ECON2610 - EXAM autumn 2019

1

This exercise (1a, 1b and 1c) counts 20 % of the exam.

There are two main models used to explain the consequence of trade, when trade is based on comparative advantage. These are the Ricardian model and the Heckscher-Ohlin model (Ricardo-Viner is the short term version of Heckscher-Ohlin).

(a)

Explain, in words, what determine comparative advantage in the Heckscher-Ohlin model, and how this differ from the Ricardian model.

Fill in your answer here

(b)

In the Ricardian model, trade leads to full specialization. This is not the case in the Heckscher-Ohlin model. Explain, in words, why trade does not lead to *full* specialization in the Heckscher-Ohlin model.

Fill in your answer here

(c) Explain, in words, why countries gain from trade when specializing according their comparative advantage.

Fill in your answer here

2

This exercise (2a and 2b) counts 25 % of the exam.

Assume that a country produces wine and cars using labor and capital. Also assume that the country is relatively abundantly equipped with labor and that wine production uses labor intensively. Furthermore, both factors are assumed to be mobile (we are in the long term).

(a) Explain and illustrate (using one figure) the consequence of going from autarky to trade, on production, consumption and welfare.

Fill in your answer here

(b) Explain, in words, the long run consequence of going from autarky to trade on the distribution of income between the two factors of production.

Fill in your answer here

3

This exercise (3a and 3b) counts 30 % of the exam.

In addition to comparative advantage, economies of scale can explain patterns of international trade.

(a) Explain, in words, the difference between external and internal economies of scale. Provide two examples of each.

Fill in your answer here

(b) Suppose the market for phones in the US and in China is characterized by monopolistic competition (internal economies of scale). The market can be illustrated by two curves, with the price/cost on the vertical axis and the number of firms on the horizontal axis.

- PP curve: Expresses the correlation between price (P) and number of firms (N) in the market and is given by: $P = C + (970/N)$.

- CC curve: Expresses the relationship between average costs (AC) and number of firms in the market (N) and is given by: $AC = C + N(F/S)$.

C is marginal cost, N is the number of firms in the market, S is the size of the market, and F is the firm's fixed costs.

For both countries, the cost of establishing a phone producing firm is 800 million and the marginal cost is a constant amount of 1000 per phone. The size of the market in the US is 330 million people, while the size of the market in China is 1 387 million.

i.   Calculate and illustrate the autarky equilibrium price and number of firms in each country.

ii.   We then open for free trade between the two countries. Calculate and illustrate the equilibrium price and number of firms in the world market.

iii.   Explain, in words, the impact of trade on prices, average costs, number of firms and the welfare of consumers?

Fill in your answer here

4

This exercise (4a, 4b, 4c and 4d) counts 25 % of the exam.

Suppose that a fishing firm is located next to a producer of agricultural products. The agricultural firm uses chemicals (pesticides) to protect its crops. These chemicals increase the production cost of the fishery because it reduces the number of fish available.

Let the number of fish produced be measured by F and the number of agricultural products be measured by A. The cost functions of the two firms are:

$$c_A(A) = \frac{A^2}{250}$$

$$c_F(F) = \frac{F^2}{200} + A$$

The price of agricultural products is $4 and the price of fish is $10.

(a) Explain, in words, what is meant by an externality and why this is a form of market failure.

Fill in your answer here

(b) Assume first that the two firms operate independently. Calculate the profit-maximizing output of agricultural products and fish.

Fill in your answer here

(c) Assume now that the two firms merged. Calculate the profit-maximizing output of both goods for the merged firm. Comment on how this differs from the results in 4b.

Fill in your answer here

(d) If the firms stayed separate, calculate how much agricultural products have to be taxed to ensure that the socially optimal output is produced.

Fill in your answer here