



**5015 Introduction to Management II (ST 2005) –Final Exam**

**Final Exam**

You will be able to make a maximum of 60 points. There are a few pieces of advice we can offer at this stage:

1. Use the theoretical tools and terminology you have learned in class and from the textbook.
2. Make sure there is a clear structure in your argument. (Use some time to sort your ideas before you start writing the version you want to submit.)
3. Use the time you have! If you are ready much earlier than we planned you should wonder if you forgot something.
4. Remember: people have to be able to decipher what you write.
5. Leave a margin for our comments, so we can give you a more detailed feedback than just the number of points.

Here is the set of problems:

Examiner: Prof. Dr. B. Wolff

**Please solve four (4) of the following six (6) problems (maximum of 15 points per problem):**

You are welcome to use a dictionary and a calculator.

**Problem 1: Multiple Choice**

Write the answers to each question on the answer sheet, not on the problem sheet. For each incorrect answer, one point will be deducted for that particular question. If no solution is given on your answer sheet, you will neither gain nor lose a point.

1. All but one of the following is a problem in owner/manager (principal/agent) conflicts.
  - a) Choice of effort.
  - b) Perquisite taking.
  - c) Identical time horizons.
  - d) Differential risk exposure.
2. Organizational architecture varies from firm to firm. The three big *external* (exogenous) determinants of a firm's administrative structure are:
  - a) decision rights, rewards, and technology.
  - b) government regulation, technology and decision rights.
  - c) government regulation, technology and markets.
  - d) decision rights, rewards, evaluation systems.

3. Decision control is made up of:
  - a) initiation and ratification of projects.
  - b) implementation and monitoring of projects.
  - c) ratification and monitoring of projects.
  - d) initiation and implementation of projects.
4. Alfred Chandler, the noted business historian, indicated that "the administrative load of the senior executives increased to such an extent that they were unable to handle their entrepreneurial responsibilities efficiently." He was speaking of the:
  - a) U-form of business organization.
  - b) M-form of business organization.
  - c) matrix form of business organization.
  - d) None of the above.
5. In the benchmark competitive case, the firm will expand the hiring of employees until the:
  - a) MRP is less than the market wage rate.
  - b) MRP is equal to the market wage rate.
  - c) MRP is greater than the market wage rate.
  - d) MRP is the universe of the market wage rate.
6. Compared to owners, employees receive a large fraction of their incomes from their employers and are consequently very dependent on the fortunes of that company in the marketplace. From a 'risk-sharing' perspective, an employee tends to prefer
  - a) a flat salary.
  - b) output-based incentive pay.
  - c) year-end based performance pay.
  - d) None of the above.
7. If *Trulite's* basic production employee receives an hourly wage of  $Comp = \$5.15 + .05 Q$  where  $Q$  is the number of light switches installed per hour, then:
  - a) \$5.15 is the basic incentive to produce.
  - b)  $Q$  is completely dependent on random elements in the production system.
  - c) \$0.05 is the incentive to increase effort.
  - d) effort is unimportant in this production system.
8. Nonmarket transactions refer to:
  - a) purchase in the a spot market.
  - b) vertical integration.
  - c) long term contracts.
  - d) both b and c.

### Problem 2: Incentive Compensation

Consider the salary of Mary Sue Nelson (risk averse), a sales agent for Plain Truth Advertising (risk neutral). Mary Sue's output is  $Q = a\epsilon + \mu$ , where  $\mu \sim (0, \sigma^2)$ . Plain Truth can make a profit of  $(a\epsilon + \mu) - W$ . Mary Sue's compensation is dependent on her output as follows:  $W = 1,500 + .2Q$  where 20% of her salary is tied to her output:  $Q = 200e + \mu$ . She has a cost of effort of  $C(e) = e^2$ . Explain your calculations and results.

- At which level of effort are Mary Sue's benefits maximized?
- What will be the benefit maximizing effort level if the CEO increases the incentive from .2 to .25?
- What are the firm's profits in the case of an incentive at .2 and at .25? Will the profits rise or fall as the incentive pay is increased.

### Problem 3: Transfer Pricing

- Discuss the different transfer pricing methods.
- Discuss incentives for certain individuals to manipulate transfer prices.

### Problem 4: Vertical Integration and Outsourcing

AutoCorp faces a demand for its primary line of sporty mini-cars in Little Rock of  $P = \$30,000 - 5Q$  with a production cost of  $MC = \$8,000$ . Explain your calculations and results.

- What is the profit maximizing quantity and price at which the mini-car is sold at the market? What are the resulting profits?
- Calculate what are the implications to the market price and quantity of the mini-car if it is sold through a local dealer, MiniMart, instead of AutoCorp directly selling the car to the end customers?
- Calculate what are the total profits of the trade if MiniMart sells the cars to the end customers? Is the firm better or worse off when using MiniMart as the distributor?

### Problem 5: Ownership Rights and Investment Incentives

LapComp manufactures laptops and KeyTip manufactures keyboards for laptops. LapComp is the only customer of KeyTip and KeyTip is the sole supplier of LapComp. LapComp is planning to change the look of the laptops by producing them in two different shapes. The change affects both LapComp and KeyTip. LapComp could have benefits of either 50 or 70 of the new look, whereas KeyTip could incur costs of 40 or 60. The likelihood of high benefits and low costs is dependent on the effort of the managers of the two companies:

The effort of LapComp's owner determines the probability of benefits of 70 (x). His costs of exerting effort are  $10x^2$ .

The effort of KeyTip's owner determines the probability of cost of 40 (y). Her costs of exerting effort are  $10y^2$ .

Explain your calculations and results.

- What is the ideal effort choice? What is the expected surplus that results from the ideal effort level?
- What happens to the expected surplus when the managers cannot observe each others effort, but they share the surplus? Show your calculations.
- What happens to the total surplus if one of the companies purchases the other one and the owner of the purchased company stays as a manager under the new boss? Show your calculations.

### Problem 6: The Economics of Regulation

- Discuss the logic of supply and demand in the Market for Regulation.
- Draw a profit/price trade-off curve that results from moving from a competitive to a monopoly industry organization. Show the equilibrium position for the regulator with a political support function (PS curve). What can we say about prices and profits of the industry if we move from a competitive to a monopoly industry?

Good Luck!