Instructions:

Please read all questions very carefully.

Exam Rules (in case you did not look at the Review Sheet):

1. Please bring a calculator with you to the exam (well, I guess it’s too late now).

2. Use pen only, except for graphs, where pencil is ok. Think about your answer before you write it down.

3. All answers must appear in the spaces provided. Answers written outside of the spaces will not be read or graded, except in one circumstance: if you cross out your original answer and don’t have any space to write your new answer, then you may write your answer on the back of the page.

4. Please make every effort to write legibly. If I can’t make out what you wrote, you won’t get credit for it (not even if you stop by and decipher it for me later on).

5. When a follow-up question is given after a multiple choice question, you must answer the follow-up correctly to get any credit for answering the question.

6. When a space is provided that indicates that a calculation is required, you must show the correct calculation in the space in order to get any credit for answering the question.

7. For every multiple-choice question, please circle only the best answer.
Questions 1 through 5 make use of following information:

<table>
<thead>
<tr>
<th></th>
<th>Home</th>
<th>Foreign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units of labor per bottle of Beer</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Units of labor per Pizza</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Number of units of available Labor</td>
<td>3000</td>
<td>1000</td>
</tr>
</tbody>
</table>

1. (2 points) Which country has the comparative advantage in producing Beer? ______________

2. (2 points) The graphs below show the countries’ PPFs (ignore the points marked there for now). Which Graph shows Home? ______________

![Graph 1](Pizza_Beer.png)

![Graph 2](Pizza_Beer.png)

3. (3 points) The next graph shows the RS and RD curves for Pizza (in terms of Beer). Please fill in the empty boxes with numbers, based of the information in the Table.

![Graph](Pizza_Beer.png)

4. (4 points) Based on these RS and RD curves drawn in the preceding graph, which of the points labeled in the PPFs shown in Graph 1 and Graph 2 could be production points, when the economies open up to trade (use the letters)? Point ______ and Point ______.

5. (2 points) In this example, which country gains the most from trade? ________________
6. (4 points) The following Table gives information about labor productivity in two Countries, A and B, that produce and consume automobile Tires and Crackers, using (amazingly) only Labor as an input to production.

<table>
<thead>
<tr>
<th>Relative productivity in Country A, in this industry (MPL^A/MPL^B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tires</td>
</tr>
<tr>
<td>Crackers</td>
</tr>
</tbody>
</table>

a. According to the Ricardian model, which country exports Crackers? ________________
b. Suppose the autarky price of a Tire is $100.00 in Country A. The autarky price of a box of crackers equals $2.50. In an autarky equilibrium, what is the opportunity cost of Tires in terms of Crackers in Country A? ________________ A calculation is required for part b, please use this space:

7. (10 total points) Home produce Shirts and Soup, using Capital and Labor as factors of production. Labor is mobile between industries, but Capital is industry specific. In autarky, Home’s dollar wage is equal to $10.00 per hour.

Home decides to open up to trade with the rest of the world. One result is that the price of Soup rises by 15% while the price of Shirts rises by 8%.

a. (3 points) Which of the following could be the new equilibrium wage in Home after trade begins?
   i. $10.80
   ii. $11.20
   iii. $11.50
   iv. $14.00
   v. Any of the above could be the new equilibrium wage

   Why is the answer you chose correct?

b. (3 points) As a result of trade, the marginal product of Labor
   i. falls in Home’s Soup industry
   ii. rises in both the Soup and the Shirt industry in Home
   iii. falls in both the Soup and the Shirt industry in Home
   iv. falls in Home’s Shirt industry

   Why is the answer you chose correct?
c. (2 points) Owners of Capital in the Shirt industry

i. lose from trade regardless of what they purchase.
ii. gain from trade regardless of what they purchase.
iii. would gain from trade if they purchase only Shirts.
iv. would gain from trade if they purchase only Soup.

d. (2 points) Workers in the Soup industry

i. lose from trade regardless of what they purchase.
ii. gain from trade regardless of what they purchase.
iii. would gain from trade if they purchase only Shirts.
iv. would gain from trade if they purchase only Soup.

8. (10 points) Draw a carefully-labeled graph in the space below to illustrate what happens to the real incomes of owners of Capital in the Soup industry after Home opens up to trade.

9. (2 points) According to the Standard Trade Model, a country is likely to import a good if

i. the country is very large.
ii. production of the good used the country’s scarce factor intensively.
iii. the country had a very high relative demand for the good compared to the rest of the world.
iv. i. or ii.
v. ii. or iii.
vi. i, ii, or iii.
10. (7 total points) Suppose you have the following information about two countries, which have identical tastes and have access to the same technologies for producing Manufactures and Agricultural products.

<table>
<thead>
<tr>
<th></th>
<th>Home</th>
<th>Foreign</th>
</tr>
</thead>
<tbody>
<tr>
<td>capital used in agriculture</td>
<td>500</td>
<td>1000</td>
</tr>
<tr>
<td>total supply of capital</td>
<td>1000</td>
<td>2000</td>
</tr>
<tr>
<td>labor used in agriculture</td>
<td>250</td>
<td>900</td>
</tr>
<tr>
<td>labor used in manufacturing</td>
<td>500</td>
<td>1200</td>
</tr>
</tbody>
</table>

a. (2 points) _________________________________ is capital abundant. Calculation required, please use this space:

b. (2 points) _________________________________ is labor intensive. Calculation required, please use this space:

c. (3 points) Reforms in Foreign’s restrictive immigration policy lead to an influx of immigrants to the country. According to economic theory, could Foreign be a candidate for immiserizing growth? Why or why not?

11. (8 points) The graphs below show the PPF and an indifference curve for two countries that produce Eggs and Computers. Please complete the graphs by showing that there is a world price at which both countries gain from trade. To save yourselves time, please do not label imports and exports. However, you do have to show that each country gains from trade.
12. (2 points) Which of the following is an accurate statement of the Rybczynski Theorem?

i. A country will tend to export the good that uses its abundant factor as an input.
ii. When countries open up to trade, the abundant factor gains purchasing power, while the scarce factor loses purchasing power.
iii. A country will tend to export the good that abundantly uses the country’s intensive factor.
iv. At a given world price, growth biased towards an industry will increase output in that industry and reduce output in the other industry.
v. None of the statements above is an accurate statement of the Rybczynski Theorem.

13. (2 points) Which of the following is an accurate statement of the Heckscher-Ohlin Theorem?

i. A country will tend to export the good that uses its abundant factor as an input.
ii. When countries open up to trade, the abundant factor gains purchasing power, while the scarce factor loses purchasing power.
iii. A country will tend to export the good that abundantly uses the country’s intensive factor.
iv. At a given world price, growth biased towards an industry will increase output in that industry and reduce output in the other industry.
v. None of the statements above is an accurate statement of the Heckscher-Ohlin Theorem.

14. (3 points) In autarky, in a Heckscher-Ohlin world, the ratio of the wage to the return to land is higher in Home than it is in Foreign. According to economic theory, if Home and Foreign begin to trade, then

i. Home will export land-intensive goods and the return to land will fall at Home.
ii. Home will export labor-intensive goods and the Foreign wage will fall.
iii. Home will export land-intensive goods and the Home wage will fall.
iv. Home will export labor-intensive goods and the Home wage will rise. v. Home will not be willing to trade with Foreign.

Why is the answer you chose correct?

15. (2 points) A country produces Manufactures and Agricultural products, using labor and land as inputs, with diminishing returns to both inputs. If the country produces more Manufactures,

i. The marginal product of labor falls in Agriculture. The opportunity cost of Manufactures rises.
ii. The marginal product of labor falls in Agriculture. The opportunity cost of Manufactures falls.
iii. The marginal product of labor rises in Agriculture. The opportunity cost of Manufactures rises.
iv. It is impossible to determine the answer to this question without knowing anything about the country’s trading partners.
16. (4 points) It takes 5 units of labor and 2 units of capital to produce a pair of shoes in Country Z. The wage equals $5 per hour while the return to capital equals $15 per unit. The market for shoes is perfectly competitive, and the price of a pair of shoes is $55.00

a. When the country begins to trade, the price of a pair of shoes rises by 10%. The return to capital falls by 2%. According to economic theory, what happens to the wage?

i. It rises by 10%.
ii. It changes by a percentage amount between negative 2% and positive 10%.
iii. It rises by more than 10%.
iv. It rises by less than 10%.

b. Please identify (by name) the International Trade theorem that you used to answer the previous question. ________________________________________________________

17. (6 points) Please define the Leontief paradox and explain briefly how differences in technology can explain this paradox.

18. (2 points) The formula for the index of intra-industry trade in an industry is

i. \( IIT = 1 - \frac{|EX - IM|}{EX + IM} \)
ii. \( IIT = 1 + \frac{|EX - IM|}{EX + IM} \)
iii. \( IIT = 1 - \frac{|EX + IM|}{EX - IM} \)
iv. \( IIT = 1 - \frac{(EX - IM)}{EX + IM} \)

19. (2 points) When there are internal economies of scale, the average cost per variety produced with an increase in the number of varieties and decreases with an increase in the output of any variety.

i. rises, rises
ii. rises, falls.
iii. falls, falls.
iv. falls, rises
20. (3 points) There are two countries, Country $A$ and Country $B$. The countries produce two goods, Manufactures and Food, using only Capital and Labor as inputs. Manufacturing is Capital-intensive. The countries have the same technologies for producing output, and they have the same preferences for Manufactures and Food. The countries are also engaged in completely free trade. Country $A$ is Capital abundant.

Which of the following would cause an increase in the world price of Food in terms of Manufactures (i.e., in $P_F/P_M$)?

iii. A transfer from Country $A$ to Country $B$.

Why is the answer you chose correct?

21. (2 points) In the presence of “taste bias” a transfer of income from a donor country to a recipient country

i. raises the world price of the recipient’s import goods (in terms of its export goods)
ii. has no effect on the terms of trade.
iii. raises the world price of the donor’s export goods (in terms of its imports)
iv. lowers the world price of the donor’s export goods (in terms of its imports)

22. (2 points) When there are internal economies of scale in production, the price per variety falls with trade. Which of the following is the most accurate inference to make?

i. the total number of varieties produced worldwide is smaller than in autarky
ii. aggregate output per firm has risen.
iii. Every country produces more varieties than it did in autarky.
iv. Every country consumes fewer varieties than it did in autarky.

23. (2 points) External economies of scale can be the result of

i. labor pooling
ii. fixed costs
iii. knowledge spillovers
iv. i, ii, or iii
v. i. or ii.
vi. i. or iii.

24. (2 points) Intra-industry trade that is based on internal economies of scale

i. tends to benefit a country’s abundant factor and to hurt its scarce factor.
ii. can make a country worse off if the country does not get the head start in the industry.
iii. is often bad for a country in the short run but beneficial in the long run.
iv. does not have adverse consequences for income distribution like North-South trade does.
25. (6 points) The United States has gotten a head start in producing scientific word processing software, and now supplies the world market. There are external economies of scale in the software industry. Investors in India believe India has the natural comparative advantage in software production, and insist that India is worse off under free trade than under autarky. In the space below, please draw a very carefully-labeled graph that illustrates a situation in which the Indian investors are only half correct: although India has a natural comparative advantage in producing this software, India nevertheless is better off importing software from the country that got the head start in the industry (United States) than in autarky.

26. (2 points) Employment in the textile industry has fallen by 300,000 since the year 2000. Please list two reasons besides trade that could explain this decline.
______________________________________________________________________________
______________________________________________________________________________

27. (2 points) Of the following types of analysis, which is the least inaccurate (most reliable) way of determining the effect of international trade on U.S. jobs?

i. tracking employment changes over time
ii. surveys of labor union leaders
iii. factor price equalization
iv. factor content studies

28. (2 points) Which of the following is a reason why factor content studies might overstate how many jobs are lost in the American textile industry due to trade with the rest of the world?

i. China might use more labor-intensive technologies for producing textiles than the U.S.
ii. Chinese-made textiles are cheaper than US-made ones, so American consumers buy more.
iii. i. And ii.
iv. None of the above