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Model B

Introduction to Microeconomics
1104F
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February 6th, 2020
First Midterm Examination

Name: _____ **Student Number: _____**

Instructions

- There are 5 exercises. The total number of points of this exam is 100.
- You need to answer the questions or exercises on the exam sheets. **Do not separate the sheets of the exam.** You have some extra sheets at the end of the exam to use as a draft (I will not check or correct these draft sheets). No extra paper will be provided.
- You can use non-programmable calculators. It is strictly forbidden to invoke programmed statistical functions on the calculator or any other wireless device.
- You can use pencil for the calculations and the explanations, but the main answer should be in ball pen.
- There are different versions of the exam, so focus on your exam!!!

Good luck.

Exercise 1 (10%): Fill up the blank with the most suitable economic concept learnt in this course:

1. A point on the PPF is attainable and efficient.
2. correlation: a consistently-observed relationship between two events.
3. Positive statement: a statement that makes a factual claim about how the world works.
4. Direct cost: expenses an individual incurs directly to buy a good or service.
5. Trade-off: each of all the alternative options given up when making a decision.

10 marks: 2 points each, in 1. 1 point each

Exercise 2 (30%): There are two countries, country A and country B, which have the following characteristics:

Country A:
- Produces only two goods: cars and computers
- The opportunity cost of producing cars is 5
- The total amount of computers produced per month by the 10 million workers in the country is 100 million (when no car is produced)

Country B:
- Produces only two goods: cars and computers
- Each worker is able to produce 8 computers per month (when no car is produced)
- Each worker is able to produce 2 cars per month (when no computer is produced)
- There are 10 million workers in the country

a. Which of the two countries has an absolute advantage in computers production? Which of the two countries has an absolute advantage in cars production? Explain and justify briefly your answer.

10 marks

A country has an absolute advantage in the production of a good, when given the same resources then can produce more of the good.

Country A: 10 computers per worker, 2 cars per worker…or 100M computer and 20M cars in total.
Country B: 8 computers per worker, 2 cars per worker or 80M computer and 20M cars in total

The 2 cars of country A is coming from: 100/x=5 Opportunity cost of cars. So x is equal 20M in total, 2 per worker.

Country A has an absolute advantage in the production of computers. Each worker produces 10 computers, while in country B only 8. So 10>8 per worker (or 100M>80M in total)

Non of the countries has an absolute advantage in the production of cars, because in each country each worker can produce the same number of cars, 2 cars (or 20M in total).

b. Which of the two countries has a comparative advantage in computers production? Which of the two countries has a comparative advantage in cars production? Explain and justify briefly your answer.

10 marks

A country has a comparative advantage in the production of one good if it has the lowest opportunity cost.

Country B has a comparative advantage in cars: Opportunity cost of cars for country B is 4, for country A is 5. 4<5.

Country A has a comparative advantage in computers: Opportunity cost of computers for country A is 1/5, for country B is 1/4. 1/4 >1/5.

c. Imagine that initially country A produces 40M of computers and 10M of cars, while country B produces 50M of computers and 10M of cars. What is going to happen if these countries decide to specialize and trade with each other? How are they going to do it? Explain your answer and show it numerically. Explain your answer and show it numerically.

If they specialize and trade, there are going to be gains in terms of an increase in the production of one of the goods or two of them. In this case

10 marks

Country B specializes in the good in which it has comparative advantage: cars
Country A specializes in the good in which it has comparative advantage: computers.

Without specialization

	Cars B	Computers B	Cars A	Computers A	Total Cars	Total Computers
Without Specialization	10M	40M	10M	50M	20M	90M
With Specialization	20M	0	0	100M	20M	100M

The gains of specialization and trade is that now there is the same number of cars, but 10M more of computers. So, both countries can end up consuming more computers. How many will depend on their preferences.

Exercise 3 (15%): Sven wants to buy a Pegasus x300 bike. He has been looking online and he has found two good offers for this model of bike:

1. The first bike costs $800 and it is brand new.
2. The second bike costs $400 but some repairs are needed. After fixing the bike it will be as good as a brand-new bike. The repairs will take a week (more or less), but their cost is unknown. If the repairs are not done, the bike can not be used.

a. Define the concept of "sunk cost".

Past costs that are not taking into account when taking economic decisions. 2.5 marks

b. Explain if the cost of the repairs of the second bike can be considered a sunk cost or not. Justify your answer.

No, since they haven't taken place yet. 2.5 marks

c. Explain how a rational individual would take the decision of which of the two bikes to buy. What is Sven's final decision, to buy the first or the second bike? Justify or/and explain your answer. Do not forget to use the economic concepts that we have learnt in this course.

10 marks

Sven will choose the option with the highest net benefit (or lower opportunity cost). Or what is the same Comparing marginal cost with marginal benefit of the two options.

Option 1: Benefits: satisfaction of having a new bike Pegasus x300 right away
Cost: $800.

Option 2 with repairs: Benefits: satisfaction of having a new bike Pegasus x300 waiting a week
Cost: $400+ cost of the repairs+ opportunity cost of the time that the bike can not be used

Option 2 without repairs: Benefits without repairs: satisfaction of having a useless bike
Cost without repairs: $400

Sven will choose the option with the highest net benefit. Assuming that he wants the bike to work, it depends on the cost of the repairs and the opportunity cost of the time without bike. If it more than $400 he will prefer option 1, if it is less than $400, he will prefer option 2.

Exercise 4 (15%): The following equations represent the demand and supply curves for ball pens.

$$P = 5-(Q/3)$$
$$P = (Q+15)/12$$

a. Decide which of the two previous equations represents the supply curve and which one the demand curve. Find (and show) the demand schedule and the supply schedule for the following prices (in dollars): 0, 1, 2, 3, 4 and 5. Justify and/or explain your answer.

p	QD	QS
0	15	-15
1	12	-3
2	9	9
3	6	21
4	3	33
5	0	45

5 marks

b. If the market price is $4. How many ball pens are going to be sold in this market? Is the market in equilibrium? Explain your answer.

If the price is $4, there is an excess of supply (surplus). The quantity sold in the market is 3, since from the 33 ball pens offered at price 4, only 3 are sold.

5 marks

c. What are the equilibrium price and equilibrium quantity in the market of ball pens (which is a perfectly competitive market)? Explain (or show) how you have obtained your answers.

5 marks

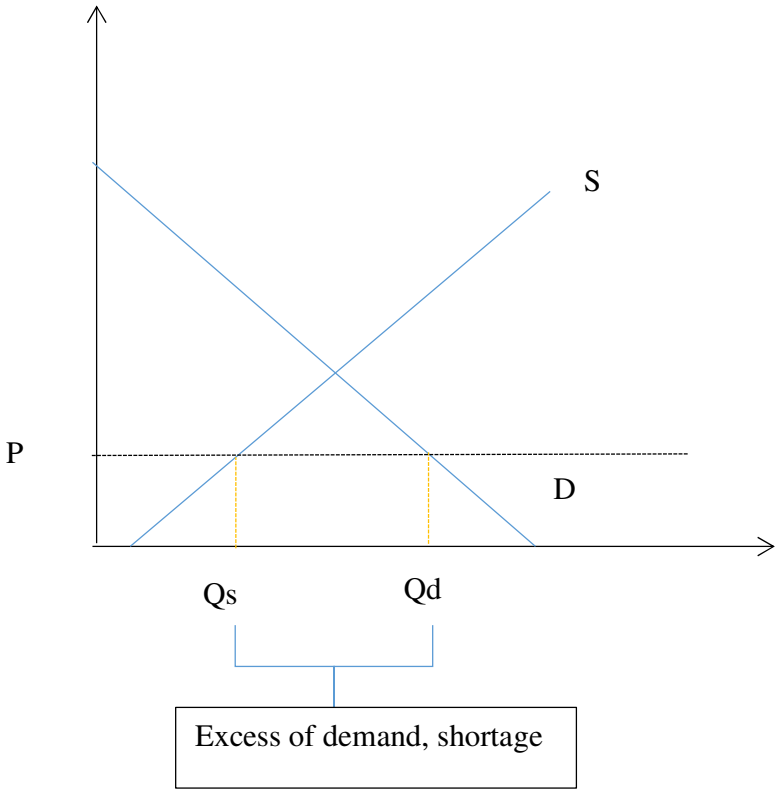
Equilibirum: Qd= Qs

Just looking at the demand schedule or supply schedule you can see this happen with the price is $2.
So, equilibrium price is $2, equilibrium quantity is 9.

To solve the equation system or find the equilibrium graphically were also accepted.

Exercise 5 (30%): Market analysis.

a. Sketch a graph of a perfectly competitive market with excess of demand. Do not forget to show in the graph the price, the quantity demanded, the quantity supplied and the shortage.



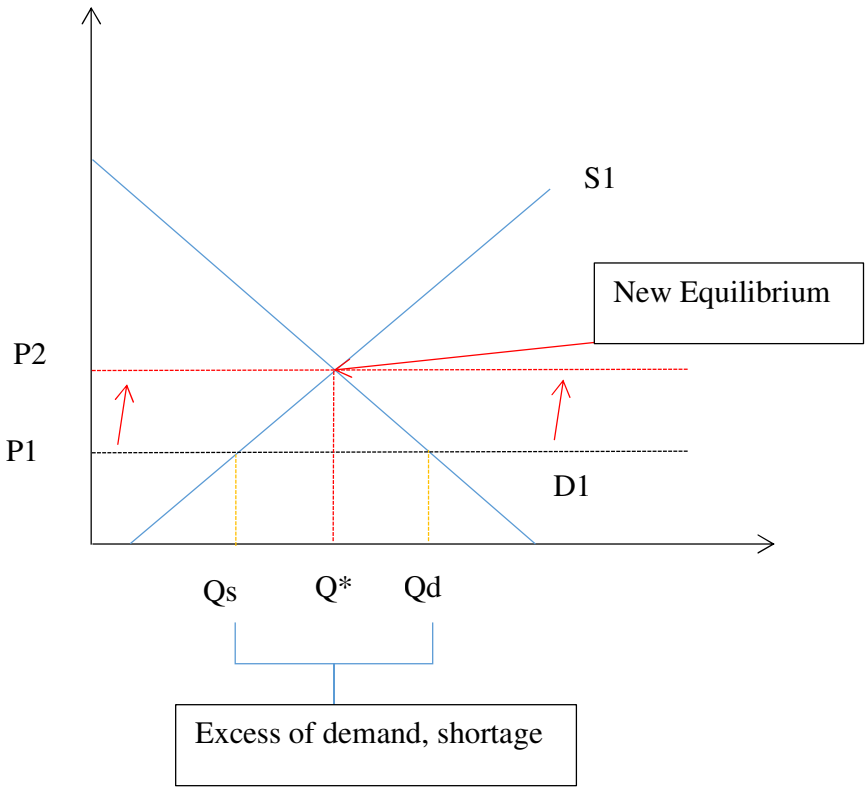
20 marks

b. Imagine that after some changes in this market, the market is in equilibrium. Explain and show graphically two possible changes (a graph for each change) that might explain the transition from a market with excess of demand to a market in equilibrium. Show in the graph the transition.

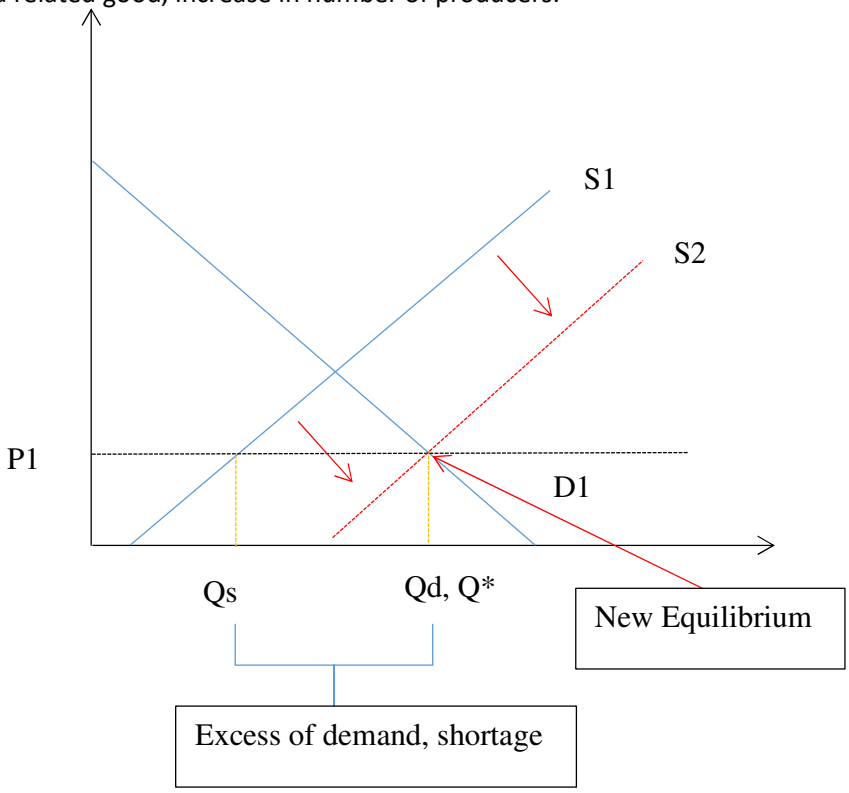
10 marks

I give 3 examples, but only two were required.

An increase in the market price will bring the market from excess of demand to equilibrium. Brings the market to an equilibrium, with market price P2 and equilibrium quantity Q2



A shift of the supply to the right, increase of the supply curve for a non-price determinant change with a positive influence. For example reduction of price of inputs, better technology, change in expectations, increase of price of a related good, increase in number of producers.



A shift of the demand to the left, decrease of the demand curve for a non-price determinant change with a negative influence. For example, changes in preferences that make people to buy more ballpens, decrease in the price of a substitute, or increase in price of a complement, less income, change in expectations for example decrease in price next year, or less buyers for decrease in population.