

PHILOSOPHY TRIPOS Part II

Thursday 30 May 2002

9 to 12

Paper 6

PHILOSOPHY OF SCIENCE

Answer **three** questions only.

Write the number of the question at the beginning of each answer. If you are answering an either/or question, indicate the letter as well.

**You may not start to read the questions
printed on the subsequent pages of this
question paper until instructed that you
may do so by the Invigilator**

- 1 **Either** (a) Is realism the best explanation of any fact about science?
 Or (b) Should we be constructive empiricists?
- 2 **Either** (a) Does the underdetermination of theory by data count for
 or against realism?
 Or (b) What, if anything, can be learnt from arguments for the
 pessimistic induction?
- 3 Should we be Bayesians?
- 4 Does the rationality of science require that competing theories be inter-
 translatable?
- 5 Does it make sense to say that one theory approximates the truth better than
 another?
- 6 Do we have to believe in evolution by natural selection to make sense of the
 idea that it is the heart's function to pump blood?
- 7 Are natural kinds mind-independent categories of things in nature?
- 8 **Either** (a) Do laws relate universals?
 Or (b) If there are probabilistic laws, must there be objective
 chances?
- 9 **Either** (a) What metaphysical assumptions about the nature of space are
 needed by Newtonian physics?
 Or (b) 'Space by itself, and time by itself, are mere shadows, and
 only a kind of union of the two has an independent reality.'
 Discuss.
- 10 **Either** (a) What does the existence of incongruent counterparts show
 about the shape of space?
 Or (b) How far, if at all, is physical geometry conventional?
- 11 Explain the measurement problem in quantum mechanics. How does it arise,
 and how could it be resolved?
- 12 What does quantum mechanics tell us about the nature of physical reality?

END OF PAPER