



5014 Introduction to Management I (ST 2005) – Final Exam Retake

Examiners: Prof. Dr. Raith, Prof. Dr. Erichson, Prof. Dr. Reichling, Prof. Dr. Spengler, Prof. Dr. Burgard, Prof. Inderfurth, Prof. Luhmer, Prof. Dr. Wolff

You will have 2 hours to solve this exam and be able to make a maximum of 50 points.

There are a few pieces of advice we invite you to consider:

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.

The following aids can be used: non-programmable calculator

Please solve four (4) and only four (4) of the following six (6) problems (maximum of 12.5 points per problem).

Examination questions:

Question 1: Terminology

Define the following terms. Feel free to illustrate your definitions by examples.

- a) IPO
- b) Factoring
- c) Principle of unanimity
- d) Principle of self-organship
- e) Opportunism

Question 2: Marketing

Part 1. Explain the following terms:

- a) Substitutes
- b) Sales potential
- c) Market mix

Part 2. Demand function

Company ABC faces the demand for its product that can be described as $Q = 100 - 4P + 0.005 I$. P is the unit price for the product, and I is the average annual income of the customers. Given the average annual income is 16,000€ and the product currently sold at €5 per unit, answer the following questions:

- a) What is the price elasticity of the company's product? Is the demand elastic for the product?
- b) What is the income elasticity of the product? Is it a normal good?

Question 3: Finance

Imaging Co. can choose to invest on either advertising more intensively an existing product (Strategy A), or developing and advertising a new product which other companies are also trying to develop (Strategy B). The profit from each of the strategies depends on the market acceptance of the new product as follows:

	Accept	Reject
Strategy A	€ 150,000	€ 250,000
Strategy B	€ 400,000	0

Experience shows that the possibility of rejection of a new product in this industry is 50%. Suppose the company only has the capacity to invest for one strategy. Calculate the expected value and the standard deviation of both strategies. Suppose the company is risk averse, which strategy will the company choose?

Question 4: Explicit and implicit approaches of personnel planning

Six categories of workers ($i=1, 2, 3, 4, 5, 6$) have to perform four categories of activities ($a=1, 2, 3, 4$). The following table shows possibilities of personnel assignment as well as the personnel requirement (PR_a) and the personnel equipment (PE_i).

	$i=1$	$i=2$	$i=3$	$i=4$	$i=5$	$i=6$	PR_a
$a=1$	x				x	x	30
$a=2$		x				x	22
$a=3$			x		x	x	32
$a=4$				x		x	17
PE_i	20	15	18	17	26	5	

- a) Check whether the personnel equipment covers the personnel requirement by using the implicit approach of personnel planning.
- b) Apply the explicit approach of personnel planning to the example above. (1 pt for correct concept in each step, 0.5 pt for each correct calculation.)

(Please turn over for more questions!)

Question 5: Production and cost

In 3 different plants (P1, P2, P3) of a company the following product quantities (in units) are produced:

P1: 30, P2: 20, P3: 50.

The total production quantity of 100 has to be transported from the plants to 3 different warehouses (W1, W2, W3) which need the following shipment quantities (in units):

W1: 40, W2: 10, W3: 50.

The shipping cost per unit from each plant to each warehouse can be found in the following table :

	to	W1	W2	W3
from	P1	4	5	8
P2	2	6	6	
P3	5	3	7	

- (a) Develop an appropriate transportation tableau and calculate the respective shipment quantities applying the minimum unit cost search heuristic.
- (b) Describe the planning data necessary for each warehouse to determine delivery routes for distributing its total shipment quantity the customers which are served by the respective warehouse.

Question 6: Operational Financial Plan**Part 1. Inventory valuation**

Finished goods inventory on January 1st, 2005 was 300 units with value € 4500. The costs during the first quarter of 2005 to produce 500 units were as follows:

Direct material cost	€ 4000
Direct labor cost	€ 2500
Variable production overhead	€ 1500

600 units were sold during the first quarter. Production volume of the second quarter was 450 units, with the following costs:

Direct material cost	€ 3500
Direct labor cost	€ 2600
Variable production overhead	€ 1100

550 units were sold during the second quarter.

Using the weighted average method of inventory valuation, please calculate

- the cost of goods sold in the first quarter
- the value of the inventory on March 31st, 2005
- the cost of goods sold in the second quarter
- the value of the inventory on June 30th, 2005.

Part 2. Investment evaluation

An investment project requires a start-up investment of € 25 million. The cash inflow from the project in the following three years are € 10 million, € 7 million and € 9 million. Then the project is closed down. Suppose the market interest rate is 10%. Is the project worth investing using the net present value evaluation method? Show your calculation.

Good Luck!