ECON3820/4820 - Spring 2022

Question 1 – short essays (75 percent weight)

Write about one page on each question.

a) Consider a game where two firms sell perfect substitutes and make sequential moves. I.e., firm 1 first makes a decision, and then firm 2 makes a decision. Explain whether there is a first-mover or second-mover advantage in this game, and whether it depends on the two firms competing in quantities or prices.

b) During the course, we have discussed the so-called Hotelling (or linear city) model, in which two firms compete in prices and the goods are horizontally differentiated, which is illustrated by them being located at different points along a line. In this model, our predictions as to whether the firms would end up locating close to, or far from, one another, depended on whether the prices were fixed in advance or something the firms could choose. Explain in your own words the difference between the two cases and what is going on here.

c) The competition authorities often employ a screening tool called upward pricing pressure (UPP) in order to assess whether a horizontal merger between two firms might cause social harm. Technically, we say that there is upward pricing pressure if $e_1 < (p_2 - c_2)DR_{12}$, where e_1 measures the reduction in marginal costs to firm 1 when firm 1 and firm 2 merges, p_2 and c_2 represent the pre-merger price and marginal cost for firm 2, while DR_{12} represents the diversion ratio from firm 1 to firm 2, i.e. $\left|\frac{\frac{\partial q_2}{\partial p_1}}{\frac{\partial q_1}{\partial p_1}}\right|$, evaluated at the pre-merger levels.

   i. Explain why there might be a problem for society if two firms, who are close competitors, merge.

   ii. Explain the strengths and weaknesses of the UPP as a merger screening tool.

d) Netflix recently announced that they will start running ads on their platform. Discuss the tradeoffs Netflix should have considered in making such a decision. What extra possibilities does the digital nature of Netflix' business bring in this regard?

e) These days, the Norwegian ministry of trade and fisheries is deciding how it wants to allocate permits to ocean-based fish farming in Norway. (Thus far, Norway has only had permits for fish farming in the fjords, and ocean-based fish farming without a permit has not allowed and has not been tested.) Explain the pros and cons of using an auction as an allocation mechanism in this case.

Question 2 – math (25 percent weight)

Suppose there is a vertical chain with one manufacturer who produces a good at a constant marginal cost c, sells it to a retailer at price w, who in turn resells this to the consumers at a price p. Apart from the manufacturing costs, the manufacturer has no other costs. The retailer has no other costs apart from the wholesale price of the good. Demand is given by $q = a - bp$. Assume throughout that $a = 10, c = 2, b = 1$.

a) What is the socially efficient price at which this good should be sold?
b) Under vertical separation, i.e. when the manufacturer and the retailer set their prices in order to maximize their own profits independently of one another, what do you expect the retail price to be?
c) What price would you expect under vertical integration, i.e. when the manufacturer and the retailer acts as one, and set the retail price in order to maximize joint profits?
d) Explain the difference between your answer to questions a), b) and c).
e) Extend the problem so that the manufacturer offers the retailer a take it or leave it-contract with a two-part tariff, so that in total the retailer pays the manufacturer $F + wq$. With our numerical example values, what is the highest value of F that the retailer will accept? What do you expect the retail price to be if both firms maximize their own profits?