ISCTE/IUL BUSINESS SCHOOL

MANAGEMENT ACCOUNTING I - 2014/2015

ADDITIONAL CASES

Case A

MIAU company produces and markets food for cats, having presented the following Profit and Loss statement regarding the month of June of the year N:

Description	Value (€)
Sales	90 000
MCPS + NPMC	40 500
Gross profit	49 500
Distribution expenses	
Variable	1 800
Fixed	6 000
Administration expenses	15 000
Operational profit	26 700
Financing expenses	10 000
Profit before taxes	16 700

The following data regarding the same month are also known:

Description	Value (€)
Selling price	15 €/ton
Manufacturing variable costs	2.5 €/ton
Relation between actual production and normal (standard)	0.75
production	
Manufacturing fixed costs incorporated in MCFP (RC System)	22 500 €
Opening stock	1 000ton at 6 €
Closing stock	2 500 ton

Based on the information provided and knowing that the company adopts LIFO as a valuation criterion of the outputs, it is required to:

1. Identify the costing system which underlies the profit and loss statement, presenting all the justifiable calculations;

- 2. Ascertain the company's profit, in the same month, using the variable costing system, without presenting the profit and loss statement;
- 3. Justify the difference of profits obtained by the two previous costing systems, using the concept of fixed costs;
- 4. Relate this difference of profits to the variation of the stocks, knowing that the manufacturing variable costs kept constant.

Case A2

TUNAFISH company, based in the island of Pico, Azores, takes up the production of tuna fillets in olive oil, which it markets to the large shopping areas in packets of 12 bottles, each one weighing 250 g.

At the beginning of the month of June of the year N, the company had in storage 1,500 packets valued at the following unit costs:

Opening stock	AC System	RC System	VC System
Unit cost (€)	12	11	8

Regarding the month mentioned above the following data are known:

Description	Value
Selling price	20 € per packet
Sales	5 000 packets
Production	6 000 packets
Normal (standard) production	8 000 packets
Manufacturing variable costs	8 € per packet
Manufacturing fixed costs	24 000 €
Variable distribution expenses	1.5 € per packet
Fixed distribution expenses	7 500 €
Administrative (fixed) expenses	15 750 €

Based on information provided and knowing that the company adopts FIFO to value the outputs, it is required to:

- 1. Present the profit and loss statements per functions using the absorption, rational and variable costing systems;
- 2. Justify the difference of profits found in the previous question, presenting all calculations.

<u>Case B</u>

ZED plc manufactures one standard product, which sells at $10 \in$ per unit. You are required to:

- (a) Prepare, from the data presented below, a break-even and profit-volume graph showing the results for the six months ending 30 April and to ascertain:
 - **i.** The fixed costs;
 - ii. The variable costs per unit;
 - iii. The profit-volume ratio;
 - iv. The break-even point;
 - v. The marginal of safety;

Month	Sales	Profit/(loss)	
	(units)	(€)	
November	30 000	40 000	
December	35 000	60 000	
January	15 000	(20 000)	
February	24 000	16 000	
March	26 000	24 000	
April	18 000	(8000)	

(**b**) Discuss the limitations of such a graph

(c) Explain the use of the relevant range in such a graph

Case C

The summarized profit and loss statement for EXE plc for the last year is as follows:

	(000€)	(000€)
Sale (50 000units)		1000
Direct Materials	350	
Direct wages	200	
Fixed production overhead	200	
Variable production overhead	50	
Administration overhead	180	
Selling and distribution overhead	120	
		1100
Profit / loss		(100)

At a recent board meeting the directors discussed the year's results, following which the chairman asked for suggestions to improve the situation.

You are required as management accountant, to evaluate the following alternative proposals and to comment briefly on each:

- (a) Pay salesmen a commission of 10% of sales and thus increase sales to achieve break-even point.
- (**b**) Reduce selling price by 10%, which it is estimated would increase sales volume by 30%.
- (c) Increase direct wage rates from 4€ to 5€ per hour, as part of a productivity/pay deal. It is hoped that his would increase production and sales by 20%, but advertising costs would increase by 50 000€.
- (d) Increase sales by additional advertising of 300 000€, with an increased selling price of 20%, setting a profit margin of 10%.

<u>Case D</u>

Norvik Enterprises operate in the leisure and entertainment industry and one of its activities is to promote concerts at locations throughout Europe. The company is examining the viability of a concert in Stockholm.

Estimated fixed costs are $\in 60\ 000$. These include the fees paid to performers, the hire of the venue and advertising costs. Variable costs consist of the cost of a pre-packed buffet which will be provided by a firm of caterers at a price, which is currently being negotiated, but it is likely to be in the region of $\in 10$ per ticket sold. The proposed price for the sale of a ticket is $\in 20$. The management of Norvic has requested the following information:

1 - The number of tickets that must be sold to break-even (that is, the point at which there is neither a profit nor loss).

- 2 How many tickets must be sold to earn €30 000 target profit?
- 3 What profit would result if 8000 tickets were sold?

4 - What selling price would have to be charged to give a profit of €30 000 on sales of 8000 tickets, fixed costs of €60 000 and variable costs of €10 per ticket?

5 - How many additional tickets must be sold to cover the extra cost of television advertising of €8000?

<u>Case E</u>

Company ABC plc presents the following budgeted data for April 2010:

- Production 100 000 units
- Sales units 90 000 units
- Selling price 3.3€

osts 110 000
90 000
cturing costs 30 000
osts 9 000
s 20 000
30 000

Required:

- i) Calculate and comment the break-even point;
- ii) Calculate and comment the margin of safety;
- iii) How many units should ABC sell in April in order to obtain a profit of €50 000?

(c)

- iv) What would be the selling price in order to obtain the same €50 000?
- v) What would be the profit it the company sells 110 000 units in May (do not use P&L statement or similar)?

<u>Case F</u>

JAMJUICE company produces and sells jams and natural fruit juices. The company has several orchards from where different types of fruits are harvested as oranges, apples and peaches.

Regarding to the jams and peach juices, the productive process of this organization is the following:

- In the *washing and peeling section*, the peaches are washed and peeled and the pits are removed.
- In the *grinding section* the pieces of peach are triturated and transformed in peach pulp.
- In the *preparation section* water and sugar are added to the peach pulp. After this, the mixture is cooked and peach jamis obtained. The jams are sold in 200 grams jars.
- The juice and the leftover peach resulting from the grinding process are also prepared in order to get juice, at the *liquefaction section*.
- The peach peels are cut and packed, being sold to companies that produce animal food.

From July monthly accounting it is possible to get the following information:

~	2	0 1	C	C
Products	Units	Production	Sales	Selling price (€)

Jams	Jars	50 000	35 000	4.20
Juices	Bottles	20 000	17 500	2.00
Peels	Kg	3 500	3 000	5.00

Manufacturing Costs:

Description	Value(€)
Peaches Harvested (35 000kg)	0.40€/kg
Washing and Peeling Section	40 000
Grinding Section	12 000
Preparation Section	10 000
Liquefaction Section	3 000
Jars Consumption and Jams Packing Section	20 000
Bottles Consumption and Juices Packing Section	10 000
Boxes and Peels Packing Section	100

Other no manufacturing costs

Description	€
Administration Costs	10 000
Variable distribution costs	2% Sales Value
Fixed distribution costs	4 500

With the information above it is required:

- (a) Calculate the manufacturing cost per unit of each joint product and by-product, by using the net realizable value method.
- (b) Calculate the profit per product and global profit.

Case G

ERANOVA company produces and markets baths mats (BM) and shower bases mats (SM) from the conversion of the following materials:

- Acrylic (sheet)
- PVC

The following data were collected from the accounting of January of the year N:

a) Opening stocks and purchases of materials:

Description	MU	Opening stocks		MU Opening stocks Purchases		ses
		Q	Unit cost (€)	Q	Unit cost (€)	
Acrylic	m	100	23.94	1 200	25.0	
PVC	m	120	4.49	2 200	5.0	

b) Materials consumptions:

Description	MU	BM	SM
Acrylic	m	600	500
PVC	m	970	990

c) Production in progress:

Description	MU	BM	SM
Closing stock	€	1 050	750
Opening stock	€	2 900	850

d) Production and sales:

Description	MU	BM	SM
Production	unit	200	250
Sales	unit	180	250
Selling price	€	200	175

e) The conversion costs, which the company considers on the whole as indirect, correspond to $31\ 690\ \epsilon$;

f) During the month the company spent 1 250 labour hours, being 540 for the product BM and 710 for the product SM;

g) The company values the stocks according to LIFO criterion and adopts the absorption costing system;

h) The company identified in the manufacturing process the stages of Cut and Assembly, to which 19 270 \in and 12 420 \in corresponded respectively. The allocation per product should be carried out in proportion to the activity of each stage of the production process according to the following table:

Description	MU	BM	SM	
Cut	m/h	225	275	
Assembly	l/h	315	435	

Based on the data collected, it is required to:

1) Ascertain the production unit cost allocating the indirect costs according to the number of labour hours;

2) Ascertain the production unit cost, allocating the indirect costs according to the number of hours spent regarding each one of the stages of the production process.

<u>Case H</u>

BISCUIT company produces and markets biscuits.

Concisely, its production process is as follows:

• The raw materials are put into the kneading machine, where the biscuit dough is obtained. This dough is immediately taken to the manufacture line where it gets different shapes, and then it is ready to be baked in the oven. In a continuous process, a conveyor belt is used to move the biscuits from the oven. One part of them is immediately packed and another is previously chocolate-coated.

The company adopts the uniform cost centers method and the following manufacturing cost centers are defined:

- Manufacture WU machine hour (m/h)
- Packing WU machine hour (m/h)
- Maintenance WU labour hour (l/h)
- Common expenses

- AU – to the other cost centers according to their direct costs - CU – day

The finished products are named 'round biscuits' (R) and 'round coated biscuits' (RC)

The following data were collected from the accounting of May, year N:

	Direct o	A	
Cost centres	Variable costs	Activity	
Manufacturing	36 800	180 000	720 m/h
Packing	24 000	156 200	600 m/h
Maintenance (*)	4 200	3 600	250 l/h
Common expenses	-	12 600	-

a) Direct costs and activity of the cost centers:

(*) The activity of Maintenance is allocated to the main cost centers – 150 l/h for Manufacturing and 100 l/h for Packing.

- The activity of Manufacturing is allocated to the products - 400 m/h for R and 320 m/h for RC

- The activity of Packing is allocated to the products – 360 m/h for R and 240 m/h for RC.

b) Materials consumptions:

Description	MU	Unit cost (€)	Prod. K	Prod. RC
Flour	kg	0.50	45 000	30 000
Sugar	kg	0.70	9 000	6 000
Chocolate coating	kg	5.00	-	2 000
Vegetable fat	kg	0.80	6 000	4 000
Cardboard boxes	unit	0.05	120 000	80 000
Additives	(€)	-	900	600

c) Production and sales:

Description	MU	Production	Production Sal	
			Quantities	sp (€)
R biscuit	kg	60 000	40 000	6.30
RC biscuit	kg	40 000	40 000	6.70

Based on the data collected, it is required to:

- 1. Using the cost centers method, ascertain the gross profit using the absorption and variable costing systems;
- 2. Justify the difference in profits found.

<u>Case I</u>

PREMETAL company produces two models of metallic structures:

The manufacturing process consists essentially of the following:

- Cut and folding of sheets and angle bars according to the dimensions of the different components;
- Assembly of the structures from the components;
- Painting

The structures components are profiles and sheets that, as they are obtained, are stored for future use. Assembly and painting operations are immediately carried out without any intermediate storage.

In order to consider costing the uniform cost centers are:

- Cut and folding WU machine hour (mh)
- Assembly WU labour hour (lh)

- Common expenses AU to the cost centers of cut and assembly in equal parts CU day
- Painting AU no. of structures painted
- Repair shops WU labour (lh)

The following data were collected from the accounting of March, year N:

a) Costs and activities of the cost centers:

Description		Cut	Assembly	Painting	Repair	Common
	MU				shop	expenses
Direct costs	€	43 900	30 000	40 000	3 240	9 250
Reallocation						
of:						
Repair shops	lh	300	380	400	-	120
Activity		2 000	10 000 lh	?	1 200 lh	?
		mh				

b) Materials consumptions and activity of the cost centers per product:

Description	MU	Profiles	Plates	Structures	Structures
				Ι	Π
Raw Materials					
Angle bars	un	16 000	-	-	-
Sheets	un	-	5 000	-	-
Profiles	un	-	-	5 500	5 500
Plates	un	-	-	5 000	3 000
Convers. costs					
Cut	mh	1 000	1 000		
Assembly	lh			6 000	4 000

c) Production and sales

All monthly production was finished and sold in the period. Structures I were priced for 430 € per unit and Structures II for 425 € per unit

Production

Description	MU	Structures I	Structures II
Profiles	un	5 500	5 500
Plates	un	5 000	3 000
Structures	un	1 500	1 000

d) Purchases:

Description	MU	Unit cost (€)	Quantities
Angle bars	m	7	20 000
Sheets	m	140	5 000

e) Opening stocks:

Description	MU	Unit cost (€)	Quantities
Direct materials			
• Angle bar	m	6.50	2 000
• Sheet	m	140.00	600
Intermediate finished			
products			
Profiles	unit	11.45	2 000
• Plates	unit	90.50	1 500

Knowing that the company uses the absorption costing system and the LIFO valuation criterion, it is required to:

- 1. Present the table of the Conversion Costs;
- 2. Present the table of the Production Costs;
- 3. Ascertain the Gross profit;
- 4. Calculate the selling prices to fix in order to get an 18% margin on the selling price.

Case J

SOUTHCONCRETE company produces and markets concrete in work progress.

The company adopts the uniform cost centers method. Aiming at costing systems, the following cost centers are defined:

- Concrete centre WU Machine hour (mh)
- Cement mixers WU Machine hour (mh)
- Silos AU Quantity of cement bought CU – Day
- Repair shop WU Labour hour (lh)

The following data were collected from the accounting of October, year N.

a) Direct costs and activity of the manufacturing sections (cost centers):

Description	Concrete	Concrete	Silos	Repair
	centre	mixers		shop
Direct cost (€)	5 750	14 795	1 046	12 215
Activity	150 mh	1 200 mh	-	700 lh (*)
Reallocation of support.				
cost centers (*)	200 lh	500 lh	-	-

b) Consumptions and purchases of materials:

Description	MU	Consumptions	Purcl	hases
			Quantity	Unit Cost (€)
Cement	ton	800	1 000	65.00
Gravel	m ³	2 500	2 500	10.00
Sundries	m^3	720	750	3.00

c) Production and sales

In the month the company produced 3 000 m³ of finished concrete and sold 2 950 m.

Knowing that the company uses the absorption costing system, it is required to:

1. Present the table of the Conversion Costs of the cost centers;

2. Present the table of the Production Costs of the finished concrete;

3. Ascertain the selling price to fix so that the company gets a 10% margin on the selling price.

Case K

OASIS clinic renders health service, namely medical supervision post-surgical operations, analyses and X – rays services.

The following main cost centers are defined.

- Medical consultations Patients are supervised when submitted to surgeries.
- WU Labour (lh)
- Analyses center
- AU Number of analyses done
- CU Day
- Radiology center
- AU Number of examinations done
- CU Day

Taking into account the development of the company's activity there are other cost centers:

- Pharmacy/laboratory it registers the costs that such services render. They are considered a cost concerning the services rendered by the appointments and analyses centers.
- AU To the services rendered in proportion to the materials (pharmaceutical and chemical products) incorporated in the service
- CU Day
- Common Expenses it incorporates all the other costs regarding the services rendered.
- AU To the main cost centers in proportion to the respective direct costs.
- Cu Day

Concerning January, year N the following data were collected:

a)Direct costs and activity of the cost centers:

Description	MU	Medical	Analyses	Radiology	Pharm.	Common
		consultations	centre	centre	/Lab.	expenses
Direct costs	€	16 920	12 300	24 900	16 100	8 118
Activity	-	1 440 lh	3 000 un	2 500 un	-	-

b) Variation registered in materials warehouses were the following:

Description	MU	Pharm/chemical products	Radiology products
Opening stock	€	45 050	13 400
Purchases	€	25 450	18 430
Closing stock	€	38 300	10 220

The consumptions of pharmaceutical/chemical products were allocated to appointments and analyses services, respectively, in the proportion of 40% and 60%.

d) Services rendered:

Description	MU	No. of services	Invoicing (€)
Medical consultations	unit	(*) 4 320	108 000
Analyses	unit	3 000	48 450
X - rays	unit	2 250	78 750

(*) On average each medical consultation lasts 20 minutes.

Knowing that the company uses the absorption costing system, it is required to ascertain the cost of the services rendered and the period gross profit.

Case L

REPAC company is based in the district of Lisbon and repairs heavy vehicles, such as motor cranes and lorries.

This company has the necessary working shops to develop its activity, namely mechanics, electricity, panel beating and painting.

Aiming at management and costing control, this company adopts the uniform cost centres method. A cost centre of common expenses is defined, besides the corresponding ones to the activities mentioned above. In this cost centre other costs of manufacturing nature are included.

Whenever this company begins a repair, there is a work sheet, where the respective costs are written down.

The following data were collected from the accounting of February, year N:

Description	Mechanics	Electricity	Panel	Painting	Common
			beating		expenses
1.Direct costs					
Variable	10 080	8 240	9 120	11 200	0
Fixed	8 000	4 000	7 000	7 000	10 000
Total (1)	18 080	12 240	16 120	18 200	10 000
2.Reallocation of					
supp. cost centres					
Common expenses	2 800	1 800	2 600	2 800	-
3.Total	20 880	14 040	18 720	21 000	10 000
costs(1)+(2)					

a) Table of Conversion Costs (\mathfrak{E})

b) Materials consumptions (\mathbf{f})

Materials	Job X	Job Y	Job Z
Mechanics materials	2 000	1 400	1 000
Electricity materials	1 600	3 000	3 800
Putty	420	200	100
Paint	1 800	1 400	1 100

c) Activity of the cost centers

Cost centres	Job X	Job Y	Job Z
Mechanics repair shop	90 lh	120 lh	80 lh
Electricity repair shop	120 lh	60 lh	80 lh
Panel beating	80 lh	70 lh	90 lh
Painting	190 lh	160 lh	150 lh

d) Production and sales

Works	Beginning	Costs on January 31st (€)	Conclusion
Job X	January, year N	3 000	February, year N
Job Y	January, year N	2 040	-
Job Z	February, year N	-	-

Job X was priced (invoiced) in February, year N at the total value of 60 000 €.

e) Non-manufacturing costs

Description	Costs (€)
Distribution services	1 000
Administration services	7 000
Financing expenses	8 000

Based on the data collected, it is required to:

- 1. Present the Table of Production Costs of February, year N, using the absorption costing system;
- 2. Present the Profit and Loss Statement per Functions of February, year N, using the absorption costing system; and
- 3. Assess the impact that the use of the variable costing system would have on the jobs cost and on the period profit. Do you agree with the use of this costing system in REPAC company?