

Monday 6 June 2005

9-12

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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 coversheet and on **each** bundle.*

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

## HISTORY AND PHILOSOPHY OF SCIENCE (1)

## History of Science

## SECTION A

- 1 How has the relationship between the sciences and mathematics changed throughout history?
- 2 What is the difference, if any, between the history of science and the history of technology?

## SECTION B

- 3 **Either** (a) Was there a scientific revolution in sixteenth-century and seventeenth-century Europe?  
  
**Or** (b) What effects did new societies and academies have on natural philosophy in seventeenth-century and eighteenth-century Europe?
- 4 **Either** (a) 'Between 1500 and 1700 medical ideas changed more than medical practices.' Discuss.  
  
**Or** (b) Why did the stethoscope become the emblematic instrument of the Clinical School of post-revolutionary Paris?
- 5 **Either** (a) 'Thus entrenched as the Cartesian system was, it was not to be wondered at that the doctrines of Newton's *Principia* were distrustfully received.' (David Brewster, *Life of Newton*, 1831). Discuss.  
  
**Or** (b) Were botanic gardens more significant than chemical laboratories for the development of natural knowledge in eighteenth-century Europe?
- 6 How did the medical community come to accept that many diseases are caused by specific micro-organisms?
- 7 'In the nineteenth century the "is" of nature was being made a justification for the "ought" of politics, and *vice versa*.' Discuss.
- 8 Compare and contrast the institutionalisation of physics in Britain and Germany.
- 9 Critically assess Mendel's status as a discoverer.

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10 **Either** (a) 'Psychiatry has always been a mixture of fads, fashions and torture.' Is this true?

**Or** (b) 'Freud, not Einstein, was the greatest scientist of the twentieth century.' Discuss.

11 **Either** (a) What difference have patients' demands made to biomedical technologies since World War II? Discuss with reference to sickle cell anaemia AND the oral contraceptive pill.

**Or** (b) Why isn't there a contraceptive pill for men? Provide a historical answer.

END OF PAPER

Tuesday 7 June 2005

9-12

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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**

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## HISTORY AND PHILOSOPHY OF SCIENCE (2)

## Philosophy of Science

## SECTION A

- 1 Which is more likely to be true: science or common sense?
- 2 What is the relationship between the philosophy of science and scientific practice?

## SECTION B

- 3 What do the paradoxes of confirmation teach us about how scientists test their theories?
- 4 **Either** (a) Who comes closer to telling the truth about science: Popper or Kuhn?  
**Or** (b) Does the fact that past scientific theories have been false give any reason for saying that future scientific theories will be false as well?
- 5 What is the *best* solution to the problem of induction? Does it work?
- 6 Can scepticism about the external world be defeated?
- 7 Can the “Experimenters’ Regress” be avoided?
- 8 Is all scientific knowledge local?
- 9 “If the first object had not been, the second never had existed.” Is this a good theory of causation?
- 10 **Either** (a) Critically assess the ‘Best System’ view of natural laws.  
**Or** (b) What is the relationship between explanation and prediction?
- 11 Who should decide what scientific research to fund?

END OF PAPER