

Crib: 3E7 Easter Term 2003

- 1 (a) Explain how you can represent your preferences between different bundles of two goods. [15]

[Simple concept of preferences between bundles, notion of substitutability. Ordinal utility. Graphical Representation of ordinal utility using indifference curves, Slope of the indifference curve as marginal rate of substitution. For credit - Perfect substitutes, Perfect complements, goods with limited substitution possibilities, "bads".]

- (b) Explain how the marginal rate of substitution between two goods is related to the ratio of their prices, in equilibrium. [10]

[Optimality of setting the ratio of marginal utilities to the ratio of prices –graphical analysis. Diagram of indifference curves and Budget line. Optimality of Tangency solution – slope of indifference curve as Marginal rate of substitution, which is the ratio of marginal utilities, and the slope of budget line as the ratio of prices.]

- (c) “If two consumers have identical preferences, then there will be no gains from trade between them.” Discuss. [25]

[Using the edgeworth box, show that the price mechanism will allow this economy of two consumers to achieve a more (Pareto) efficient allocation, given the starting endowments of consumers. Even if consumers have same preferences, their initial endowments may differ. If the initial endowments are outside the contract curve, they can trade to mutual benefit. Standard demonstration of optimal exchange.]

- 2 (a) What are the essential elements in the description of a game? [10]

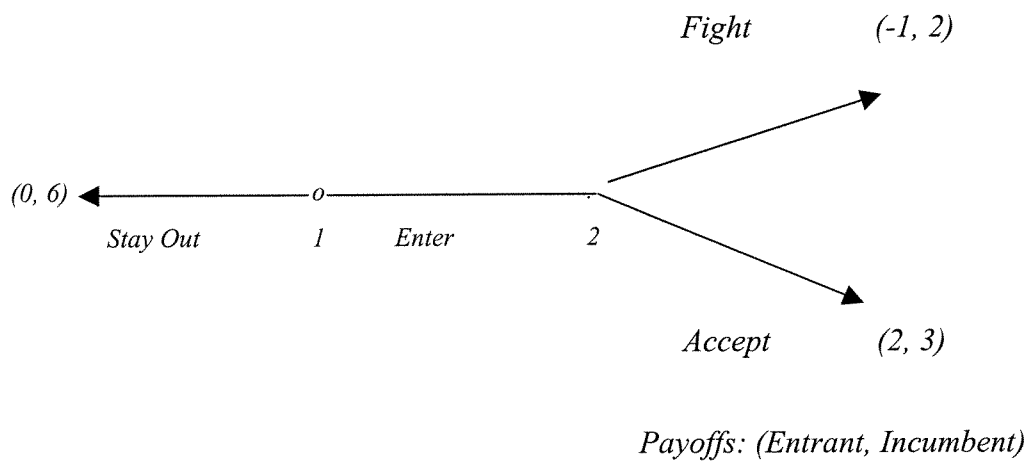
[The players, their action/strategy sets (mixed strategies for added credit), their information sets, and the outcomes (thereby defining the rules of the game)- example prisoner’s dilemma].

- (b) Explain the concept of the Nash equilibrium, using an example [15]

[Best responses to each other. For example might use Prisoner’s dilemma. Statement of mixed strategy Nash Equilibrium for added credit.]

- (c) An incumbent monopolist faces the threat of entry by a potential competitor and has the choice between fighting it off, or colluding after entry. Represent the situation as a game and discuss the equilibrium. [25]

[Standard entry game. extensive form representation with illustrative pay-offs. . Explain and use concept of sub game perfect equilibrium; sub game starting a node 2. Notion of sequential rationality, credibility.]



THE ENTRY GAME (WEAK INCUMBENT)

3 (a) For either “Externalities” or for “Transaction Costs”, explain the concept, and use an example to illustrate the nature of the economic problem [20]

Externalities.

[Explain the nature of situations where actions of one agent affect another, without a mechanism for compensation or rewards. Examples: pollution, R&D protected poorly by patents. Show how in the absence of cost or punishment, will lead to more than optimal activity on the part of the polluter, and how the absence of reward will mean less than optimal activity on the part of the R&D scientist or lab]

Transaction costs

[Costs of using the market in carrying out transactions. Costs of finding a trading partner, costs of allaying fears of being taken advantage of which includes costs of writing and enforcing a contract, differences in the information of buyer and seller, relationship specific investments, unclear property rights. Show how these costs will lead to this will mean than exchanges that would have increased welfare may not be undertaken.]

(b) Fishing in open access fisheries has been likened to a prisoners dilemma game. Comment. [30]

[Standard public good problem. Individuals consider only private benefits and costs. The way costs spill over on others –externality - not taken note of. Explain how the dominant strategy equilibrium is over-exploitation of the resource, relative to the optimal. Use a prisoners dilemma example with each player choosing between

strategies: socially optimal catch, privately optimal catch. For added credit, do players know the socially optimal catch level?]

4 (a) Give an example of a principal-agent relationship, and explain the problem that arises in it under conditions of asymmetric information. [20]

[asymmetric information problem- possibility of Hidden action (moral hazard) high effort or low effort by the agent, which is unobservable to principal. Reward contingent on observable output. Problem of eliciting optimal effort.]

(b) What considerations should inform the design of a compensation system so as to elicit the optimal amount of effort from the agent? [30]

[The classical agency model: taken in class, from Varian. Participation constraints (to ensure there is at least as much on offer as the outside opportunity) and incentive compatibility constraint(ther reward will be higher if the unobservable effort is higher) .]

or (b) Is an output sharing system efficient in a principal-agent relationship? [30]

[Show that a fixed proportion of output to agent cannot not lead to marginal product = marginal cost.]