

HSTR 207CS: Science & Technology in World History Final Exam Study Guide

The final exam will incorporate material from your readings, the lectures, and our discussions. You should bring a blue book to the exam. No notes or books will be allowed.

Sample Essay Questions

Give examples of the various connections between science and society (history of science), and between nature and culture (environmental history).

What is a socio-technological system? Examples.

What is a socio-trophic cascade? Examples.

What is Yali's question? And what is your answer? What is Harari's answer?

Explain Diamond's "chain of causation" among ultimate, intermediate, and proximate causes when answering the question of why the West has so much wealth and power today as compared to the rest of the world.

What are the hidden problems in Montana's Big Sky? Are we set up for a "collapse"?

What are examples of "imagined communities" and why does Harari think the concept is significant?

According to Harari, are we happier?

Harari begins his last chapter by stating, "This book began by presenting history as the next stage in the continuum of physics to chemistry to biology." What does he mean? How does he end his book?

According to Harari, how are we breaking away from natural selection and replacing it by intelligent design? What does he think about that? What do you think about that?

Describe Johnson's ecosystem approach to history, focusing especially on different types of "flows." Use specific examples of these flows.

Why does Johnson start with Priestley's quote, "The English Hierarchy... has equal reason to tremble at an air pump, or an electrical machine"? How does it encapsulate his thesis?

Why is it important to understand the early history of climate science (the work of Eunice Foote, John Tyndall, Joseph Fourier and others)?

How did a new spatial approach to science transform our understanding of the geophysical sciences?

How does the history of climate science exemplify what Harari calls "the marriage of science and empire"?

According to the recent IPCC, what are going to be the geophysical effects of increasing levels of CO₂ in the atmosphere?

According to our readings and class discussions, what are going to be the larger social and cultural effects of a warming planet?

What is the “anthropocene”? What is significant about the concept? How could the concept be dangerous?

According to Kahan, why are we poles apart on climate change?

If our knowledge of climate science is sound and the problem of a changing climate is real and evident, then why haven’t we done something about it?

Why is Marcy Darnovsky concerned that CRISPR technology will lead to the “emergence of a market-based eugenics”?

In defending gene editing, how does John Harris use the terms “nature” and “natural”?

Describe how CRISPR technology works. How could it be used to help solve the problem of the Zika virus? What, according to critics, are some of the unintended consequences we need to worry about?

Why does Vannevar Bush describe science as the endless “frontier”? How does he argue for “basic” vs “applied” science? Where should basic science be practiced, and why?

Why is Dwight Eisenhower so concerned about the “military-industrial complex”?

Why does Barry Goldwater argue that we need more, not less, of the military-industrial complex?

Large Essay Question

“It is one thing to acquire the scientific and technological sophistication to understand environmental questions; it is quite another to integrate solutions into deeply rooted religious and cultural traditions, established political and national ideologies, and entrenched behaviors of production and consumption. Solving today’s most pressing environmental questions will require a combination of scientific and technological knowledge and the humanistic and artistic knowledge that comes from analyzing human values, aesthetics, needs, and desires.”

Describe what this means by discussing examples we have used in class.