Monday 4 June 2001

9-12

HISTORY AND PHILOSOPHY OF SCIENCE (1)

History of Science

Answer question one from Section A and three questions chosen from Section B

SECTION A

1 Have the sciences always been at war with religion?

SECTION B

- 2 How did existing and novel institutions affect the pursuit of **either** astronomy **or** anatomy between 1550 and 1700?
- 3 'Mechanical philosophers applied military principles to the whole of nature.' Discuss.
- 4 Why did Newton entitle his work *Philosophiae naturalis principia mathematica* ('Mathematical principles of natural philosophy')?
- 5 **Either** (*a*) Compare the development of experimental natural philosophy in France and Britain in the eighteenth century
 - **Or** (b) Was there a chemical revolution in the eighteenth century?
- 6 **Either** (a) Discuss the transformation of the 'natural philosopher' of the late eighteenth century into the professional 'scientist' of the late nineteenth century.
- **Or** (b) How did the place of the sciences in university education change during the mid- and late-nineteenth century?
- Why, when first published in 1859, was *On the Origin of Species* a significant book?
- 8 **Either** (a) Did Freudianism become a secular religion?
- **Or** (b) 'During the second half of the nineteenth century the study of heredity moved from the garden to the laboratory.' Discuss.
- 9 What did physicists around 1900 expect of the future development of their theories? Had these expectations been achieved by the middle of the twentieth century?
- 10 **Either** (a) To what extent and by what means were biology and medicine 'molecularized' in the second half of the twentieth century?
- **Or** (b) Was the proposal of the double helical structure of DNA a clever piece of puzzle solving, an act of intellectual theft, or a profound and unexpected insight?

END OF PAPER

Tuesday 5th June 2001

9-12

HISTORY AND PHILOSOPHY OF SCIENCE (2)

Philosophy of Science

Answer question one from Section A and three questions chosen from Section B

SECTION A

1 How, in your view, should the history and/or sociology of science inform philosophical accounts of science?

SECTION B

- 2 **Either** (a) 'The scepticism of Descartes admits of no answer and serves no purpose.' Discuss.
- **Or** (b) What is the problem of induction? Does it rest on a misguided notion of justification?
- 3 **Either** (a) What is the difference between idealism and scepticism?
 - **Or** (b) Is there a sense in which colours are in the mind and shapes are not?
- 4 Why aren't all correlations laws?
- 5 Has Kripke established the possibility of knowledge that is both necessary and *a posteriori*?
- 6 **Either** (a) What does explanation have to do with deduction?
 - **Or** (b) Describe and defend a solution to the Paradox of the Ravens.
- 7 **Either** (a) What is right in Karl Popper's philosophy of science?
- **Or** (*b*) How does Kuhn distinguish between normal and revolutionary science? Is this distinction a matter of degree?
- 8 'If social interests shaped the content of science, then scientists could never arrive at true theories.' Discuss.
- 9 **Either** (a) How can Schrödinger's Cat Paradox be resolved?
- **Or** (*b*) How can philosophy of science help to determine who should fund scientific research?

END OF PAPER