Microeconomics - S3

Final exam, session 1 – December 2019

Note: The total number of points is 200. The final mark will be determined by dividing your exam mark by 10 in order to obtain a grade on the 0-20 scale. The use of a scientific calculator is prohibited.

Course questions (70 points)

Please answer each of the course questions in 15 lines maximum. Anything beyond 15 lines will not be taken into account.

1. (30 points) For each of these two pricing strategies, explain which category of price discrimination it belongs to and why :

   a) Audio and video streaming services (Tidal, etc.) offer students a reduced subscription fee.
   b) Audio and video streaming services (Qobuz , RMCSport, etc.) offer both a monthly subscription fee that can be canceled at any time and another annual subscription fee less than 12 times the monthly fee.

Which of these two strategies requires more information for the company offering the streaming services? Focusing on one of these two strategies, explain if we can determine the effect (positive / negative / ambiguous) on the surplus of the company as well as that of consumers compared to uniform pricing (that is, no price discrimination).

2. (28 points) Consider an oligopoly. Explain the differences (in terms of prices, quantities and profits) between a situation of Cournot competition and one where both companies are colluding. Represent in a graph, with Q1 and Q2 on the vertical and horizontal axes, these different situations. Which point is a Nash equilibrium and why?

3. (12 points) What are the differences and similarities between Bertrand-style competition (in an oligopolistic situation) and pure and perfect competition? Assume that in both cases companies have the same cost functions and produce a homogeneous good.

Questions about Jean Tirole's book *Economics for the Common Good* (50 points)

Answer **only one** of the following two questions (maximum 20 lines):

1.   What is the use of competition? Illustrate at least two of the reasons described in the book by Jean Tirole to explain why competition can be useful to society.

2.   What are the pricing rules that apply to regulated companies? To what extent do these tariffs provide for users to cover the fixed and variable costs of the services? Explain based on the discussion provided in Jean Tirole's book on the theoretical and practical issues of pricing regulated services.

Exercise 1 (40 points)

In the market for a good, the demand function is given by $Q_d(p) = 24 - p$ and the supply function by $Q_s(p) = 2p - 6$.

1.   (4 points) What are the values of equilibrium prices and quantities?

2.   (6 points) How much is the consumer surplus and the producer surplus?

3.   (2 points) We now assume that the public authorities impose a unit tax of 3. Show that the supply function (that is, quantity as a function of price), all taxes included, is $Q^t_s(p) = 2p - 12$.

4.   (9 points) What are the new equilibrium price and the new equilibrium quantity?

5.   (9 points) How much are the consumer surplus, the producer surplus and the amount of tax collected?

6.   (6 points) Is there a deadweight loss? Explain why and if so, calculate it.

7.   (4 points) Who bears the largest share of the tax, consumers or producers? Explain why.

Exercise 2 (60 points)

The UGC Ciné Cité has a local monopoly in Cergy-le-Haut. Imagine that its marginal cost of production is €1 per seat and that it has fixed costs of €1000 per day. The daily demand for cinema visits in Cergy is given by $Q(p) = 3000 - 200p$, where p is the price of a cinema seat.

1.   (4 points) Write down the total daily cost function.
2.   (8 points) What are the daily prices and quantity at equilibrium of the monopoly?
3.   (4 points) What is the daily profit of cinema?
4.   (6 points) Suppose that a new cinema is founded with the same production costs and that we are dealing with a competition in quantity à la Cournot. Write down the reaction functions.
5.   (10 points) What are the new equilibrium prices, quantities and profits?
6.   (5 points) If the 2 cinemas decide to form a cartel / enter into collusion, what will be the equilibrium prices and equilibrium quantities and the profit of each of the cinemas?
7.   (8 points) Let's finally imagine that the UGC Ciné Cité remains in a local monopoly situation and that a market study allows it to estimate that total demand is shared between student demand with $Q_s(p) = 1000 - 100p$ and the demand from retirees with $Q_r(p) = 2000 - 100p$. What will be the equilibrium prices and quantities if the cinema engages in third-degree price discrimination?
8.   (8 points) Calculate the daily profit of the cinema and compare it to that of question 2. Does your result make sense? Why?
9.   (7 points) Which group of consumers pays the highest price? Why does it make sense? Verify by calculation.