CLT2 O11

NST2HP
Natural Sciences Tripos Part II: History and Philosophy of Science

Paper 1: Early Science and Medicine

You should answer four questions in total. Answer one question from Section A and three questions from Section B. All questions carry equal weighting

You should spend no more than three hours on answering all the questions, and a word limit is set of no more than 1,500 words per answer.

All your answers for this paper should be submitted in one DOC, DOCX or PDF document. Each answer should be clearly headed with the question number and the question.

Put your Blind Grade Number (BGN) at the start of the document. Do not put your name anywhere in the document.

SECTION A

1. Was medical and scientific knowledge ever separate from religion in premodern Europe?

2. Is cross-cultural exchange a crucial concept for the history of early science and medicine?

3. What was the role of images in the formation of early modern knowledges?

SECTION B

4. Did sixteenth-century Europe witness an “anatomical renaissance”?

5. Was there such a thing as a “scientific instrument” in early modern Britain?

6. Was the practice of first-hand observation valued more highly by early modern physicians than it had been by their medieval predecessors?

7. Who was permitted to practise medicine in early modern European society?

8. How did changes in the reading practices of natural philosophers and physicians shape the development of medicine and/or science?

9. Why is Galileo Galilei such a central figure in so many accounts of the Scientific Revolution?

10. How did the emergence of the Atlantic World shape early modern science and medicine?

11. What role, if any, did “the public sphere” play in the evolution of early modern science and medicine?

12. Why did the experience and treatment of illness necessarily differ from one individual to another in premodern China?

END OF PAPER

NST2HP
Natural Sciences Tripos Part II: History and Philosophy of Science

Paper 2: Sciences and Empires

You should answer four questions in total. Answer one question from Section A and three questions from Section B. All questions carry equal weighting

You should spend no more than three hours on answering all the questions, and a word limit is set of no more than 1,500 words per answer.

All your answers for this paper should be submitted in one DOC, DOCX or PDF document. Each answer should be clearly headed with the question number and the question.

Put your Blind Grade Number (BGN) at the start of the document. Do not put your name anywhere in the document.

SECTION A

1. What makes science “modern” in different contexts? Consider carefully chosen examples across time, disciplines, and/or places.

2. What role, if any, did industrial capitalism play in the development of new scientific disciplines during the nineteenth century?

3. How did cross-cultural encounters in the context of European commercial and imperial expansion lead to the circulation of skills, practices, objects, and bodies of scientific knowledge around the globe? Discuss with two examples.

SECTION B

4. In what sense, and for what reasons, did biogeography become a “big science” in the nineteenth century?

5. What impact did decolonisation have on the ways that states in Africa and Asia used expert knowledge to manage their natural resources?

6. To what degree did post-Second World War developments in computing technology fundamentally transform the methods and objectives of personal data collection?

7. What are the “survey sciences” and why were they important for the British Empire?

8. “It wasn’t new physical knowledge or resources but new social organisation that proved critical to the success of the Manhattan Project.” Discuss.

9. Discuss the relationship between science and nationalism in South Asia in the early twentieth century.

10. What does the Boxer Rebellion (1900) have to do with the history of science in China?

11. How were Charles Darwin’s ideas translated in Japan in the late nineteenth and twentieth century?

12. What do anthropologies of exchange and gift tell us about the history of economics?

END OF PAPER

NST2HP
Natural Sciences Tripos Part II: History and Philosophy of Science

Paper 3: Modern Medicine and Life Sciences

You should answer four questions in total. Answer one question from Section A and three questions from Section B. All questions carry equal weighting

You should spend no more than three hours on answering all the questions, and a word limit is set of no more than 1,500 words per answer.

All your answers for this paper should be submitted in one DOC, DOCX or PDF document. Each answer should be clearly headed with the question number and the question.

Put your Blind Grade Number (BGN) at the start of the document. Do not put your name anywhere in the document.

SECTION A

1. In what ways did patrons and funders influence medicine and biology since 1800?

2. “Read little, see much, do much” (Fourcroy). How, and to what extent, did practices of visualisation gain importance in nineteenth- and twentieth-century medicine?

3. Discuss the historical connections between racism, medicine and the life sciences.

SECTION B

4. Assess the changing role of instruments in the diagnosis of disease between 1780 and 1920.

5. Why were nineteenth-century practitioners of medicine and public health so preoccupied with dirt and bad odours, and to what extent had this changed by 1900?

6. How and with what consequences did medicine become a profession in the nineteenth century?

7. “The central science of medicine is physiology.” Who supported and who resisted this view in the nineteenth and twentieth centuries, and why?

8. To what extent did the making of penicillin mark a “revolution” in the development of new drugs?

9. How, and to what extent, did scientific drugs change the experience and management of chronic illness in the twentieth century? Discuss with respect to diabetes AND/OR cancer.

10. What impact did global Cold War tensions have on medicine and public health?

11. What does the history of eugenics tell us about the history of medicine around 1900?

12. Is “molecularization” a helpful concept in understanding the history of biology since 1945?

END OF PAPER

NST2HP
Natural Sciences Tripos Part II: History and Philosophy of Science

Paper 4: Philosophy and Scientific Practice

You should answer four questions in total. Answer one question from Section A and three questions from Section B. All questions carry equal weighting

You should spend no more than three hours on answering all the questions, and a word limit is set of no more than 1,500 words per answer.

All your answers for this paper should be submitted in one DOC, DOCX or PDF document. Each answer should be clearly headed with the question number and the question.

Put your Blind Grade Number (BGN) at the start of the document. Do not put your name anywhere in the document.

SECTION A

1. “Different sciences have different strategies and that’s OK.” Discuss.

2. Is there a formulation of scientific method that justifies superiority of science to all other forms of knowledge?

3. “Each science has its own philosophical problems. There is no such thing as ‘general’ philosophy of science.” Discuss.

SECTION B

4. Do evolutionary biologists need to embrace a reciprocal account of causation?

5. What is the relation between scientific explanation and rational choice models?

6. Must economics be a deductive science?

7. Which value judgments help economics and which harm it?

8. What is a normativist approach to disease? Is it compelling?

9. What kind of evidence should we have to assess the benefits and harms of medical interventions? Why?

10. “Without an explanation of consciousness, we cannot know whether an AI is conscious.” Discuss.

11. In what ways, if any, is metaphysics prior to physics?

12. Should we treat severe addicts as though they are responsible for their addictive behaviours?

END OF PAPER

NST2HP
Natural Sciences Tripos Part II: History and Philosophy of Science

Paper 5: Epistemology and Metaphysics of Science

You should answer four questions in total. Answer one question from Section A and three questions from Section B. All questions carry equal weighting

You should spend no more than three hours on answering all the questions, and a word limit is set of no more than 1,500 words per answer.

All your answers for this paper should be submitted in one DOC, DOCX or PDF document. Each answer should be clearly headed with the question number and the question.

Put your Blind Grade Number (BGN) at the start of the document. Do not put your name anywhere in the document.

SECTION A

1. Does science need foundations? Can philosophy provide them?

2. Does the progress of science always involve improved explanations?

3. Does pragmatism change standard debates in the philosophy of science?

SECTION B

4. What are the most enduring aspects of scientific knowledge?

5. Do you think van Fraassen is correct about the aims of science?

6. Does common sense support scientific realism?

7. What, if anything, is the connection between lawhood and simplicity?

8. Does probability exist in the world, or in your mind?

9. What is the biggest weakness of the deductive–nomological model of explanation?

10. What, if anything, do causal and non-causal explanations have in common?

11. What are the best arguments against micro-reductionism?

12. What is the pragmatist notion of inquiry?

END OF PAPER

HPT3 HPS6

NST2HP
Natural Sciences Tripos Part II: History and Philosophy of Science

Paper 6: Ethics and Politics of Science, Technology and Medicine

You should answer four questions in total. Answer one question from Section A and three questions from Section B. All questions carry equal weighting

You should spend no more than three hours on answering all the questions, and a word limit is set of no more than 1,500 words per answer.

All your answers for this paper should be submitted in one DOC, DOCX or PDF document. Each answer should be clearly headed with the question number and the question.

Put your Blind Grade Number (BGN) at the start of the document. Do not put your name anywhere in the document.

SECTION A

1. What do we gain by recognising that science has a sociology?

2. When, if ever, should we insulate science from society?

3. Compare and contrast appeals to scientific authority in debates over climate and healthcare.

SECTION B

4. What are the relative advantages and disadvantages of the Mertonian versus the Fleckian approach to sociology of science?

5. How did the theory of class struggle shape the history of science in the People’s Republic of China?

6. What does the history of climate data coverage tell us about the science and politics of climate change?

7. “Algorithmic bias is inevitable so it is wrong for medical practitioners to trust algorithms.” Discuss.

8. Do psychiatric diagnoses do more harm than good?

9. What is the most significant ethical challenge to mitochondrial donation technologies? How, if at all, can that challenge be answered?

10. “Making cancer screening compulsory would promote population health; therefore, we ought to make cancer screening compulsory.” Is there anything wrong with this argument?

11. Is the “Value Free Ideal” viable?

12. “If a computer answered this question, that would be cheating.” Discuss with reference to work in the sociology and/or ethics of technology.

END OF PAPER