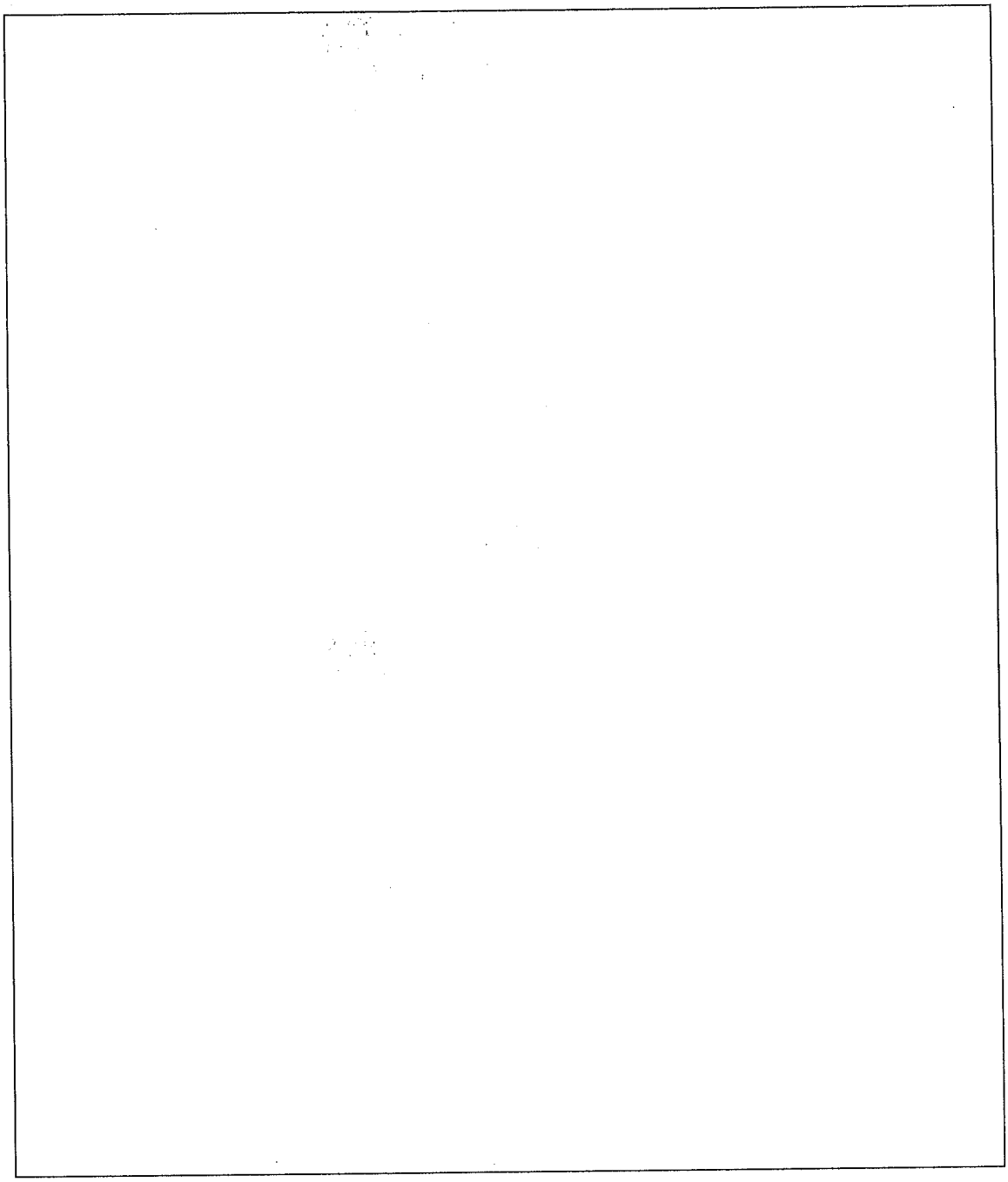
TU-22.1140 Advanced Management Accounting **Exam 13 March 2009**

Name _____ Student number _ _ _ _ _ _

You may answer the questions in English, Finnish or Swedish, but you are advised to include the English keywords in your answer. **Use additional paper. The structure and clarity of your answers have also impact on your grading!**

1. **Which issues should you consider in order to implement a performance measurement system for a factory manufacturing products to sales divisions? Technological development and competition create a constant pressure to reduce prices. Make a summary below in order to emphasize the message of your entire answer.** (6 p)

2. **Describe the factors that drive costs of offshoring service work according to the article of Stringfellow et al. (2008). Below, draw a figure that summarizes your written answer.** (6 p)



3. **Answer to the following questions concerning incentive problems in a supply chain.** A publisher prints newspapers at a cost of 50 cents per copy and sells them to a news vendor for 90 cents each, and the newspaper retails for $1,00. Let's also assume that demand for the newspaper is uniformly distributed between 100 and 300 copies a day. Unsold newspapers are worthless.

a) Under these assumptions, what would be the vendor's optimal ordering quantity and the corresponding expected daily profit? (3 p)

b) What should be the general idea of an incentive plan that would increase the publisher's daily profit without decreasing the vendor's daily profit? (1 p)

4. Answer to the following questions concerning the B-Neck plant. Justify your answer with clear calculations.

The B-Neck plant produces three products: P, Q and R. The table on the right describes the cost structure and profitability of the products. Committed costs are based on a careful activity-based cost analysis. Direct costs are calculated according to following manufacturing data.

Product	P	Q	R
Price per unit	500	360	310
Direct material cost per unit	100	50	50
Direct labor cost per unit	190	180	160
Committed costs per unit	180	80	40
Profit per unit	30	50	60

		units needed per 1 unit of product			Capacity
Cost element	unit cost	P	Q	R	per period
Raw material	5,00	2	4	6	
Part 1	20,00	1		1	
Part 2	30,00	1	1		
Part 3	40,00	1			
Processing hours	30,00	1	2	2	800 hours
Assembly hours	20,00	6	4	3	1000 hours
Finishing hours	20,00	2	2	2	800 hours

a) The latest marketing report tells that the attainable sales volumes in the forthcoming period are 50 units for P, 100 units for Q and 200 units for R. There are no product inventories and capacity cannot be augmented. Which production plan, i.e. mix of products P, Q and R, maximizes the plant's profit for the forthcoming period? (2 p)

b) The plant controller suggests that it would be possible to flexibly reassign workers between assembly and finishing departments according to the actual capacity requirements? The plant manager disagrees with the controller and argues, furthermore, that direct labor costs are committed in the short run. So you have two competing opinions, and you can find two optimal solutions, respectively. Compare the optimal solutions by calculating the difference from the plant's profit for the forthcoming period. (2 p)

5. **Answer the following questions and justify briefly your answers.**
A decentralized company has two profit centers: Device and Component. The Device division has always acquired a certain part from the Component division. Each division has full authority on all decisions regarding sales to internal or external customers. When the Component division informed that the unit price is increasing to 210€, the Device division decided to make an annual purchase contract with an outside supplier at 200€. The Component division had recently invested in specialized equipment that was used primarily to make the part in question. The manager cited the resulting high depreciation charges as the justification for the price boost. He asked the CEO of the company to instruct the Device division to buy the parts internally at the unit price of 220€. He supplied the following information:

Device division's annual purchases of part	2000 units
Component division's flexible costs per unit	180 €
Component division's capacity related costs per unit	20 €
Component division's agreed profit per unit	10 €

a) Will the company as a whole benefit if Device division buys from an outside supplier? Suppose that there is no alternative use for Component division's capacity. (1 p)
b) Suppose that Component division's equipment is not completely specialized for the part in question but there is temporarily demand for only the 2000 units required by Device division. All the capacity related costs are allocated to this part. What should be a fair full cost-based transfer price if 50% of the practical capacity is actually unused? (1 p)
c) How would you answer to the previous b)-question if you knew that the Device division had originally required capacity for 3000 units but its demand remained at 2000 units? (1 p)
d) How would your answer to a)-question change because of the information embedded in c)-question? (1 p)