

NST1

Natural Sciences Tripos Part IB

Paper HPS/1

HISTORY AND PHILOSOPHY OF SCIENCE (1)

History of Science

You should answer three questions. All questions carry equal weighting.

You should spend no more than three hours on answering all the questions, and a word limit is set of no more than 1,500 words per answer.

All your answers for this paper should be submitted in one DOC, DOCX or PDF document. Each answer should be clearly headed with the question number and the question.

Put your Blind Grade Number (BGN) at the start of the document. Do not put your name anywhere in the document.

1. How and why did knowledge of human bodies change in early modern Europe?
2. Was the European world-picture mechanised during the seventeenth century?
3. Why did seventeenth-century physicians and natural philosophers perform experiments?
4. Did commercial interests drive the production of natural knowledge in the eighteenth-century world?
5. How did public and state support for the natural sciences change in the early nineteenth century?
6. How important was Down House (Charles Darwin's home) to the global transmission of evolutionary thought?
7. Who benefited from medicine in colonial settings of the nineteenth and early twentieth centuries, and how?
8. Why did metrology become significant in the nineteenth-century physical sciences?

9. Who created the twentieth century's "population problem", and with what consequences?
10. In what ways was conservation an imperial or neo-colonial science?
11. Chris Wiggins has suggested that data science is not a science, but a form of engineering. Does the rise of big data across the sciences in the early twenty-first century support this view?
12. Have the genomic sciences taken us beyond the concept of race?

END OF PAPER

NST1

Natural Sciences Tripos Part IB

Paper HPS/2

HISTORY AND PHILOSOPHY OF SCIENCE (2)

Philosophy of Science

You should answer three questions. All questions carry equal weighting.

You should spend no more than three hours on answering all the questions, and a word limit is set of no more than 1,500 words per answer.

All your answers for this paper should be submitted in one DOC, DOCX or PDF document. Each answer should be clearly headed with the question number and the question.

Put your Blind Grade Number (BGN) at the start of the document. Do not put your name anywhere in the document.

1. Does Kuhn argue that normal science inevitably leads to a scientific revolution?
2. Should scientists follow Feyerabend's advice to proliferate theories?
3. Are artificial minds possible?
4. Does Lakatos show when to reject a scientific theory? If not, is this a defect in his methodology of scientific research programmes?
5. Is Popper right that science can, and should, proceed without reliance on induction?
Or
Can metaphors be part of a scientific paradigm or a research programme?
Discuss in relation to a concrete example.
6. Critically discuss Machery's "nomological" account of human nature.
7. What explanatory role does the notion of "struggle" play in the theory of evolution by natural selection?
8. What is good health?

9. How do we know a medical intervention is effective?
10. Are there any topics which scientists should not be allowed to research?
11. Social sciences have discovered no laws. Therefore they are not real sciences. Discuss.
12. Is there such a thing as “post-empirical science”?
Or
Does contemporary physics show that the past and future are as real as the present?

END OF PAPER