NST1
NATURAL SCIENCES TRIPOS Part IB

Monday, 1 June 2015, 09:00–12:00

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 subsequent pages of this question paper until instructed to do so.

SECTION A

1. Has science always been on the side of power?

2. Laboratories have been the most important institutions in the history of science. Do you agree?

SECTION B

3. How did early modern natural philosophers and physicians discover new knowledge?

4. Why did early modern astronomers come to accept heliocentrism?

5. To what extent did new experimental evidence influence the development of eighteenth-century chemistry?

6. How did global travel affect natural history?

7. What were the most significant changes in the sciences in the decades around 1800?

8. Hospitals and laboratories became central to medicine before they could offer any new treatments. Explain and assess this claim.

9. In what ways did the publication of *On the Origin of Species* change the debate about evolution?

10. Should we be surprised that Albert Einstein developed the special theory of relativity while working in the Swiss Patent Office?

11. The effect of World War II on the physical sciences was much greater than its effect on the life sciences. Do you agree?

12. Where did electronic computers come from, and how have they altered scientific research?

END OF PAPER

NST1
NATURAL SCIENCES TRIPOS Part IB

Tuesday, 2 June 2015, 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 subsequent pages of this question paper until instructed to do so.

SECTION A

1. "Philosophy of science is about as useful to scientists as ornithology is to birds" (attributed to Richard Feynman). Discuss.

2. Does it still make sense for philosophers of science to search for the scientific method?

SECTION B

3. Does the fact that most scientists do not usually try to falsify their own theories invalidate Popper's philosophy of science?

4. What does it mean to say that "smoking causes lung cancer"?

5. How should scientists solve problems of inductive risk?

6. What purposes are served by classifying organisms into species?

7. What is the best argument against the possibility of a social science? Does it succeed?

8. Is scientific research based on paradigms? Discuss with reference to a particular area of science.

9. Why is it valuable to have multiple competing explanations for the same phenomena?

10. All cognition is information processing. Do you agree?

11. Is Kuhn's view of scientific revolutions incompatible with scientific realism?

12. Are the physical sciences special in having a method for learning about unobservable entities?

END OF PAPER