

## **MANAGEMENT ACCOUNTING I**

School Year 2013/2014 Management – 1st Year

## Final Exam Time: 150 minutes

June 9, 2014

### In the solution all calculations explaining the values presented must be always presented

#### Part I (5 marks)

Estimated time for solution: 35 minutes

*Portuguese Sidewalk* company markets Portuguese sidewalk produced in a production process with the following characteristics.

The limestone blocks are fractured and 'planned' in irregular rectangular sheets in a section 'Planning'. Then, in the sector 'Segmentation' these sheets are broken with hammers so as to obtain standardized units with the trade mark 'Standardized'. In this process, units of smaller size and less uniform shape are unavoidably obtained. With the trade mark 'Small Sidewalk' these units move to works that don't demand too much on a finishing process. At this stage, 'scrap' is also obtained (scrap is small segments which are not useful for road surface).It is sold in bulk, by cubic metre (m<sup>3</sup>), after being transported by the company to the clients (the company considers the transport a manufacturing cost).

Later, in 'Cleanliness of Standardized', the 'Standardized' is cleaned with compressed air and packed in *big bags*. Then, it is stored and finally it is marketed by square metre  $(m^2)$ . In 'Packing of Small Sidewalk' this product is also packed in *big bags*. Then, it is stored and marketed by cubic metre  $(m^3)$ . 60% of the warehousing costs are allocated to the 'Standardized' and 40% to the 'Small Sidewalk'.

In May of the year N, the company registered the following data:

Production and Sales:

	Production	Sales		
Standardized	8 000 m <sup>2</sup>	7 000 m <sup>2</sup> at 7 $\epsilon/m^2$		
Small Sidewalk	$1 \ 000 \ m^3$	900 m <sup>3</sup> at 50 €/m <sup>3</sup>		
Scrap	$300 \text{ m}^3$	300 m <sup>3</sup> at 10 €/m <sup>3</sup>		

## Consumption of Materials:

Blocks Conversion Costs:	25 000 €			
<u>Common Costs</u>				
Planning	10 000 €			
Segmentation	7 000 €			
<u>Specific Costs</u>				
Cleanliness of Standardized	3 380 €			
Packing of Small Sidewalk	3 000 €			
Warekousing	10 000 €			
Transport of Scrap	900 €			

## Selling (Distribution) Expenses:

Variable:	2%	on	the	sales	value	of	'Standardized'	and	of	'Small
	Side	wall	c' an	d 0.5 €	per m <sup>3</sup>	of '	Scrap'			
Fixed:			18 00	0€						

There were no opening stocks of finished products

## Regarding May of N, it is required:

- 1. Ascertain the value of the joint costs to allocate to the 'Standardized' and to the 'Small Sidewalk' (Appendix 1);
- 2. Assume that the answer of the previous question was 40 000 € and ascertain the unit MCFP of the main products using the Net Realizable Value Method (Appendix 2);
- 3. Using the values obtained in the previous question prepare the profit and loss statement per functions and products up to the gross profit (Appendix 3).

### Part II (7 marks)

#### Estimated time for solution: 50 minutes

**CVP** company produces and markets on the national market only one product and has a standard (installed) capacity to produce 50 000 tons/month.

Regarding April, the company prepared the following Profit and Loss Statement using the Absorption Costing System (values in euros):

Sales	500 000
MCPS + NPMC	250 000
Gross Profit	250 000
Selling (Distribution) Expenses	
Variable	50 000
Fixed	100 000
Administrative (fixed) Expenses	50 000
Operational Profit	50 000
Financial (fixed) Expenses	5 000
Profit Before Taxes	45 000

Regarding April, the following data are also known:

- Monthly production: 30 000 tons
- Selling Price: 20 €/ton
- Monthly Manufacturing Fixed Costs: 150 000 €
- There are no opening stocks of production.

#### It is required:

- 1. Prepare the Profit and Loss Statement per Functions, using the Rational Costing System (Appendix 4);
- 2. Using the Profit equation of CVP (without preparing the P&L Stat per Function ), estimate the profit to obtain, using the Variable Costing System (Appendix 5);
- 3. Using the notion of manufacturing fixed costs incorporated in the profit, justify the difference of profits obtained using the absorption costing system and the variable costing system (Appendix 6);
- <u>Now assume that the monthly Manufacturing Variable Costs amount to 165 000 €</u>. Calculate the Margin of Safety regarding the present production level of the company (assume that the company always sells all production and that it keeps in the same relevant range), explaining its meaning (Appendix 7).
- 5. <u>Also assume the previous question</u>. The company received a proposal of isolated exportation of 10 000 tons of its product at a selling price of  $10 \in$ . To accept this order means an additional cost of variable

distribution of  $3.5 \notin$ /ton. From a simply economic perspective in the short term, say if the company should or should not accept the isolated order (Appendix 8).

## Part III (7 marks)

### Estimated time for solution : 50 minutes

**HOMOGENOUS** company produces and markets the product X and the product Y, using a production process with the following characteristics:

- The raw material M1 is converted in section I, and the product X is obtained;
- The raw material M2 is converted in section I, and the product Y is obtained.

Regarding April 2014, the following data are known:

a) Costs (in  $\in$ ) and activity of the sections

	SI	SII	FPW
Direct costs	26 000	18 000	10 000
Activity	2 000 Mh	-	-

- Regarding the activity of section I, 1 200 Mh are used in the manufacture of the product X and the other ones in the manufacture of the product Y
- In section II which includes the remaining non-manufacturing costs besides the identified ones in section I as there is not a homogenous activity, it was not possible to define a Work Unit. The company allocates its costs to section I and to FPW in the proportion of the direct costs of these sections. For the purpose of costing the day is adopted.
- The Finished Products Warehouse is allocated to the two products in proportion to the quantities produced. For the purpose of costing the day is adopted.
- b) Stocks variation

Raw materials

	M1	M2
Opening Stocks	100 tons at 20 €/ton	-
Purchases	600 tons at 22 €/ton	800 tons at 30 €/ton
Closing Stocks	200 tons	100 tons

### Products

	Product X	Product Y
Opening Stocks	-	200 tons at 14 €/ton
Production	5 000 tons	2 500 tons
Sales	? at 15 €/ton	? at 25 €/ton
Closing Stocks	500 tons	700 tons
Opening Stocks PiP	-	400 tons with a finishing level of 75 %
Closing Stocks PiP	-	1 000 tons wi4th a finishing level of 40%

Note: The opening stocks of PiP of the product Y were estimated, at the end of February, in 4 500 €

Knowing that the company uses the absorption costing system and FIFO as valuation criterion, **IT IS REQUIRED**:

- 1. Ascertain the unit cost of the Work Units or of Allocation and of the sections Costing (Appendix 9);
- 2. Ascertain the unit cost of the finished production of the two products (Appendix 10);
- 3. Ascertain the monthly Gross Profit (Appendix 11).

# Part IV (2 marks - Appendix 12)

Estimated time for solution: 15 minutes

Comment the following sentence:

'One of the main disadvantages of the Uniform Cost Centres (Sections) Method is the fact that it does not make any contribution to an adequate allocation of the manufacturing indirect costs to the different products'.