

NATURAL SCIENCES TRIPOS Part III

Questions released at 12 noon on Wednesday 17 February 2016
Answers to be submitted by 12 noon on Wednesday 24 February 2016

HISTORY AND PHILOSOPHY OF SCIENCE

Before you begin read these instructions carefully:

*Students taking Natural Science Tripos Part III **History and Philosophy of Science** should answer **two** questions from the following list of twelve questions.*

The two essays should be submitted in duplicate to the Departmental Office by 12 noon on Wednesday 24 February 2016. Students are also required to upload their examinable work as .doc or .rtf files to the HPS MPhil/Part III site on Moodle. The examiners may use this to check word count or derivative passages.

*Essays should be marked 1, 2, 3, etc. according to the number of the question attempted. The essays should be typed on only **one** side of the paper and each essay should be firmly stapled.*

Hand in your essays with a completed submission form (downloadable from Moodle) listing the number of each question attempted.

NST Part III History and Philosophy of Science

Set essays

*Answer any **two** questions. Answers should not exceed 2,500 words each.*

1. By what criteria can one claim that there is progress made through a Kuhnian scientific revolution?
2. What is Hacking's notion of looping kinds good for in history and philosophy of science?
3. "Science is one of the best things modern civilization has to offer. Imperialists hit upon something by holding up scientific activity as a civilizing virtue" (Pyenson). Why did European empires support scientific activity?
4. How have processes of decolonization shaped the production of scientific knowledge in Africa and Asia?
5. What was the relationship between observation and experiment in early modern Europe?
6. Did the rise of ethnographic fieldwork make anthropology a science?
7. Sam Alberti, who has recently been appointed as Curator of Science and Technology at the National Museum of Scotland, has suggested that to "study object biographies... is particularly fruitful in the museum context, not only because so many museum objects have exotic provenances, from far away or long ago, but also because of what we can learn from the lives of the most common of specimens." Discuss, with reference to what this might mean for visitors to museums.
8. "Models are false. Only truths explain. So models don't explain anything." Discuss.
9. "Natural selection favors (or discriminates against) phenotypes, not genes or genotypes" (Mayr 1963). Assess this claim.
10. Have participants in clinical trials of pharmaceuticals gained agency during the last hundred years?
11. Does the history of climate change show that climate science (or climate scientists) has become increasingly political over time?
12. Explanation in biology requires the discovery of mechanisms. Do you agree?

END OF PAPER