Examination: 11066 „Management Accounting"   **Summer Term 2013**

Examiner: Prof. Dr. Barbara Schöndube-Pirchegger

Examination questions: 4

The following aids can be used: a calculator in accordance with the instructions given by the Board of Examiners and a dictionary.

Hint: A maximum of 60 points can be reached from solving the 4 problems below.

Problem 1 (15 points): Optimal production program

"Sumsang" manufactures and sells televisions. The product palette includes the products LCD-, LED-, CRT- and Plasma-TV. The production process requires the material "rare earth", short: „RE", which is limited to **35,000 kg** per month. The **price** for 1 kg of the RE is **$2**. The following table contains additional information about the production process and sales conditions per month:

Produkt	LCD	LED	CRT	Plasma
Sales price per unit	$1,200	$1,500	$600	$1,100
Max. sales in units per month	500	800	50	500
Direct manufacturing labor cost per unit	$950	$1,000	$400	$700
Required quantity of „RE" per unit	25 kg	20 kg	10 kg	30 kg

Required:

a) Determine the contribution margin per unit (CM), the relative contribution margin (Relative CM) and the optimal sales quantities of the products for one month.

Product	LCD	LED	CRT	Plasma
CM				
Relative CM				
Production Quantity				

b) A new supplier offers 100 additional kilograms of „RE" for a price of $9.5 per kilogram. Do you accept the offer in the given situation? Give a short explanation of your answer.

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Problem 2 (20 points):

"Power Splash" Ltd. operates a booth selling the energy drink 'Kickstarter'. During a typical month, the booth sells 17,000 units. Fixed costs are $ 12,920. The selling price per unit is $2.00, variable costs are $0.48 per drink.

Required:

a) Compute the monthly contribution margin and the operating income.

Monthly contribution margin: _____   Operating Income: _____

b) Compute the revenues needed to earn a target operating income of $ 3,040.

Revenues:_____

c) Determine the monthly breakeven sales in units and dollars.

Monthly breakeven sales in units:_____

Monthly breakeven sales in dollars: _____

d) Examine the sensitivity of the breakeven point (in units) to the following changes:

   da) Decreasing the selling price by 38 %.

   Breakeven point in units:_____

   db) Increasing variable cost to $ 0.75 per unit. The selling price is $2.00.

   Breakeven point in units:_____

e) Next year, "Power Splash" Ltd. plans to start selling two more energy drinks. They expect the following monthly sales mix:

	Kickstarter	Splasho	Lightning Flasho
Price	$ 2.00	$ 3.50	$ 2.25
Variable cost	$ 0.48	$ 1.20	$ 0.75
Sales units	16,000	40,000	17,200

Calculate the breakeven quantities and revenues for the sales mix given if fixed costs increase by 175 %.

	Kickstarter	Splasho	Lightning Flasho
Breakeven quantity in units			
Breakeven revenues in dollars			

Problem 3 (5 points):

Draw for each of the below listed descriptions of cost or revenue a graph which shows the distinctive features (use your additional paper for this problem, the horizontal axis represents units produced over the year and the vertical axis represents the total costs or revenues):

   a)   direct material cost
   b)   depreciation computed on straight line basis
   c)   Incentive bonus plan that pays managers $0.50 for every unit produced above some level of production
   d)   mixed costs e.g. car rental fixed charge + a rate per mile driven
   e)   a cost volume profit graph

Problem 4 (20 points):

The Alphabet Company manufactures and sells three products: A, B, and C. The following data apply:

	A	B	C
PER UNIT data:			
Selling price	$139	$229	$89
Direct materials	$38	$55	$29
Direct labor	$49	$67	$25
Hours PER 100-UNIT batch:			
Setup	0.9	0.6	0.2
Quality Control	1.3	1.6	1.8

The Alphabet Company has recently introduced an activity-based-costing system (ABC) to calculate the cost of its three products. The company identified the two activity-areas "setups" and "quality controls" in order to be able to assign its expected total overhead of $ 177,400 for next period in a more accurate way than under its traditional simple system with only one cost pool. The management accountant estimates to use 130 setup hours and reckons to incur costs of $86,450 for the setup activity. The estimate of the costs of the quality control activity is $90,950. The quality control activity is anticipated to require 170 hours.

Required:

a. Determine the activity-cost-driver rates for setup costs and inspection costs.

Activity-cost-driver rate for setup costs: _____

Activity-cost-driver rate for quality control costs: _____

b. Compute estimated overhead costs per unit for each of the three products.

	A	B	C
Overhead cost per unit			

c. Compute estimated operating profit per unit.

	A	B	C
Operating profit per unit			