Answer THREE questions.

1. Discuss whether and to what extent the Bayesian view of confirmation can deal with ONE of the following:
  - (a) the Duhem problem
  - (b) the problem of induction
  - (c) the confirmation of new theories by old evidence.
2. 'Progress in science is achieved solely by conjecture and refutation'. Is it?
3. How good are Feyerabend's arguments against method?
4. Does a scientific revolution consist in the replacement of an old paradigm by a new one? And, if so, is the new paradigm incommensurable with the old?
5. EITHER (a) Some accounts of scientific explanation focus on giving the causes as the key to successful explanation. Discuss whether this approach can be squared with a traditional empiricist approach to knowledge, especially scientific knowledge.  
  
OR (b) The Deductive-Nomological view of explanation gives pre-eminent status to laws of nature in science; is this status compatible with a traditional empiricist view of laws as non-necessary regularities?
6. 'Explanations are not arguments, and the purpose of a scientific explanation of an event E is not to show that E was "to be expected".' Discuss.

7. EITHER (a) Can a line -- even a vague one -- be drawn between the observational (the evidence experience gives us about the world) and the theoretical (aspects of the world described by scientific theories going beyond the directly observable)?
- OR (b) 'Observation is fallible. Hence one can no more test a theory against one's observations than one can test an observation against one's theories'. Discuss.
8. The propensity interpretation of probability is thought by some to generalise the notion of cause. Yet a cause never comes after its effect, while probabilities are symmetrical in the sense that if  $P(A|B)$  is defined so is  $P(B|A)$ , provided that  $P(A)$  is not zero. Discuss the problems to which this situation gives rise.
9. How can a scientific realist try to counter the pessimistic induction that argues from the falsity of virtually all past theories in science (even quite successful ones) to the probable falsity of currently accepted theories?
10. Give a critical exposition of the conventionalist view of mechanics.
11. Describe and critically assess the doctrine of the supervenience of everything physical on the microphysical.
12. Explain the measurement problem of quantum mechanics. How might one try to defend the idea that there is never any 'collapse of the wave packet'?
13. In evolutionary theory, must there be only one level in the biological hierarchy at which natural selection occurs? Illustrate your answer with an actual or hypothetical example of an evolutionary process driven by natural selection.
14. Could the integration of feminism and science produce a transformation giving cognitive, as opposed to ethical, advantages over current science?

END OF PAPER