This is the final (and the only) examination. It will take 60 minutes.

In order to pass successfully the exam, read the following instructions carefully:

• write legibly, unintelligible handwriting will not be corrected and will receive zero points
• make answers short and to the point – irrelevant material may be penalized
• the exam has 4 pages (including one extra page for notes), make sure you have all pages
• negative points are awarded for wrong answers (only) in part I
• if you have a question, you must ask it publicly and I will answer publicly
• any violation of academic honesty will be punished to the fullest extent possible

I. Multiple choice questions (circle the correct answer) – more than one answer can be correct, points are subtracted for incorrect answers (30 points total, -30 points minimum)

1. (6 points) Magnification effect
   a. holds only in 2x2x2 economy;
   b. means that price of the final goods rises more in relative terms than the price of the factor of production;
   c. holds quite generally – regardless of number of countries in a model;
   d. none of the above is true.

2. (6 points) Differences in endowment in factors of production
   a. cannot explain the prevailing pattern of international trade after WWII;
   b. are a good description of the international trade in the second half of 19th century
      (second industrial revolution);
   c. are at the core of the Hecksher-Ohlin theorem;
   d. none of the above is true.

3. (6 points) The term “economies of scale” or “increasing returns to scale”
   a. refers to a situation in which an increase in the level of output produced implies an increase in the average costs per unit of output.
   b. refers to a situation in which an increase in the level of output produced implies a decrease in the average costs per unit of output.
   c. are typical for Ricardian economy.
   d. are typical for Stiglitz-Dixit economy.

4. (6 points) Compute optimal tariff for a good M in a big country A if you know foreign excess demand elasticity 3,0.
   a. 50 %
   b. 40 %
   c. 33 %
   d. none of the above is correct
6. **(6 points)** Think about a model of reciprocal dumping. With the steady increase of transportation costs
   a. the net welfare is getting monotonically smaller as transportation costs rise
   b. the international trade will eventually disappear
   c. prices in respective domestic markets do not change and are the same as in the autarky monopoly situation
   d. both duopolists earn same profits that are smaller than profits as monopolists in the autarky

II. True, False or Uncertain? Explain in space provided! (30 points total, 0 points minimum)

1. **(6 points)** In a Krugman model, the impact of a rise in fixed costs (f) results in the rise of the size of the firm (measured by volume of its production of a variety).

2. **(6 points)** Different evolution of unemployment rates in Europe and the USA can be explained by the Samuelson-Stopler theorem.

3. **(6 points)** You are presented with data of Chinese Balassa indices for various groups of goods. The group of reference countries consists of world trade flows.

<table>
<thead>
<tr>
<th>Product label</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Products of animal origin</td>
<td>4,424</td>
<td>3,581</td>
<td>3,122</td>
<td>3,139</td>
<td>2,678</td>
<td>2,318</td>
<td>2,054</td>
<td>2,082</td>
</tr>
<tr>
<td>Cereals</td>
<td>0,691</td>
<td>0,901</td>
<td>1,137</td>
<td>0,255</td>
<td>0,432</td>
<td>0,258</td>
<td>0,307</td>
<td>0,072</td>
</tr>
<tr>
<td>Beverages, spirits and vinegar</td>
<td>0,355</td>
<td>0,286</td>
<td>0,217</td>
<td>0,207</td>
<td>0,164</td>
<td>0,199</td>
<td>0,116</td>
<td>0,107</td>
</tr>
<tr>
<td>Pharmaceutical products</td>
<td>0,144</td>
<td>0,104</td>
<td>0,086</td>
<td>0,075</td>
<td>0,074</td>
<td>0,066</td>
<td>0,068</td>
<td>0,081</td>
</tr>
<tr>
<td>Fertilizers</td>
<td>0,587</td>
<td>0,445</td>
<td>0,719</td>
<td>0,866</td>
<td>0,487</td>
<td>0,500</td>
<td>1,007</td>
<td>0,664</td>
</tr>
<tr>
<td>Plastics and articles thereof</td>
<td>0,809</td>
<td>0,781</td>
<td>0,713</td>
<td>0,684</td>
<td>0,712</td>
<td>0,717</td>
<td>0,674</td>
<td>0,692</td>
</tr>
<tr>
<td>Silk</td>
<td>8,446</td>
<td>7,248</td>
<td>6,158</td>
<td>5,792</td>
<td>5,653</td>
<td>5,271</td>
<td>4,787</td>
<td>4,529</td>
</tr>
<tr>
<td>Umbrellas, walking-sticks, etc.</td>
<td>10,269</td>
<td>9,528</td>
<td>8,535</td>
<td>8,342</td>
<td>8,000</td>
<td>7,755</td>
<td>7,360</td>
<td>7,423</td>
</tr>
<tr>
<td>Iron and steel</td>
<td>0,454</td>
<td>0,362</td>
<td>0,357</td>
<td>0,705</td>
<td>0,724</td>
<td>0,947</td>
<td>1,063</td>
<td>1,146</td>
</tr>
<tr>
<td>Electrical, electronic equipment</td>
<td>1,344</td>
<td>1,427</td>
<td>1,483</td>
<td>1,591</td>
<td>1,675</td>
<td>1,735</td>
<td>1,884</td>
<td>1,990</td>
</tr>
<tr>
<td>Vehicles other than railway, tramway</td>
<td>0,196</td>
<td>0,185</td>
<td>0,193</td>
<td>0,217</td>
<td>0,248</td>
<td>0,276</td>
<td>0,305</td>
<td>0,354</td>
</tr>
<tr>
<td>Ships, boats</td>
<td>0,970</td>
<td>0,798</td>
<td>0,929</td>
<td>0,743</td>
<td>0,893</td>
<td>1,111</td>
<td>1,288</td>
<td>1,521</td>
</tr>
<tr>
<td>Toys, games, sports requisites</td>
<td>4,764</td>
<td>4,843</td>
<td>4,516</td>
<td>4,252</td>
<td>4,213</td>
<td>4,081</td>
<td>3,657</td>
<td>3,739</td>
</tr>
</tbody>
</table>
The data support the notion that China is moving to the production of more sophisticated goods (i.e. it is gaining comparative advantage in more sophisticated goods).

4. (6 points) The following picture shows that England and Netherlands became the most efficient countries in agriculture in Europe in 18th century. Depicted is the development of the output per worker relative to the level of the output per worker in 1500 in England. At the same time the cereal acreage went down in Britain and Britain started to specialize in industrial production.

![Image of graph depicting the development of output per worker in England and other countries over time.](image)

The graph and development that is described above is consistent with the predictions comparative advantage theory.

5. (6 points) Britain’s term of trade are shown in the following graph.

![Image of graph showing Britain’s term of trade over time.](image)

It suggests that Britons were able to command higher prices for their production sold abroad, i.e. that Britain needed to export less in order to import the same amount of goods. This development is based on its first-comer advantage during the first Industrial revolution.
III. Write a detailed answer (40 points total, 0 points minimum)

1. (20 points) C and A both produce fireworks. Demand and supply structure in both economies is given by the Dixit-Stiglitz model. There is a love-of variety effect for all consumers. Fireworks market in C is much larger than in A. Marginal labour input requirement is one and fixed labour input is 2.5. C employment in firework industry is 10 million people. A employment in firework industry is 10 thousand people.
   a) How many varieties will be supplied to the A and C markets in the autarky equilibrium.
   b) How many varieties will be supplied to the A and C markets in the free trade equilibrium.
   c) What is the domestic market share of A’s producers if international trade is allowed.

2. (20 points) Describe and explain Stolper-Samuelson theorem and give a graphical prove in the w,r space.