
Monday 4 June 2007

1.30–4.30 pm

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 chosen 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 number of the question.

*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.

<p>You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator.</p>

History of Science

SECTION A

- 1 What was the difference between natural philosophy and science?
- 2 'The theoretical content of science should receive the lion's share of historical attention.' Do you agree?

SECTION B

- 3 Between 1543 and 1687, why did any European believe the Earth orbited the Sun?
- 4 **Either** (a) Did the study of anatomy have a 'Renaissance' between 1500 and 1700?
Or (b) Was the 'one-sex body' the dominant model of the human body in pre-Enlightenment Europe?
- 5 **Either** (a) Why did rulers patronise scientific societies and academies in seventeenth- and eighteenth-century Europe?
Or (b) How and why did seventeenth and eighteenth century naturalists attempt to classify living beings?
- 6 **Either** (a) Did Newtonian natural philosophy imply a clockwork universe?
Or (b) Is chemical inquiry in eighteenth-century Europe best described as a 'postponed scientific revolution'?
- 7 'The hospitals of post-revolutionary Paris were museums for the analysis of disease'. Discuss this claim in relation to other museums of the period.
- 8 **Either** (a) In what ways was Charles Darwin a typical nineteenth-century man of science?
Or (b) Why was the *Origin of Species* an important book if most scientists rejected the mechanism of natural selection?

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- 9 How and why did universities emerge as centres for original scientific research during the nineteenth century?
- 10 **Either** (a) 'Psychiatry came of age when it was taken over by the drug companies.' Discuss.
- Or** (b) 'I don't think that the conceptions of nuclear fission have strained any man's attempts to understand them, and I don't feel that any of us have really learned in a deep sense very much from following this up' (Robert Oppenheimer). Was the making of the atomic bomb a scientific or a technological accomplishment?
- 11 **Either** (a) Was molecular biology born in 1953?
- Or** (b) In 1949, the journal *Science* called sickle-cell anaemia 'a molecular disease'. What made this claim possible and what consequences did it have?

END OF PAPER

Tuesday 5 June 2007

9.00 am – 12.00 pm

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 chosen 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 number of the question.

*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.

<p>You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator.</p>

Philosophy of Science

SECTION A

- 1 What is scientific progress?
- 2 Does the philosopher of science need the history of science more than the historian of science needs the philosophy of science?

SECTION B

- 3 **Either** (a) Can a claim such as 'I know I have two hands' be used to argue against epistemological scepticism?
Or (b) How good is the reliabilist solution to the problem of induction?
- 4 **Either** (a) What is the relationship between causes and counterfactuals?
Or (b) What is the difference between laws and coincidences?
- 5 **Either** (a) How is deducing that a phenomenon occurs different from explaining why it occurs?
Or (b) Do scientists count the observation of something that is both F and G a reason to believe that all Fs are G?
- 6 Should the same kinds of causes be used to explain true and false beliefs?
- 7 Are the results of science known primarily by individual scientists or by groups of scientists?
- 8 **Either** (a) 'Karl Popper's philosophy of science is bad for philosophers but good for scientists.' Discuss.
Or (b) 'Thomas Kuhn uses the term "incommensurable" in a wide range of senses, from the mundane to the ridiculous.' Where would you draw the line?
- 9 What can biological evolution tell us about human nature?
- 10 Compare and contrast the ethics of the use of animal and human experimental subjects.

END OF PAPER