

PHILOSOPHY TRIPOS Part II

Thursday 27 May 1999

1.30 to 4.30

Paper 6

PHILOSOPHY OF SCIENCE

*Answer **three** questions only.*

- 1 Can scientific theories ever be shown to be true? Does it matter if they can't?
- 2 'Light is electromagnetic radiation.' What does this mean?
- 3 'The function of the heart is to pump blood.' Is this true, and if it is, what does it explain?
- 4 Can theories explain facts which they do not entail?
- 5 What does it mean to say that water is a natural kind? Is it?
- 6 In what sense, if any, are laws of nature necessary?
- 7 'The Big Bang theory is probably true'; 'I'll probably come to the party'; 'this radium atom will probably decay within a million years'. Compare these uses of 'probably'.
- 8 What is the problem of the arrow of time, and how would you solve it?
- 9 How can science progress if the meaning of a theoretical term is determined by the theory in which it is embedded?
- 10 How do predictions differ from explanations? Is a theory confirmed more by a prediction of a new fact than by an explanation of an old one?