

NST1
Natural Sciences Tripos Part IB

Monday 3 June 2019 13:30–16:30

Paper HPS/1

HISTORY AND PHILOSOPHY OF SCIENCE (1)

History of Science

Before you begin, read these instructions carefully.

*Answer **one** question from **Section A** and **three** questions from **Section B**. Begin each answer on a separate sheet. Write legibly and on only **one** side of the paper.*

Answers must be tied up in separate bundles, marked 1, 2, 3, etc. according to the question number.

*Attach a completed coversheet to each bundle and complete a master coversheet listing all questions attempted. It is essential that you write your examination number and **not** your name on the cover sheet and on **each** bundle.*

STATIONERY REQUIREMENTS

Script paper, blue coversheets, yellow master coversheet, and tags.

You may not start to read the questions printed on the next page of this question paper until instructed to do so.

SECTION A

1. “The history of the sciences is a great fugue, [a musical composition] in which the voices of the nations come one after the other to the fore.” (J. W. v. Goethe) Do you agree?
2. How has government patronage affected the historical development of natural sciences?

SECTION B

3. How did instruments shape the development of early modern science?
4. What was the role of empirical observation in early modern science?
5. Was there a revolution in eighteenth-century chemistry?
6. Did modern science begin around 1800?
7. Why was Charles Darwin’s *On the Origin of Species* an important book in the nineteenth century?
8. What were the relationships, if any, between tropical medicine and European imperial expansion in the nineteenth century?
9. What did Robert Oppenheimer mean when he told the atomic scientists at Los Alamos in 1945 that “there is nothing in atomic weapons – there is certainly nothing that we have done here or in the physics or chemistry that immediately preceded our work here – in which any revolutionary ideas were involved”?
10. Has the increasing dominance of commercial considerations fundamentally changed the practice of science since the 1970s?
11. Using specific examples, discuss how molecules became involved in the twentieth-century politics of gender and of race.
12. What does the history of climate change tell us about how the scientific community has changed?

END OF PAPER

NST1
Natural Sciences Tripos Part IB

Tuesday 4 June 2019 09:00–12:00

Paper HPS/2

HISTORY AND PHILOSOPHY OF SCIENCE (2)

Philosophy of Science

Before you begin, read these instructions carefully.

*Answer **one** question from **Section A** and **three** questions from **Section B**. Begin each answer on a separate sheet. Write legibly and on only **one** side of the paper.*

Answers must be tied up in separate bundles, marked 1, 2, 3, etc. according to the question number.

*Attach a completed coversheet to each bundle and complete a master coversheet listing all questions attempted. It is essential that you write your examination number and **not** your name on the cover sheet and on **each** bundle.*

STATIONERY REQUIREMENTS

Script paper, blue coversheets, yellow master coversheet, and tags.

You may not start to read the questions printed on the next page of this question paper until instructed to do so.

SECTION A

1. Should we trust scientific results?
2. What, if anything, unifies the sciences?

SECTION B

3. Should scientists reason via a process of inference to the best explanation?
4. What, if anything, does Kuhn's incommensurability threaten?
5. "Scientists always make inductive leaps, therefore science must be value-laden." Discuss.
6. What is the single biggest problem affecting Popper's falsificationism? Can it be solved?
7. Should there be any limits on freedom of research?
8. Are biological species the right sorts of things to have natures?
9. "Only biological organisms are capable of thought." Do you agree?
10. Is science a special pursuit in virtue of its distinctive method or in virtue of its social norms?
11. Is there a distinction to be made between the natural and social sciences? Is it justified?
12. "The idea of time as passing is a relic from the age of classical physics." Discuss.

END OF PAPER