UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE AND ENGINEERING

FINAL EXAMINATIONS, SPRING 2001

HPS284S - HISTORY OF NORTH AMERICAN TECHNOLOGY

Examiner - J. Langins

INSTRUCTIONS: No aids or calculators permitted. Time for the examination: Two and one-half hours. It is divided into three parts, all of which must be completed. Fill out Part I on the examination paper and DO NOT FORGET TO SUBMIT IT WITH YOUR ANSWER BOOK(S).

PART I consists of a single assignment that requires matching words in one column with the most appropriate words in another column. Value of this part is 5% of your final mark.

PART II consists of six essay questions. Do THREE out of the six questions in Part II. The questions are all of equal value and are worth 10% each. Value of this part is 30% of your final mark.

PART III consists of two essay questions. Do ONE of these questions. The questions are all of equal value and are worth 5% each. Value of this part is 5% of your final mark.

Total value of this examination is 40% of your final mark.

Do not forget to NUMBER your questions and indicate the questions you have answered on the front of your examination book in the spaces provided.

PART I (MATCHING)
PUT THE LETTER BEFORE EACH WORD OR PHRASE IN THE RIGHT-HAND COLUMN IN THE APPROPRIATE BLANK OF THE LEFT-HAND COLUMN
(Total value of this part: 5%)

Tim Berners-Lee _____

Jay Forester _____

RAND _____

Internal Improvements_____

Vauban _____

RCA _____

Rideau Canal_____

Harold Innis _____

Alfred Chandler _____

The Wizard of Menlo Park_____

a. Corps du Génie

b. Bohr

c. Col. John By

d. Canals and Roads

e. United States Navy

f. Ecole Polytechnique

g. Edison

h. United States Air Force

i. World Wide Web

j. Staple Economies

k. Invisible Hand

l. Project Whirlwind

m. Ontario Hydro

n. Thomas Watson, Sr.

o. Visible Hand

PART II (ESSAY QUESTIONS)
DO THREE OUT OF SIX QUESTIONS
(Total value of this part: 30%)

1. Which company is generally credited with creating the first modern industrial research laboratory in the United States? When did it do this? What other reasons have been suggested, besides the desire to make new technical discoveries, for the interest of large American corporations in promoting industrial research?

2. England led the world into the classical Industrial Revolution. In a relatively short time, however, England's leadership was challenged by what had been a relatively backward former colony - the United States. Discuss the possible reasons for American rise to world dominance in industrial power during the nineteenth century. In your answer, restrict yourself to factors that were operative in the eighteenth and nineteenth centuries. Do *not* restrict yourself to purely "technical" factors, e.g. the incandescent lamp was invented in America and gave the Americans a head start in the electrical industry. (The answer just given as an example is a poor one and would get virtually no marks.)

3. In the period that coincided approximately with the so-called Second Industrial Revolution, business underwent a revolution in the United States. The old model of capitalism described and attacked by Karl Marx was replaced with a modern capitalism that in many ways is still with us today. What was the role of technology, especially the modern technologies of the nineteenth century, in bringing about this revolution in business.

4. When it comes to electrical lighting, what did Edison really invent?

5. The telegraph has sometimes been called the "Internet of the Nineteenth Century". Discuss this statement by comparing the features and impact of the two systems and give your opinion on the matter.

6. Discuss the structural differences between the engineering profession in Britain and France in the early nineteenth century. In your answer refer to recruitment, education, and relations with society in the form of governments and clients.

PART III (ESSAY QUESTION)
DO ONE OUT OF TWO QUESTIONS
(Total value of this part: 10%)

7. Many workers see Taylorism as an exploitative capitalist ideology masquerading as science. Yet some people have also argued that Taylorism would inevitably lead to socialism. Discuss the latter argument.

8. Surely, being an expert in one's field is not a disadvantage for an inventor! Yet some people have argued, using the history of technology to support their case, that this can indeed be so. Discuss in detail one such argument.