SAMPLE OLD EXAMS

First Midterms

Winter 2000
Spring 1996
Sample Questions, Spring 1996
Spring 1995

Midterm

Spring 1998
Spring 1999

Second Midterms

Winter 2000
Spring 1997
Spring 1996
Sample Questions, Spring 1996
Spring 1995
Sample Questions, Spring 1995

Finals

Winter 2000
Sample Questions, Winter 2000
Spring 1998 – 1, 2
Spring 1996 – 1, 2
Sample Questions, Spring 1995
Spring 1995 – 1, 2
1. Income per capita between the richest and poorest countries in the world now vary by a factor of about
A. 3 to 1
B. 4 to 1
C. 5 to 1
D. 10 to 1
E. 25 to 1

2. Which of these is NOT a revolution that anyone alleges occurred in England in 1760-1860.
A. Industrial Revolution
B. Agricultural Revolution
C. Managerial Revolution
D. Transport Revolution
E. Demographic Revolution

3. Which of the following factors did NOT play a large role in explaining the rise of population in England between 1760 and 1850.
A. Women marrying 2 years earlier.
B. More women married.
C. More women had children out of marriage.
D. Decline in mortality rates.
E. None of the above.

4. Which of the following people did NOT make a significant technological discovery in the Industrial Revolution period?
A. The Reverend Cartwright
B. James Watt
C. George Stephenson
D. Jethro Tull
E. James Hargreaves
5. Which of the following parts of the United Kingdom was most transformed in the Industrial Revolution period?

A. Ireland  
B. Wales  
C. Scotland  
D. Northern England  
E. Southern England

6. Why was it hard for most innovators to make money from their inventions in the Industrial Revolution period?

A. It was hard to raise capital for new firms.  
B. The new devices were so simple they were easily copied.  
C. Many of the new devices could be used on a very small scale.  
D. A and B  
E. A and C

7. The process of ending communal rights in agriculture in England was called

A. The privatization movement.  
B. The enclosure movement.  
C. The Glorious Revolution  
D. The agricultural revolution.  
E. The capitalist revolution.

8. Suppose that in an economy output is growing at 6%, the capital stock is growing at 4%, the labor supply is growing at 2%, the land supply is fixed and the share of capital, labor and land in national income are respectively $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{1}{4}$. What is the rate of growth of output per worker?

A. 0%  
B. 2%  
C. 3%  
D. 4%  
E. 5%
9. If the growth rates and shares are as in the previous question what is the growth rate of efficiency?

A. 0%
B. 2%
C. 3%
D. 4%
E. 5%

10. Suppose that in an economy efficiency is growing at 3%. Output prices are increasing at 2% the cost of capital is constant and land rents grow at 4%. The share of capital, labor and land in national income are respectively \( \frac{1}{4} \), \( \frac{1}{2} \), and \( \frac{1}{4} \). What is the growth rate of wages?

A. 2%
B. 4%
C. 5%
D. 6%
E. 8%

11. Suppose that in the previous question the efficiency growth rate of the economy increases by 2% to 5%. If output prices grow at the same rate what will happen to the rate of growth of wages?

A. Wages will grow at 4% more than before.
B. Wages will grow at 4% less than before.
C. Wages will grow at 2% more than before.
D. Wages will grow at 2% less than before.
E. Not enough information to tell what happens to output prices or wages.

12. Suppose that the share of capital in the cost of inputs in an industry is 25%, the share of labor 50%, and the share of land 25%. The table below shows the growth rate of prices, capital rental costs, wages and land rents for the industry. In which case is productivity growth fastest?

<table>
<thead>
<tr>
<th>Output Prices</th>
<th>Capital rental costs</th>
<th>Wages</th>
<th>Land rents</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. 1%</td>
<td>4%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>B. -1%</td>
<td>4%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>C. 1%</td>
<td>-4%</td>
<td>-2%</td>
<td>-4%</td>
</tr>
<tr>
<td>D. -1%</td>
<td>-4%</td>
<td>-2%</td>
<td>-4%</td>
</tr>
<tr>
<td>E. 1%</td>
<td>4%</td>
<td>2%</td>
<td>0%</td>
</tr>
</tbody>
</table>
13. Suppose that the share of national income paid to capital owners is .25. If there is an additional social return to capital of $3 for every private $1 of return, then in doing growth accounting a 1% growth of the capital stock will cause what percentage growth in output.

A. Not sufficient information to tell.
B. .25%
C. .50%
D. 0.75%
E. 1.00%

14. The economy in Europe in 1600-1700 we believe was still a Malthusian economy. This was because:
A. Fertility within marriage was unrestricted.
B. Birth rates were above 30 per thousand.
C. The technology of the society was not improving.
D. The technology of the society was improving only slowly.
E. Agriculture was still the major occupation.

15. In a Malthusian economy there is a one time improvement in the technology. The effect of this in the short run is:
A. Wages go up, the birth rate stays the same, and the death rate falls.
B. Wages go up, the birth rate and death rate both fall.
C. Wages go down, the birth rate stays the same, and the death rate falls.
D. Wages, birth rates and death rates all stay the same.
E. Wages fall, birth rates and death rates stay the same.

16. In a Malthusian economy there is a one time improvement in the technology. The effect of this in the long run is:
A. Wages go up, the birth rate stays the same, and the death rate falls.
B. Wages go up, the birth rate and death rate both fall.
C. Wages go down, the birth rate stays the same, and the death rate falls.
D. Wages, birth rates and death rates all stay the same.
E. Wages fall, birth rates and death rates stay the same.

17. Suppose that in France in 1300 the government improved sanitation in towns by public health measures, and so reduced infant mortality. What will be the long run effect on life expectancy of this change?
A. Increases.
B. Stays the same
C. Decreases
D. Increases if wages increase.
E. Increases if wages decrease.
18. In 1349 the arrival of the Black Death caused death rates in Europe to increase for the next 300 years. The effect of this in the **long run** was:

A. Wages went up, births per 1000 stayed the same, and deaths per 1000 increased.
B. Wages went up, births and deaths per 1000 both increased.
C. Wages went up, births and deaths per 1000 stayed the same.
D. Wages, and births and deaths per 1000 all stayed the same.
E. Wages fell, and births and deaths per 1000 all stayed the same.

**Part B: LONG ANSWER**

1. In a recent book Professor Kenneth Pomeranz of UC Irvine has argued that China was as advanced technologically as Europe in 1800 because the living standards in some regions of China were as high as those in Europe. Using the Malthusian model consider whether this claim is justified. (28 points)
FIRST MIDTERM

There are 50 points for the exam.

SHORT ANSWER

1. List up the four “revolutions” that seemingly occurred in Britain between 1770 and 1850. (2)

2. Match up the innovation, the date, and the innovator.

<table>
<thead>
<tr>
<th>Innovation</th>
<th>Date</th>
<th>Innovator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmospheric Engine</td>
<td>1801</td>
<td>Cartwright</td>
</tr>
<tr>
<td>Pattern loom</td>
<td>1705</td>
<td>Leblanc</td>
</tr>
<tr>
<td>Mule</td>
<td>1830</td>
<td>Stephenson</td>
</tr>
<tr>
<td>Steam locomotive</td>
<td>1779</td>
<td>Crompton</td>
</tr>
<tr>
<td>Power loom</td>
<td>1787</td>
<td>Newcomen</td>
</tr>
<tr>
<td>Soda process</td>
<td>1785</td>
<td>Jacquard</td>
</tr>
</tbody>
</table>

3. What was unusual about the pattern of imports and exports from Britain in 1850? Why does this suggest that the industrial revolution was not just confined to the textile industry? (4)

4. Suppose that prices of cotton yarn fell at 2% per year between 1770 and 1820, while the cost of capital rose by 1% per year and the cost of labor by 2%. Calculate the rate of productivity growth in the industry if capital and wages were each 50% of costs. Show your calculations. (3)

5. Before 1770 Europe had a Malthusian economy where the wage was at the subsistence level. Explain why this subsistence wage was much higher in Europe than it was in India in the nineteenth century. (4)

LONG ANSWERS

6. Explain how we know that the main immediate sources of growth of income per capita since the industrial revolution are about one third increases in capital per worker and two thirds gains in “efficiency”. Explain why we believe only one of these sources of growth is fundamental. Explain why there is a debate about which this is? (17)

7. It has been argued that the industrial revolution was delayed because innovators had difficulty profiting from their innovations. Explain this problem using illustrations from the industrial revolution period from the class notes and the Mokyr book. (14)
SAMPLE SHORT QUESTIONS FOR THE FIRST MIDTERM

SHORT ANSWER

1. Suppose that in an economy output is growing at 6%, the capital stock is growing at 6%, the labor supply is growing at 2%, and the share of capital, labor and land in national income are respectively 1/4, 1/2, and 1/4.

   (a) What is the rate of growth of output per worker? (2)

   (b) What is the share of the growth of output per worker that is explained by capital accumulation (show your calculations)? (2)

   (c) What is the growth rate of efficiency? (2)

   (d) Suppose the rate of growth of output prices, and of wages, returns on capital and land rents is 2% in this economy. Is this possible given your answer in (c). Explain. (3)

(you do not need a calculator to answer this question).

2. Things are often not as they seem. Explain briefly which of the following statements are incorrect of misleading and which are true:

   (a) James Watt invented the steam engine. (2)

   (b) Stephenson built the first railroad in 1830. (2)

   (c) Coal was first mined in the Industrial Revolution period on a large scale to fuel the new steam engines. (2)

   (d) Before the Industrial Revolution living standards in Europe were always very low because of the primitive technology. (2)

   (e) The water wheel was dramatically improved in the Industrial Revolution period. (2)

   (f) Capital accumulation has been the main direct source of increasing incomes per person since the Industrial Revolution. (2)

   (g) Ending communal cultivation rules had a major effect on agricultural efficiency in Europe (2)
(h) The French made major improvements in weaving technology in the Industrial Revolution period. (2)

(i) Juliette in Shakespeare’s “Romeo and Juliette” was a typical Italian girl of her time (circa 1600). (2)

(j) No women in Western Europe married as early as age 16 in 1770 (2)

(k) Without coal there could have been no Industrial Revolution (2)

(l) By 1850 only 10% of the population in Britain was employed in agriculture. (2)

(m) By 1850 Britain produced one third of all the cotton textiles in the world (2)

(n) Because of the onset of the Black Death in 1349 death rates in Europe were twice as high in 1400 as in 1300. (2)
FIRST MIDTERM

There are 50 points for the exam.

**SHORT ANSWER**

1. (a) The cotton textile industry was transformed by technical innovations in the industrial revolution period. Name three of these innovations (3)

(b) Which parts of Britain was the Industrial Revolution concentrated in? (2)

(c) What was the enclosure movement? (2)

(d) What was a turnpike trust? (2)

2. (a) The fertility rate in Britain increased by almost 50% from 1750 to its peak in 1815. What changes in behavior caused this increase? (3)

(b) Show using a diagram what the effect of this fertility increase would have been in the long run on the death rate, the real wage, and the level of population in Britain. (3)

3. Suppose that capital costs are half the costs in an industry and labor costs are the other half. If output prices in the industry fall by 4%, while capital costs increase by 4%, and labor costs increase by 6%, what happened to efficiency in the industry? (3)

**LONG ANSWERS**

4. Explain the principles behind the technique of “growth accounting.” Explain the debate about what the fundamental source of growth is (16)

5. Did the reallocation of labor from agriculture to industry explain much of the growth of the Industrial Revolution period? Explain. (16)
MIDTERM

SHORT ANSWER

1. (a) What three countries together make up “Britain”? (3)

(b) Which of these countries changed most in the Industrial Revolution period? (1)

(c) When (roughly) was the Industrial Revolution? (2)

(d) Name four famous innovators of this period, and the innovation they are associated with? (8)

2. The following table shows (roughly) the growth rate of output, and of labor, capital and land input in Britain in the Industrial Revolution period.

<table>
<thead>
<tr>
<th>Period</th>
<th>Output Q</th>
<th>Capital K</th>
<th>Labor L</th>
<th>Land T</th>
</tr>
</thead>
<tbody>
<tr>
<td>1760-1861</td>
<td>1.5%</td>
<td>1.6%</td>
<td>1.2%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Assuming the shares of capital, labor and land in national income were respectively 30%, 60% and 10%,

(a) Calculate the rate of growth of output per worker (show calculations. You do not need a calculator to do these questions). (1)

(b) Calculate the rate of growth of productivity (show calculations). (2)

(c) What share of the growth of output per person is directly explained by productivity growth? (show calculations) (1)

(d) Would this conclusion about the role of productivity change if for each dollar of private return on capital there was an additional one dollar of social return not captured by the investors? Explain. (2)
(e) Suppose there were no external returns to capital investment and the rate of productivity growth had been increased by 1% per year. How much would faster would income per person have grown (roughly). Explain. (2)

3. The following table shows the growth rates of output prices, wages, rents, and capital costs for the agricultural sector in Britain between 1700 and 1861. The share of wages in income was 40%, or land rents 40%, and of capital 20%.

<table>
<thead>
<tr>
<th>Period</th>
<th>Output Prices p</th>
<th>Capital Costs r</th>
<th>Wages w</th>
<th>Land Rents s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1700-1861</td>
<td>0.5%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

(a) Show that we can measure productivity growth rates in agriculture using the formula

\[ g_A = \gamma \cdot g_r + \lambda \cdot g_w + \phi \cdot g_s - g_p \]

where \( \gamma \) is the share of capital, \( \lambda \) the share of wages and \( \phi \) the share of land rents. (6)

(b) For at least the last hundred years historians have believed that an “agricultural revolution” accompanied the Industrial Revolution, and was very important in explaining rising incomes. Why? (4)

(c) What was the actual rate of growth of productivity in agriculture given these numbers? (2)

(d) This slow growth of productivity implies that agricultural output per person fell in Britain in this period. By how much proportionately did it fall? (1)

LONG ANSWER

4. Show why in the world before the Industrial Revolution the slow growth of technology had no long run impact on real wages. (15)
MIDTERM

There are 50 points from the exam.

SHORT ANSWER  (30 points)

1. (a) Suppose in a Malthusian economy the crude birth rate is 25 per thousand. What will life expectancy at birth be? Show the calculation. (2)

(b) Suppose in this economy a new disease arrives that increases infant mortality. What will the long run effect on life expectancy be? Explain briefly. (2)

(c) Calculate the effects of an improvement in production technology on life expectancy in the long run. (4)

(d) In some sub-Saharan countries death rates are currently 20 per thousand, and the population growth rate is 3% per year. Calculate the crude birth rate. (2)

2. (a) Why do we believe that output per worker in British agriculture more than doubled between 1770 and 1850? (3)

(b) Why do we believe output per acre also more than doubled? (3)

3. (a) Show that we can calculate productivity growth in any economy from the growth rates of prices, wages, land rents and returns on capital. (8)

(b) Suppose that prices of cotton yarn fell at 3% per year between 1770 and 1850, while the cost of capital rose by 1% per year, the cost of labor by 2%, and land rents by 3%. Calculate the rate of productivity growth in the industry if the shares in costs of capital returns, wages and land rents were .4, .5 and .1. Show your calculations. (3)

(c) We saw that if there were external benefits from investment in capital then growth accounting using quantities would exaggerate the contribution of productivity growth. Would the same problem apply to estimates of productivity growth using the equation you derive in (a)? (3)

LONG ANSWER

4. The Industrial Revolution in Britain saw a wide variety of technical innovations in areas of the industry such as textiles, power production, iron and steel, and railways. Explain, with examples, what was similar about the innovations across these different industries. (20)
SECOND MIDTERM – VERSION #1

1. The “Enclosure Movement” of 1760 and later was
   A. The replacement of the open highway by private turnpikes that people had to pay to use.
   B. The confining of previously free workers to factories in the Industrial Revolution.
   C. The replacement of communal land rights in England by purely private land tenure.
   D. The system of controls to prevent the export of new technology from England.
   E. The British military strategy leading to the defeat of Napoleon in 1815.

2. We believe Britain had higher income per capita than India in 1800 because we believe:
   A. Britain had a secure political system with stable property rights.
   B. Britain already had more advanced technology.
   C. Capital was cheaper in Britain.
   D. Britain had a lower birth rate.
   E. Britain had more easily exploitable coal.

3. In which decade was the Suez canal built?
   A. 1840s
   B. 1850s
   C. 1860s
   D. 1870s
   E. 1880s

4. Those who take an “Evolutionary” view of the Industrial Revolution in Britain argue that:
   A. Not much really happened between 1760 and 1860.
   B. The Netherlands saw the first Industrial Revolution in the years 1550-1650.
   C. Growth rates were much slower in the Industrial Revolution than in the twentieth century.
   D. Technology develops through natural selection mechanisms.
   E. Given the state of the British economy and society in 1760 the Industrial Revolution was at least highly likely to occur.
5. We know there cannot have been an Agricultural Revolution alongside the Industrial Revolution because:

A. Input prices in agriculture rose little relative to output prices.
B. Yields of crops rose little over these years.
C. There were very few mechanical innovations.
D. The people such as Jethro Tull who were famous innovators in agriculture had crazy ideas.
E. The number of workers in the agricultural sector did not decline between 1760 and 1860.

6. Which sector of the economy contributed most to productivity growth in the Industrial Revolution?
A. Cotton textiles
B. Railways
C. Coal mining
D. Steam power
E. Iron and Steel

7. The profit rates of cotton textile firms in the Industrial Revolution period were about 10%, the same as the average commercial or industrial enterprise at that time. This shows that:

A. There was really little technical change in cotton textiles.
B. The workers got all the benefits from technical innovation.
C. The management of firms did not keep pace with technological advances.
D. The raw cotton producers got all the benefits.
E. Technical gains by individual firms were copied quickly by their competitors without any compensation to the innovators.

8. Suppose that prices of cotton yarn fell at 2% per year between 1770 and 1820, while the cost of capital rose by 1% per year and the cost of labor by 2%. The rate of productivity growth in the industry if capital and wages were each 50% of costs was

A. 1.5%
B. 3%
C. 3.5%
D. 4.5%
E. 5%
9. If a woman married at age 20 in Germany in the seventeenth century on average she would have given birth to how many children by age 45?
A. 2
B. 4
C. 8
D. 12
E. 16

10. Suppose that a census of ages of some population shows 32% of the ages ending in a 0 or a 5. What fraction of the population is likely illiterate?
A. 12%
B. 15%
C. 16%
D. 22%
E. 32%

11. What features tended to characterize innovators in Britain in the Industrial Revolution period?
A. They were generally short, pugnacious men.
B. They mostly profited greatly from their innovations.
C. They were mostly trained in universities.
D. They were generally illiterate.
E. They tended to come from non-conformist religious groups.

12. What is the odd name in the following list?
A. Newcomen
B. Cartwright
C. Arkwright
D. Hargreaves
E. Kay

13. Which of the following is not a formula for productivity growth estimated from prices
A. \( g_A = \gamma^r \gamma^w + \gamma^s - g_P \)
B. \( g_A = \gamma^r + \gamma^w + \gamma^s - (\gamma^r + \gamma^w + \gamma^s) g_P \)
C. \( g_A = (\gamma^r - g_P) + (\gamma^w - g_P) + (\gamma^s - g_P) \)
D. \( g_A = \gamma^r + \gamma^w + \gamma^s \)}
14. What is the most plausible number for the income elasticity of demand for food in the Industrial Revolution period?
A. 0  
B. .3  
C. .6  
D. 1  
E. 1.2

15. Manufactured exports from Britain rose greatly in the Industrial Revolution period mainly because of
A. Rapid population growth  
B. Technological advances in cotton textiles  
C. British success in the wars against the French  
D. The decline of the Dutch economy  
E. Technological advances in agriculture

16. The last major reform of the British Patent system prior to the Industrial Revolution was in
A. 1560  
B. 1603  
C. 1625  
D. 1689  
E. 1760

17. From greatest to smallest, the United Kingdom, the United States, Russia, Germany, and China ranked in terms of industrial output per capita in 1910
A. US, UK, Germany, Russia, China  
B. US, UK, Germany, China, Russia  
C. UK, US, Germany, Russia, China  
D. UK, US, Germany, China, Russia  
E. US, Germany, UK, Russia, China

18. Which of the following countries had the cheapest sources of capital in developing its railway system in the late nineteenth century?
A. USA  
B. Mexico  
C. Brazil  
D. India  
E. Argentina
Part B: LONG ANSWER

1. Explain why it seemed inevitable by 1860 that industrialization and economic development would soon spread from Britain to many of the world's poorest countries. (28 points)
SECOND MIDTERM

There are 50 points from the exam.

SHORT ANSWER (20 points)

1. (a) Why do we believe that output per worker in British agriculture more than doubled between 1770 and 1850? (3)

(b) Why do we believe output per acre also more than doubled? (3)

2. (a) Suppose in a Malthusian economy the crude birth rate is 40 per thousand. What will life expectancy at birth be? Show the calculation. (2)

(b) Suppose in this economy the government improves sanitation in towns by public health measures, and so reduces infant mortality. What will the long run effect on life expectancy be? Explain briefly. (2)

(c) In some sub-Saharan countries birth rates are currently 50 per thousand, and the population growth rate is 3% per year. Calculate the crude death rate. (2)

3. (a) Suppose that in an economy output increases from 200 to 208 units in a year, the capital input increases from 25 to 26 units, labor increases from 50 to 54 workers, and there is no change in the land area. Suppose also the shares of capital, labor and land in national output are respectively .25, .50, and .25. What is the growth rate of efficiency? (Show calculations). (4)

(b) Suppose that the shares of capital, labor and land are as in (a). Suppose output and capital are growing at 4% per year, labor is growing at 2%, and land is constant. Suppose also output prices are rising at 2%, capital costs are rising at 8%, labor costs are rising at 4%, and land rents are rising at 12%. Is this situation possible? Explain briefly. (4)

(You do not need a calculator for question 3).

LONG ANSWERS

4. There are two theories of the failure of low wage countries to industrialize since the Industrial Revolution, which focus respectively on capital and labor. Explain in detail each of the theories. Explain which seems more plausible? (15)

5. A friend asks what you have learned about the Industrial Revolution in your European history class. Explain the most important things you now know about the Industrial Revolution
to an intelligent person who has not taken this course. Your answer will be graded based on its completeness, coherence, and intelligibility. (15)
SECOND MIDTERM

There are 50 points for the exam.

SHORT ANSWER

1. (a) In 1800 the gap between the richest and poorest countries in the world in terms of income per capita was no more than 3:1, while by 1910 it was at least 10:1. Explain, using the Malthusian model, why the gap was relatively narrow early on. (4)

(b) Name four countries that got poorer relative to Britain and the USA in the nineteenth century. (4)

2. (a) What are the conventional dates given to the Industrial Revolution period in Britain? (2)

(b) The Industrial Revolution was accompanied by a demographic revolution. Explain what happened to population in this period, and what changes in behavior caused the changes. (6)

(c) Why were the Industrial Revolution and the demographic revolution so closely linked? (4)

LONG ANSWERS

3. Could the Industrial Revolution have occurred 100 years earlier than it did? Explain. (15)

4. Why didn’t the whole world industrialize soon after 1850? (15)
SAMPLE SECOND MIDTERM QUESTIONS

SHORT ANSWER

1. (a) What technical innovations of the nineteenth century made the rapid spread of industrialization seem imminent? (6)

(b) What political development again seemed to imply more rapid industrialization? (2)

(c) What three countries other than Britain had the highest industrial outputs per capita by 1914? (3)

(d) What two major countries saw the level of industrial output per capita decline between 1770 and 1914? (2)

2. (a) Rank the following countries in terms of industrial output per person in 1910: USA, Britain, Italy, Belgium, China. (2)

(b) Did a lack of domestic markets for industrial goods prevent poor countries in the late nineteenth century from industrializing? (3)

3. (a) Where was the center of the international capital market in the late nineteenth century? (2)

(b) Why did imperialism aid the flow of capital internationally? (4)

(c) Rank the following countries in terms of the interest cost of capital for railway construction in the years 1870 to 1913: USA, Britain, India. (3)

4. The countries most industrialized in 1914, USA, Britain, and Germany also were those that produced huge amounts of mineral ores and fossil energy. What is the connection? (3)

5. List 5 reasons why the cotton textile industry seemed the ideal industry to lead industrialization in poor countries. (5)

LONG ANSWERS

1. Why does the experience of the cotton industry in the nineteenth century suggest that the barrier to world industrialization was the labor supply of poor countries? (20)
2. The late nineteenth century is often called the “Age of High Imperialism.” Explain the various ways in which imperialism, particularly British imperialism, should have hastened world industrialization.
SECOND MIDTERM

There are 50 points for the exam.

SHORT ANSWER

1. (a) What technical innovations of the nineteenth century made the rapid spread of industrialization seem imminent? (6)

(b) What political development again seemed to imply more rapid industrialization? (2)

(c) What two major countries saw the level of industrial output per capita decline between 1770 and 1914? (2)

2. (a) How much (roughly) did productivity grow in British agriculture between 1770 and 1850? (2)

(b) How much (roughly) should productivity have grown by given the overall expansion of the economy? (2)

(c) Is there any evidence that the disparity between your answer in (a) and (b) can be explained by changes in income distribution? Explain. (2)

LONG ANSWERS

3. Explain in general some simple tests of whether political developments have any impact on the private economy. What do these tests suggest about the effect of the Glorious Revolution on the Industrial Revolution? (16)

4. Why does the experience of the cotton industry in the nineteenth century suggest that the barrier to world industrialization was the labor supply of poor countries? (18)
SAMPLE SECOND MIDTERM

There are 50 points for the exam.

SHORT ANSWER

1. (a) What technical innovations of the nineteenth century made the rapid spread of industrialization seem imminent? (6)

   (b) What political development again seemed to imply more rapid industrialization? (2)

   (c) What three countries other than Britain had the highest industrial outputs per capita by 1914? (3)

   (d) What two major countries saw the level of industrial output per capita decline between 1770 and 1914? (2)

2. (a) What supposedly important political event occurred in England in 1688-9? (2)

   (b) Explain briefly two simple economic tests that suggest that no-one thought that the event had much economic importance for them. (4)

LONG ANSWERS

3. Explain why the movement of land rents, wages, and the return on capital in agriculture in Britain between 1770 and 1850 challenges the standard history of the Industrial Revolution. (16)

4. What do we learn from the cotton industry about why most of the world did not follow Britain after 1850 and industrialize quickly? (15)
labor supply is growing at 2%, the land supply is fixed and the share of capital, labor and land in national income are respectively 1/4, 1/2, and 1/4. What is the rate of growth of the CAPITAL STOCK PER WORKER?

A. 0%
B. 2%
C. 3%
D. 4%
E. 5%

2. In the previous question suppose that the growth rate of the capital stock fell to 2%. By how much would the growth rate of output per worker decline?

A. 0.25%
B. 0.5%
C. 1%
D. 1.5%
E. 2%

3. Suppose the share of national income paid to the owners of land and natural resources was double what it now is, and the share of capital was correspondingly less. Assuming that the rates of growth of inputs are unchanged this would

A. Slow down the growth rate of income per person
B. Not affect the growth rate of income per person
C. Increase the growth rate of income per person
D. Slow down the rate of growth of efficiency.
E. Increase the rate of growth of efficiency.

4. Suppose that in France in 1300 the government improved sanitation in towns by public health measures, and so reduced infant mortality. What will be the long run effect on life expectancy of this change?

A. Increases.
B. Stays the same
C. Decreases
D. Increases if wages increase.
E. Increases if wages decrease.
5. A key assumption of the Malthusian model is that death rates were lower when real incomes were higher. Real incomes were at least twice as high in Europe in 1400 than in 1300. Compared to 1300 death rates per thousand in 1400 were:

A. Lower  
B. The same  
C. Higher  
D. Could be higher or lower.

6. Malthus wrote his “Essay on a Principle of Population” in

A. 1688  
B. 1728  
C. 1798  
D. 1832  
E. 1887

7. Which of the following industries did not achieve substantial productivity advance during the Industrial Revolution?

A. Iron and Steel  
B. Cotton textiles  
C. Road transport  
D. Coal Mining  
E. Steam Engines

8. Who of the following is NOT a “hero of technological change” of the Industrial Revolution in Britain?

A. Abraham Darby  
B. Richard Arkwright  
C. James Hargreaves  
D. Edmund Burke  
E. Samuel Crompton

9. Which of the following was NOT a theory advanced to explain why the German currency experienced hyperinflation in the years 1922-23

A. The Germans were trying to avoid the reparations burden.  
B. The reparations burden caused the mark to fall in foreign exchanges  
C. The Germans tried to cover too large a Government deficit by printing money.  
D. In the disorder after the end of the war municipalities and factories printed their own money greatly inflating the money supply.  
E. None of the above.
10. Suppose an economy with fiat (paper) money has an inflation rate of 10% and a real interest rate of 3%. The socially optimal rate of inflation (the one which makes most efficient use of money) is

A. -13%
B. -3%
C. 0%
D. 3%
E. 13%

11. Which of the following was NOT a practice of the Workhouses introduced by the New Poor Law in England and Ireland?

A. Monotonous diets
B. Refusing to let poor families leave the Workhouse.
C. Forcing men to turn a treadmill attached to nothing for 8 hours each day.
D. Putting wives and husbands in separate dormatories.
E. Deliberately building them as large and imposing buildings.

12. Overall calory supplies in Ireland in the famine years 1846-1851 fell by what percentage compared to 1840-5?

A. 20%
B. 50%
C. 60%
D. 80%
E. 100%

13. In the period of the Agricultural Revolution in 1760 to 1860 our current best estimate of the rate of productivity growth per year is

A. 0.2%
B. 0.8%
C. 1.0%
D. 1.6%
E. 2.4%
14. Suppose that the computer industry experiences productivity growth rates of 10% a year. Suppose also the share of the labor force in computers is 1%, the share of output which is computers is 2%, and the rate of price declines of computers is 5% per year. How much overall productivity growth in the economy does the computer industry generate per year?

A. 1%
B. 2%
C. 5%
D. 0.1%
E. 0.2%

15. Government debt in Britain in 1825 was how many time the annual GNP

A. 0.25
B. 0.5
C. 1.0
D. 1.5
E. 2.5

16. The hypothesis of “Ricardian Equivalence” advanced by Barro about the effects of government debt in the years 1790-1830 argues that

A. Debt would crowd out real capital in the economy $1 for every $1 issued
B. Debt would crowd out real capital, but by less than $1 for every $1 issued.
C. Debt would induce more saving so for every $1 of debt there would be $1 more of saving and so $1 more of real capital.
D. Debt would induce more saving so for every $1 of debt there would be $1 more of saving and no reduction in real capital.
E. Because government debt was sold world wide there was an inflow of foreign capital so that there was no decline in real capital in Britain.

17. Which of the following countries saw a decline in industrial output per capita between 1860 and 1913?

A. Britain
B. Belgium
C. Russia
D. Spain
E. China
18. In the late nineteenth century British manufacturers noticed that despite wage rates per hour in Britain that were up to 10 times as great as those of competitor producers such as China, Britain was still one of the lowest cost producers in the international cotton textile industry. They explained this as resulting from:

A. British managers being much better than foreign managers.
B. The low costs of capital in Britain.
C. The more advanced machines British mills were able to employ.
D. The much greater efficiency of British labor.
E. The much larger scale of the British industry.

19. Suppose that in a sample of ages recorded for a population the fraction of ages ending in 5 or 0 is 40%. This implies that the percentage of the population that was literate and numerate was.

A. 25%
B. 40%
C. 60%
D. 70%
E. 75%

20. The economy in Europe in 1600-1700 we believe was still a Malthusian economy. This was because:

A. The average woman gave birth to more than five children.
B. Birth rates were above 30 per thousand.
C. The technology of the society was not improving.
D. The technology of the society was improving only slowly.
E. Agriculture was still the major occupation.

21. Despite the rapid growth of output in cotton textiles between 1760 and 1850 the profit rates of individual firms seem to have been modest. This was because

A. There was surprisingly little technological advance in cotton textiles in the Industrial Revolution.
B. The technological advances being made were mainly not protected by patent law.
C. The industry remained very competitive.
D. Price of output fell so that the consumers were the main beneficiaries from technological advance.
E. Textiles did not employ large amounts of capital.

22. The move from pre-industrial to modern fertility levels in Europe was largely completed in what interval?

A. 1760-1860
B. 1810-1860
C. 1830-1880
D. 1880-1930
E. 1910-1960
23. The move from pre-industrial to modern fertility levels in Europe was largely completed in what interval?
A. 1760-1860
B. 1810-1860
C. 1830-1880
D. 1880-1930
E. 1910-1960

24. The best candidate among the following for explaining the decline of fertility levels in Europe from pre-industrial to modern levels is
A. The spread of artificial contraception devices
B. The legalization of abortion
C. The Reformation
D. The Treaty of Versailles
E. Rising income levels.

25. If for every $1 cut in payments to the poor in a Parish after the reform of the Poor Law in 1834 the total rental value of property in the parish rose by $3 this would imply that
A. The writers if the Poor Law Report were correct in their description of the Old Poor Law.
B. The Old Poor Law did not affect the effort levels of workers or the investment decisions of land owners.
C. The writers if the Poor Law Report were wrong in their description of the Old Poor Law.
D. The Old Poor Law mainly served as a subsidy for farm labor.
E. The Poor Law Reform was a failure.
Part B: LONG ANSWER

1. Many people have argued that education is the key to modern economic growth. Using the material from this course explain if this claim seems warranted. (25) (A good answer to this question will draw upon material from several of the course chapters).

2. 1760 had traditionally been taken to be a key date in world history, the break between the old Malthusian world and the modern world of steady technological advance. Is this view correct? (25)
QUESTIONS ON THE POOR, INFLATION

Poor

1. Explain why if the Old Poor Law in England just transferred income from land owners to the poor in the years before 1834, with no effect on work or investment incentives, then for every £1 saved from the reform, rents should have risen by £1.

2. Explain why if the Old Poor Law caused workers to put in less effort and landlords to invest less in land improvement, then for every £1 saved from the reform, rents should have risen by more than £1.

3. Explain why if the Old Poor Law mainly served to subsidize the labor costs of farmers by taxing all rate payers including tithe owners and house owners then for every £1 saved from the reform, rents should have risen by less than £1.

4. What does empirical evidence suggest the effects of the Old Poor Law were?

Inflation

1. Explain why inflation rates were generally below 2% before the late 20th century.

2. Show that the inflation rate which maximizes the social value of fiat money is \( -r\% \), where \( r \) is the real interest rate.

3. Show how in principal we can measure the usefulness of money as an institution by looking at what happens to real money holdings in a hyperinflation.

4. Explain how governments derive revenue from inflation. What is the size of the revenue in real terms if the nominal interest rate is \( i \) and the stock of money is \( M/P \). Show that this revenue will peak at some inflation rate greater than 0, and that at too high an inflation rate this revenue falls.

5. There were multiple theories as to the cause of the hyperinflation in Germany in 1922-3. Briefly explain:
   (a) The German Theory
   (b) The French Theory
   (c) The “accident” theory.

6. Explain why ending a hyperinflation is in principle very easy. What method was used in Germany in 1923?
There are 100 points for the exam.

**SHORT ANSWER (60 pts)**

1. Being controlled by European empires had several potential benefits for industrialists in poor countries like India or Egypt in the late nineteenth century. Briefly outline three gains from imperialism. (9)

2. (a) Derive that we can measure productivity growth rates in any economy or industry using the formula

   \[ g_A = \delta_r g_r + \delta_w g_w + \delta_s g_s - g_p \]

   where \( \delta_r \) is the share of capital, \( \delta_w \) the share of wages and \( \delta_s \) the share of land rents, and \( r, w, \) and \( s \) their prices, and \( p \) the price of output. (6)

   (b) Suppose all the input prices are growing at 4%, but output prices are growing at 1%. Calculate productivity growth rates. (2)

   (e) Suppose the social return on capital is twice the private return. Will the above formula correctly show productivity growth? If not in what way will the calculation be biased. Explain. (2)

3. (a) What (approximately) was the average age that women first married at in pre-industrial Western Europe? What was the average age in most of the rest of the world in the pre-industrial era? (4)

   (b) What was the average number of surviving children per woman in pre-industrial Western Europe? What was the average number of surviving children per woman in the rest of the world? (4)

   (c) Suppose that in the pre-industrial world a Poor Law was passed, entitling all workers to receive a 20% supplement on their wages form land owners. Calculate the long run effect on wages, birth rates, death rates, and population. (8)
LONG ANSWERS

5. What do we learn from the history of the cotton textile industry about why India is still such a poor country? (20)

6. Explain how the method called growth accounting can be used to analyze growth. What does growth accounting tell us about growth since the Industrial Revolution? (20)

(10 points for each part)
There are 100 points for the exam.

SHORT ANSWER (60 pts)

1. Pair each item from column A with an item in column B. (12)

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Wealth of Nations”</td>
<td>1798</td>
</tr>
<tr>
<td>Water Frame</td>
<td>Kay</td>
</tr>
<tr>
<td>“The Rocket”</td>
<td>1834</td>
</tr>
<tr>
<td>“Kapital”</td>
<td>Stephenson</td>
</tr>
<tr>
<td>New Poor Law</td>
<td>1914</td>
</tr>
<tr>
<td>World War I</td>
<td>Arkwright</td>
</tr>
<tr>
<td>“Principle of Population”</td>
<td>Newcomen</td>
</tr>
<tr>
<td>Flying shuttle</td>
<td>Napoleon</td>
</tr>
<tr>
<td>Atmospheric Engine</td>
<td>1867</td>
</tr>
<tr>
<td>Puddling</td>
<td>Onions</td>
</tr>
<tr>
<td>Crowding out</td>
<td>1349</td>
</tr>
<tr>
<td>Bubonic plague</td>
<td>1776</td>
</tr>
</tbody>
</table>

2. Being controlled by European empires had several potential benefits for industrialists in poor countries like India or Egypt in the late nineteenth century. Briefly outline three gains from imperialism to industrialists. (9)

3. (a) Derive from the fact that the value of inputs in any industry equals the value of output that we can measure productivity growth rates in any economy or industry using the formula

\[ g_A = \gamma_r \cdot g_r + \gamma_w \cdot g_w + \gamma_s \cdot g_s - g_p \]

where \( \gamma_r \) is the share of capital, \( \gamma_w \) the share of wages and \( \gamma_s \) the share of land rents, and \( r, w, \) and \( s \) their prices, and \( p \) the price of output. (6)

(b) Suppose all the input prices are growing at 4%, but output prices are growing at 1%. Calculate productivity growth rates. (2)
(c) Suppose the social return on capital is twice the private return. Will the above formula correctly show productivity growth? If not in what way will the calculation be biased. Explain. (2)

4. (a) What (approximately) was the average age that women first married at in pre-industrial Western Europe? What was the average age in most of the rest of the world in the pre-industrial era? (4)

(b) What was the average number of surviving children per woman in pre-industrial Western Europe? What was the average number of surviving children per woman in the rest of the world? (4)

(c) Suppose that in the pre-industrial world a Poor Law was passed, entitling all workers to receive a 20% supplement on their wages from land owners. Calculate the long run effect on wages, birth rates, death rates, and population. (8)

5. (a) Explain briefly why output per acre and per worker was believed to have more than doubled in British agriculture between 1770 and 1850. (6)

(b) Explain briefly how we know that no such changes can have taken place (4)

(c) What mistaken assumption in part (a) can help explain this contradiction? (3)

**LONG ANSWERS (40 pts)**

6. What do we learn from the history of the cotton textile industry about why India is still such a poor country? (20)

7. Explain under what conditions government debt will reduce income in an economy, and under what conditions it will have no effect. Explain how the British experience in the Industrial Revolution period suggests such debt need not be a problem for the economy. (10 points for each part)
Economics 110B, Spring 1996

FINAL

There are 100 points for the exam.

SHORT ANSWER

1. Things are often not as they seem. Explain briefly which of the following statements are incorrect or misleading and which are true:

(a) Factory owners locked factory gates during work hours to keep thieves out. (2)

(b) The Irish Famine of the 1840s was caused by the failure of the potato crop. (2)

(c) Since women in the seventeenth century in Europe married by age 26 on average, and had no fertility control within marriage, they had many daughters to provide dowries for. (2)

(d) Since life expectancy in Europe in 1800 tended to be about 30, almost no children would ever have grandparents. (2)

(e) A local priest invented one of the most important innovations in spinning cotton in the Industrial Revolution. (2)

(f) Dicken’s novel Oliver Twist describes the position of the poor in workhouses in 1790. (2)

(g) The workhouse diet was deliberately made as monotonous as possible. (2)

(h) Wages in the US textile industry in 1910 were about 14 times those in China. (2)

(i) Male Indian textile workers in 1910 weighed on average about 110 pounds, which explains their low productivity. (2)

(j) Karl Marx predicted in the 1850s that China would be the next industrial giant in the world. (2)

(k) British imperialism in the late nineteenth century impeded the growth of industry in poor countries by taking away tariff protection for their industries. (2)

(l) Britain had higher income per capita than India in 1770 because Britain had a secure political system with stable property rights. (2)
2. Explain briefly three things that British imperialism did in the nineteenth century that seemed to ensure rapid development for India (6)

3. (a) The Factory system emphasized conduct as opposed to output. Explain the distinction. When would we expect each type of measure to be used? (4)

(b) How do we know that the factory system was not designed just to exploit workers? (2)

4 Suppose that in an economy output is growing at -1%, the capital stock is growing at 4%, the labor supply is growing at -2%, and the share of capital, labor and land in national income are respectively 1/4, 1/2, and 1/4. (land is constant)

(a) What is the growth rate of efficiency? (2)

(b) Suppose that wages are falling by 2%, land rents are not changing, and returns on capital are falling by 4% per year. Calculate how output prices are moving, in the light of your answer to part (a) (2)

(you do not need a calculator to answer this question).

**LONG ANSWERS**

4. Explain what happened in the cotton textile industry in the Industrial Revolution. Explain also what these developments suggest about the various theories of what caused the Industrial Revolution. (20)

[Half the points for each part of the answer]

5. Explain how we can use the movement of input and output prices in an industry or economy to estimate productivity growth. What puzzle emerges when this technique is applied to agriculture in Britain in the Industrial Revolution period? (20)

[8 points for the first part of the question, 12 for the second]

6. Explain the Demographic Transition that occurred in Europe in the late nineteenth century. Explain why both the trends in fertility and in mortality are puzzling to historians (20)
There are 100 points for the exam.

**SHORT ANSWER**

1. Things are often not as they seem. Explain briefly which of the following statements are incorrect or misleading and which are true:

   (a) The day of the week when most work was done by workers in pre-industrial Europe was Friday, in preparation for the weekend. (2)

   (b) The Black Death of 1249 reduced the population of England by almost 20%. (2)

   (c) The idea of using rails to move heavy freight was first introduced in Britain in 1825 by Stephenson. (2)

   (d) The population of France fell between 1770 and 1850 because France was the first country to experience fertility control within marriage. (2)

   (e) The building of the Suez canal in the 1890s greatly reduced the distance ships had to travel between South Africa and London. (2)

   (f) Shipping goods by sea cost only about half as much per mile in the nineteenth century as carrying them by rail on land. (2)

   (g) There were no agricultural innovations of any economic significance between 1770 and 1850 in Europe. (2)

   (h) Income per person in the USA is now about 20 times what income per person was in Britain in 1770 on the eve of the Industrial Revolution. (2)

   (i) A woman who married at age 20 in Germany in the seventeenth century would typically have given birth to 8.1 children by the time she reached age 45. (2)

   (j) The Glorious Revolution of 1588-9 saw the replacement of the corrupt Tudor regime by the enlightened Scottish House of Stuart. (2)

   (k) The enclosure movement was the replacement of the open highway by private turnpikes that people had to pay to use. (2)

   (l) Britain had higher income per capita than India in 1770 because Britain had a secure political system with stable property rights. (2)
2. Show on a diagram what long term effects a one time improvement in technology in 1300 would have on the economy. (4)

3. (a) Explain under what conditions increasing returns to scale could impede the industrialization of poor countries. (3)

(b) Rich countries are mainly largely urban and industrialized, while poor countries are rural and agricultural. Why is there this connection? (4)

(c) What was different about the operation of the railway system in poor countries compared to rich ones in 1910? (2)

4. Suppose that in an economy efficiency is growing at 2%, the capital stock is growing at 4%, the labor supply is growing at -2%, and the share of capital, labor and land in national income are respectively 1/4, 1/2, and 1/4. (land is constant)

   (a) What is the growth rate of capital per worker? (1)

   (b) What is the growth rate of output per worker? (2)

   (you do not need a calculator to answer this question).

**LONG ANSWERS**

5. Did British imperial rule hurt or help India develop economically in the years 1856 to 1937? (20)

6. Explain how the method called growth accounting can be used to analyze growth. What does growth accounting tell us about growth since the Industrial Revolution? (20)

   (10 points for each part)

7. Explain what the difference was between the factory system, and its precursor, the workshop system. Explain also the debate about why the factory system emerged. (20)

   (10 points for each part)
SAMPLE QUESTIONS FOR THE FINAL EXAM

1. (a) What was the principle of “less eligibility”? When and where was it first adopted?

(b) What was the “workhouse test”?

(c) Workhouses were in the nineteenth century were deliberately built as large imposing buildings in very visible places. Why?

(d) What famous novel is set in part in the workhouse?

2. In the potato famine of 1846-50 in Ireland the number of calories available per person did not drop by a very large amount. Yet it is estimated that 12-18% of the Irish population died as a result of the famine. How did this happen?

3. (a) What were the basic patterns that occurred in the Demographic Transition in Europe?

(b) What European country has a very unusual demographic history between 1750 and 1950? Does its history help rule out some possible causes of the demographic transition?

(c) What caused the fertility decline in Europe?

(b) What caused the mortality decline?

4. (a) Describe how employees were supervised and rewarded under each of the following systems:

   (i) the Domestic system
   (ii) the Workshop system
   (iii) the Factory system

(b) The Factory system emphasized conduct as opposed to output. Explain the distinction. When would we expect each type of measure to be used?

(c) What market evidence can we use to check whether workers really disliked the factory system?

(d) What is the custom of “St Monday”? Why did it disappear in the mid-nineteenth century?
(e) Explain what was the “rent and charges” system. Why were workers indifferent to the conduct of their workers under this system?

(f) Some writers hold that the factory was an “organizational” innovation, others that it stemmed from “technological” change. Explain the distinction. What is the evidence that it was not an organizational innovation?

(g) Were workers exploited in the factory?

(h) What is the coordination theory of the factory? What is the coercion theory?

(I) What are four simple tests to discriminate between these theories? Which theory fits the data better?

(j) Suppose that workers who talk at work impose a cost on employers of $10 per incident. Suppose also that the probability of detecting someone talking is 0.5 for each incident. In a competitive labor market what will be the fine levied by employers on workers who are caught. Explain.
FINAL

There are 100 points for the exam.

SHORT ANSWER

1. Things are often not as they seem. Explain briefly which of the following statements are incorrect of misleading and which are true:

(a) James Watt invented the steam engine. (2)

(b) Stephenson built the first railroad in 1830. (2)

(c) Medical advances reduced mortality substantially in Europe in the nineteenth century. (2)

(d) Coal was first mined in the Industrial Revolution period on a large scale to fuel the new steam engines. (2)

(e) In the nineteenth century in Britain the poor were imprisoned in workhouses. (2)

(f) Before the Industrial Revolution living standards in Europe were always very low because of the primitive technology. (2)

(g) The water wheel was dramatically improved in the Industrial Revolution period. (2)

(h) Capital accumulation has been the main direct source of increasing incomes per person since the Industrial Revolution. (2)

(i) Ending communal cultivation rules had little effect on agricultural efficiency in Europe. (2)

(j) The French made major improvements in weaving technology in the Industrial Revolution period. (2)

(k) Juliette in Shakespeare’s “Romeo and Juliette” was a typical Italian girl of her time (circa 1600). (2)

(l) Real agricultural land rents per acre doubled in Britain in the period of the Industrial Revolution, so that the productivity of agriculture also doubled. (2)
2. (a) The death rate in Europe began to decline around 1800 and has continued to decline since then. Explain why the decline in the death rate had to be the result of a shift in the death rate schedule and not just a result of higher incomes. (2) 

(b) In the Malthusian economy what is the long run effect of a shift downwards in the death rate schedule? (3)

(c) Why do some historians and demographers think the decline in death rates caused a decline in birth rates in Europe? What are the problems with this view? (3)

3. (a) The Factory system emphasized conduct as opposed to output. Explain the distinction. When would we expect each type of measure to be used? (4)

(b) How do we know that workers really disliked the factory system? (2)

(c) How do we know workers worked harder in the factory than in the workshop? (2)

LONG ANSWERS

4. Explain the technique of growth accounting. What light does it cast on European history since the Industrial Revolution. (20)

5. Why does the experience of the cotton industry in the nineteenth century suggest that the barrier to world industrialization was the labor supply of poor countries? (20)

6. The Potato Famine was the last great famine in Western Europe. What happened and why did economists bear some of the blame? (20)
There are 100 points for the exam.

**SHORT ANSWER**

1. Things are often not as they seem. Explain briefly which of the following statements are incorrect or misleading and which are true:

(a) There were no firms that employed more than 500 workers before the Industrial Revolution. (2)

(b) It cost about twice as much per mile to transport goods by rail as by sea in 1900. (2)

(c) No women in Western Europe married as early as age 16 in 1770. (2)

(d) Without coal there could have been no Industrial Revolution. (2)

(e) By 1850 only 10% of the population in Britain was employed in agriculture. (2)

(f) By 1850 Britain produced one third of all the cotton textiles in the world. (2)

(g) The Glorious Revolution of 1688-9 deposed the Catholic king James II and replaced him by his German cousin George I. (2)

(h) By 1850 mechanization made productivity in British agriculture 3 times that of Russia. (2)

(i) War in the Southern Netherlands in the sixteenth and seventeenth centuries made rates of return decline drastically. (2)

(j) Fertility declined across Europe in the late nineteenth century as more married women began to work outside the home. (2)

(k) As nourishment improved as a consequence of the Industrial Revolution the average heights of people in England rose steadily. (2)

(l) Because of the onset of the Black Death in 1349 death rates in Europe were twice as high in 1400 as in 1300. (2)

(m) No workers under the workshop system would come to work on Mondays. (2)
2. (a) Rank the following countries in terms of industrial output per person in 1910: USA, Britain, Italy, Belgium, China. (2)

(b) Did a lack of domestic markets for industrial goods prevent poor countries in the late nineteenth century from industrializing? (3)

3. Suppose that in an economy output is growing at 6%, the capital stock is growing at 6%, the labor supply is growing at 2%, and the share of capital, labor and land in national income are respectively 1/4, 1/2, and 1/4.

(a) What is the rate of growth of output per worker? (2)

(b) What is the share of the growth of output per worker that is explained by capital accumulation (show your calculations)? (2)

(c) What is the growth rate of efficiency? (2)

(d) Suppose the rate of growth of output prices, and of wages, returns on capital and land rents is 2% in this economy. Is this possible given your answer in (c). Explain. (3)

(you do not need a calculator to answer this question).

**LONG ANSWERS**

4. Explain why living standards in pre-Industrial Europe depended only on fertility and mortality. (20)

5. Explain why there is debate about whether people in Britain in 1850 were any better off as a result of the Industrial Revolution. (20)

6. The Potato Famine was the last great famine in Western Europe. What happened and why did economists bear some of the blame? (20)