SPECIMEN PAPER FOR 2019

Paper 1: Early History of Science, Medicine and Technology
History of Medicine track
(History of Science track not offered)

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

SECTION A

1. How did the discovery of the Americas shape medical and scientific knowledge in Europe?

2. How were diseases cured in medieval and early modern Europe?

3. What was the role of printing in the development of early modern science and medicine?

SECTION B

4. Did the traditional gods have any place in ancient Greek and Roman explanations of nature?

5. Evaluate the role of astrology in medieval medicine.

6. Name three significant transformations in theories of medicine in China between the Tang and Ming dynasties, and discuss why they were significant to the history of medicine.

7. Discuss the influence of Galen on early modern medicine.

8. Were irregular healers really irregular?

9. Did Newtonianism change during the Enlightenment?

10. Why did mechanical models of the body become so important in the eighteenth century?

11. Did scientific images become more accurate in the early modern period?

12. What are the limits of archival sources for the study of early modern science and medicine?

SPECIMEN PAPER FOR 2019

Paper 2: Sciences and Empires (1780–present)

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

SECTION A

1. To what extent are historians justified in presenting the years around 1900 as a turning point in the history of science and technology?

2. Compare the relative contributions of fieldwork and of experimentation to the practice of the sciences since 1800.

3. What is the significance of economic factors in explaining the development of scientific institutions since 1800?

SECTION B

4. What did the Calendar Case suggest about the relationship between science and politics in the Qing dynasty?

5. How did Charles Darwin's experiences on the *Beagle* voyage shape his attitudes towards race and human origins?

6. "Technology was more important for the development of thermodynamics than it was for the development of quantum mechanics." Assess this claim.

7. Who might have voiced opposition to the Metre Convention of 1875 and why?

8. How have anthropologists used the study of others to address aspects of their own society?

9. Thomas Henry Huxley praised *The Origin of Species* as "a veritable Whitworth gun in the armoury of liberalism". In a broad comparative context, was Huxley correct in seeing Darwin's book as an effective instrument for reform?

10. Did the physical sciences move beyond the senses circa 1900?

11. Shortly after World War II, Lee DuBridge reportedly remarked that "The bomb ended the war, but radar won the war". Do you agree?

12. How did the Sino-Soviet Split shape science and technology in Cold War East Asia?

SPECIMEN PAPER FOR 2019

Paper 3: Modern Medicine and Life Sciences (1780–present)

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

SECTION A

1. "'Medical science', like 'military intelligence', is a contradiction in terms." Does your understanding of the history of science and medicine since 1750 support such a cynical view?

2. To what extent did change originate within nineteenth and twentieth-century medicine, natural history, and biology, and to what extent from without?

3. "The history of modern medicine should focus not on the eminent doctors and scientists who named or cured diseases, but on the perspectives of patients who suffered from those diseases." What are the advantages and disadvantages of this approach?

SECTION B

4. "The rise of medicine as a profession in the mid-nineteenth century sounded the death knell for women's participation in healing practices." Assess this claim.

5. Was there a "bacteriological revolution" in late nineteenth-century medicine?

6. "Disease germs are the most democratic creatures in the world: they know no 'distinction of race, color or previous condition of servitude'" (*American Journal of Public Health,* 1915). Discuss with reference to the history of twentieth-century medicine.

7. Is it generally true that reproductive technologies have been developed on animals first and then applied to women?

8. Discuss the role of patents in the development of biotechnology.

9. "The experimental approach to the challenge of disease assures us that the Golden Age of Medicine we now enjoy will extend far into the future" (President of the New York Academy of Sciences, 1956). Discuss the significance of such claims for the history of twentieth-century medicine.

10. Why did health policymakers advocate for "health for all" in the 1970s?

11. How did public health policies between 1950 and 1989 reflect global Cold War tensions?

12. How did agricultural science advance the objectives of the Atoms for Peace initiative?

SPECIMEN PAPER FOR 2019

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.*

SECTION A

1. Different sciences have different methods. So what?

2. In what sense, if any, is causal inference a central goal of science?

3. Do sciences present a unified picture of the world?

SECTION B

4. Should physics be understood as answering metaphysical questions?

5. Has modern physics updated our philosophical conceptions of time? Discuss with reference to at least one modern physical theory.

6. What is health?

7. Are randomised controlled trails the gold standard of evidence in medicine?

8. Is rational choice modelling good science?

9. The standard of goodness for a policy is the extent to which it satisfies preferences of all involved. Discuss.

10. Is “personalised medicine” just a new name for an old practice?

11. “Only humans have conscious experiences.” Do you agree?

12. Claims about biological function are etiological explanations in disguise. Is this true?

SPECIMEN PAPER FOR 2019

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.*

SECTION A

1. In virtue of what, if anything, is scientific knowledge more reliable than other forms of knowledge?

2. Do models make a difference to the issue of scientific realism?

3. Is the unity of science a good ideal?

SECTION B

4. “The success of science would be a miracle unless theories were, to some extent, true.” Discuss.

5. Is the pessimistic meta-induction a strong inductive argument?

6. Is structural realism “the best of both worlds”?

7. “Any theory in the special sciences is ultimately reducible to a theory in physics.” Do you agree?

8. “The best explanations are those that lead to understanding.” Do you agree?

9. Is the deductive-nomological model an adequate account of scientific explanation?

10. Are laws of nature mere regularities?

11. “Similarity is neither necessary nor sufficient for scientific representation.” Discuss.

12. How, if at all, can idealised models enable learning true facts about phenomena?

SPECIMEN PAPER FOR 2019

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.*

SECTION A

1. In what senses is scientific knowledge social?

2. Can science be objective? Ought it be?

3. How should we divide labour between scientists and policy-makers?

SECTION B

4. Do social interests distort scientific knowledge?

5. Can scientific experiments be replicated?

6. "No idea is more provocative in controversies about technology and society than the notion that technological things have political qualities" (Langdon Winner, 1988). Has the accuracy of this statement changed since 1988?

7. "Close contact between science and the practice of collective farms and State farms creates inexhaustible opportunities for the development of theoretical knowledge" (Trofim Lysenko, 1948). Discuss.

8. Debates about the climate are as old as civilisation itself. Is our current preoccupation with climate any different?

9. Should we ban alcohol?

10. Pronuclear Transfer (PNT) involves manipulating and destroying human embryos. Does this have any relevance for our ethical assessment of the technology?

11. What are the strengths and weaknesses of Longino's contextual empiricism?

12. "As long as everyone involved consents to the process, use of MRTs is ethically unproblematic." Discuss.

13. Can scientists communicate climate knowledge in value-free ways? Should they?

14. How can we assess whether technology progresses?

15. Does the fact of climate change undermine Marxist accounts of the development of the productive forces? Does this matter?