

科目... 個體經濟學

組別..

考試日期..

83年

6月

18日

一. 何謂「市場失靈」(Market failure)? 其成因為何? (10分)

二. 試說明「公共財」(Public goods)之定義及其與私有財之差異。

(10分)

三. 何謂「外部性」(Externalities)? 如果有外部性之存在時, 政府應該那些干預措施?

(10分)

四. 何謂柏列圖最適境界 (Pareto optimality)? 並請分別說明  
①消費者, ②生產者, ③消費者與生產者都, 達成柏列圖最適境界之條件。

(10分)

五. 何謂「會計利潤」(Accounting Profit)與「經濟利潤」(Economic Profit)? 又經濟利潤產生的根源為何? (10分)

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Two differentiated goods, apples and oranges, are located at the two extremes of a linear product space (a line of length one). The utility of a consumer located at  $x$  is given by:

$$\begin{cases} \bar{s} - tx - p_a & \text{,if she consumes one apple;} \\ \bar{s} - t(1-x) - p_o & \text{,if she consumes one orange;} \\ \text{zero} & \text{,if she consumes neither.} \end{cases}$$

The price of an apple is  $p_a$ , the price of an orange is  $p_o$ . Consumers are uniformly distributed along the line. The marginal cost of each good is  $c$ . Firm 1 is an apple monopolist and firm 2 is an orange monopolist.

(a) Show that each firm's demand function is given by

$$D_1 = (p_o - p_a + t) / 2t$$

$$D_2 = (p_a - p_o + t) / 2t$$

as long as  $(|p_a - p_o|) < t$  and neither price is too high.

(b) Is each firm's demand a continuous function of both prices at all price levels in this model? Explain briefly.

(c) Solve for the Bertrand equilibrium. Compute the profit.

(d) Suppose that firm 1 is an apple monopoly but both firms produce oranges (i.e., firm 1 has plants at both ends of the line, firm 2 has a plant at only the orange end). Compute the Bertrand equilibrium.

Show that firm 1 earns fewer profits now than in part (c). Explain this result.

(e) Suppose that all entry costs are sunk but exit is otherwise cost. If initially firm 1 is in both markets but firm 2 is only in the orange market, will either firm choose to exit?

In the light of this, discuss whether there could be an equilibrium in this framework where firm 1 preemptively enters both markets and thus succeeds in deterring entry by firm 2 into either of the markets.

$\epsilon$  A farmer produces output by putting forth effort. Let  $x$  denote the amount of effort expended, and  $f(x)$  denote quantity of output produced as a function of effort with  $f' > 0$  and  $f'' < 0$ . Assume that his Von Neumann-Morgenstern utility function is separable in effort and income and that the disutility of effort ( $w$ ) is independent of income. In particular, let his utility function be given by:

$$U(y, x) = \frac{y^{1-R}}{1-R} - wx$$

where  $y$  = income derived solely from the sale of his output and  $R > 0$ .

(a) What is the measure of the farmer's relative risk aversion with regard to income variability?

(b) Assume that output sells for a price of  $P$  per unit so that  $y = P * f(x)$ . Find an expression for the farmer's optimal effort level. Interpret this expression. Verify that the second-order conditions are satisfied.

(c) Now suppose that the price at which the farmer will be able to sell his output is uncertain. With probability  $1/2$  the price will be  $(P + \Delta)$  and with probability  $1/2$  it will be  $(P - \Delta)$  for some  $\Delta > 0$ .

Find the first-order conditions characterizing the optimal choice of  $x$  when price is random (notice that the price here is a "mean preserving spread" of the price in part (b)).

If  $R = 0$ , does the farmer put forth more, less, or the same amount of effort as in part(b)?