Item 1

Welcome to the Management Accounting Midterm,

The exam, which lasts for 90+30 minutes, is composed of **6 parts**, comprising multiple choice questions, short essays and numerical questions.

The exam has a **hybrid format**: all **questions are on Wiseflow**, answers to **multiple choices** and **essays must be on Wiseflow**, while **numerical questions** should be solved **on paper**. **Answer each part in a separate answer sheet**.

Multiple choice questions **include a penalty for wrong answers** (-0.2), but no justification is required. For each question, there is **one and only one correct answer**.

You are required to **show the supporting calculations** to numerical questions, otherwise, they will **not be marked**. In intermediate calculations, if needed, round to **2** decimals**.**

Unclear answers will not be marked.

The exam is **closed-book** and **only basic or scientific calculators** are allowed.

You are expected to comply with Nova SBE's Code of Honour. **Unethical behaviour will not be tolerated.**

Best of luck!

Management Accounting Teaching Team

Teaching Team Tip: You can freely navigate back and forward, avoid getting stuck into questions :).

Do not write anything

Item 2

Calculator

[2 Points]

Aikea, a furniture manufacturer, which uses **FIFO**, has shown the following data regarding year N:

	Opening Inventory	Closing Inventory
Of finished goods	300 000 €	?
Of work in progress goods	200 000 €	155 000 €
Total	**300 000 €**	**?**

Manufacturing Costs	Selling Costs	G&A Costs	Financial Costs
1 000 000 €	50 000 €	42 500 €	22 000 €

Movements in Finished Goods	Units
Production	95 000
Sales	60 000
Closing Stock	65 000

1.1) Knowing that the unit selling price is 15 €, Prepare the P&L Account by Function (according to Management Accounting).

ANSWER ON PAPER

Answer on Paper Only

Item 3

[4 Points]

Amazen Company trades several commodities. Until last year, the Company used a traditional costing system with Cost of Sales as the single allocation base to allocate its overheads.

More recently, the Company decided to adopt activity-based costing system (ABC) to better understand the profitability per client. After conducting interviews with the relevant personnel, the steering committee, assisted by consultants, identified three activities cost centers, split the overheads by the activities and computed their cost drivers, as shown below:

Activity	Cost Driver	Cost Driver Rate
Processing an order	Number of orders	20 €
Adjusting urgent orders scheduling	Number of urgent orders	40 €
Providing client support	Number of phone-calls	10 €

Regarding last year, ABC provided the following information about their only two clients:

	Client A	Client B
Sales	50 000 €	20 000 €
Cost of Sales	32 000 €	8 000 €
Number of orders	300	100
% of urgent orders per client	80%	30%
Number of phone calls	290	30

2.1) Compute the **profit per client** using the **activity based costing** implemented by Amazen.

ANSWER ON PAPER

Answer on Paper Only

2.2) Compute the profit **per client** using the **traditional costing system** previously used by Amazen.

ANSWER ON PAPER

Answer on Paper Only

2.3) Comment the results obtained in the previous questions. Suggest a measure that Amazen can take to improve profitability, **based on information provided by the ABC system.** (Note: You can use bullet points)

ANSWER HERE ON WISEFLOW

0 / 120 Word Limit

Item 4

Calculator

[1 Point, -0.2 if incorrect]

The **primary** objective of management accounting is:

A	To provide potential investors with useful information to decision making	
B	To provide banks and other creditors with useful information to decision making	
C	To provide management with useful information for planning and control operations	✔
D	To assist the shareholders in security valuation	
E	To provide accountants with information about taxable income	
F	None of the others	

Item 5

Calculator

[1 Point, -0.2 if incorrect]

Under Variable Costing, an example of a product cost is:

A	The insurance on factory equipment
B	Commissions paid to the sales team
C	The property taxes on the factory building
D	None of the others ✔

Item 6

Calculator

[1 Point, -0.2 if incorrect]

Traditional costing systems were adequate when...

A	There was intense global competition	
B	Companies manufactured a lot of products	
C	Information processing costs were low	
D	Overhead costs were very high	
E	Direct costs were the dominant costs in the company	✔
F	None of the others	

Item 7

Calculator

[1 Point, -0.2 if incorrect]

Company Beta started the month with an opening inventory of WIP of 500 € and ended the month with a closing inventory of WIP of 100 €. There were some units in the opening inventory of finished goods, but there are not any on the closing inventory. Which of the following is true?

A	Company Beta's factory didn't work during the month	
B	Monthly sales (of finished goods) were higher than the monthly production, in units	✔
C	The COGS during the month is the same as in the previous month	
D	The Manufacturing Cost during the month is the same as the COGM	
E	None of the others	

Item 8

Calculator

[1 Point, -0.2 if incorrect]

TastyPasta, which uses **LIFO**, is a company that produces and sells one type of pasta. The following information was collected regarding October N:

Costs	**Variable**	**Fixed**
Manufacturing	6 000 €	9 000 €
Non-Manufacturing	2 500 €	5 500 €

Production	1 500 kg
Practical Capacity	1 800 kg
Sales	1 450 kg
Unit selling price	25 €

Knowing that the company adopts **Full Costing Based on Practical Capacity**, how much is the **operating profit** for the month of October?

A 21 450 €

B 13 250 €

C 13 700 € ✓

D 21 700 €

E None of the others

Item 9

Calculator

[1 Point, -0.2 if incorrect]

NextGen Devices is a Portuguese manufacturer of printers and laptops. Consider the information provided below:

Actual data	**Year N**
Machine Hours used by Printers	5 567 Mh
Machine Hours used by Laptops	4 926 Mh
Manufacturing overheads	507 000 €
Non-manufacturing overheads	33 000 €

Knowing that in year N NextGen had budgeted manufacturing overheads at 45 € per machine hour, what is the amount of under/over recovery of overheads in year N?

A 34 815 € Over-recovery of Overheads

B 34 815 € Under-recovery of Overheads ✔

C 67 815 € Over-recovery of Overheads

D 67 815 € Under-recovery of Overheads

E None of the others

Item 10

Calculator

[3 Points]

MANCUNIAN, CO. manufactures and sells two finished goods (products A and B). Consider the information below regarding October N:

Inventory Movements and Sales

	Product A	Product B
Sales	275 tonnes	270 tonnes
Selling Price	62 €	75 €
Production	300 tonnes	270 tonnes
Opening stock[1]	85 tonnes	0 tonnes

1. Valued at 18 € under Variable Costing and 25 € under Total Full Costing

- **LIFO** has been adopted as the inventory valuation method.

Production Information

Per Tonne	Product A	Product B
Direct Materials	2.4 units	1.8 units
Direct Labor	0.4 Lh	1 Lh

- Cost of Direct Materials: 2.5 €/unit
- There are neither opening stocks nor closing stocks of direct materials
- Cost of Direct Labor: 7.5 €/Lh

Manufacturing Overheads:

Description	Amount
Consumption of indirect materials in the factory	690 €
Energy consumption	1 230 €
Depreciations of manufacturing equipment	900 €
Wages of manufacturing personnel	2 050 €
Insurance of the factory building	1 650 €
Total	**6 520 €**

- The consumption of indirect materials and energy are variable costs while the remaining items are fixed
- Manufacturing overheads are allocated equally between the two products

Non-Manufacturing Fixed Overheads:

Description	**Commercial Department**	**Administrative Department**
External Supplies and Services	1 420 €	1 277 €
Salaries	2 435 €	2 290 €
Insurance	1 200 €	1 160 €
Depreciation	3 300 €	845 €
Total	**8 355 €**	**5 572 €**

Variable Non-Manufacturing Costs:

- The company supports sales commissions of 5% on sales revenues of each product.

4.1) Assuming the company uses **Variable Costing**, prepare the Profit and Loss Account by Function using the **Contribution Margin Format** .

ANSWER ON PAPER

Answer on Paper

Item 11

Calculator

[2 Points]

Guilty Juices produces cold-pressed juices. To extract the juice, fruits and vegetables are pressed in the Extraction Department to obtain the final product.

For every five units of raw fruits and vegetables (direct material) that enter the process, one unit of juice is produced. However, under efficient conditions, 50% of the production is lost due to pulp, seeds, and other waste.

The following information was collected regarding the month of September:

Manufacturing Costs	**Extraction Dept.**
Materials	10 000 €
Labor	2 000 €
Overheads	8 000 €
Total	**20 000 €**

Inputs – Direct Materials (units)	100 000
Outputs – Finished Goods (units)	8 500

- There was no opening or closing stocks of finished goods and work-in-progress
- The scrap value is 0 € for all losses

5.1) Compute the value of the **Other Operating Costs** generated in this period by the **Abnormal Losses**.

ANSWER ON PAPER

Answer on Paper

5.2) Knowing that the selling price is 2.5 €, calculate the **Cost of Sales** and the **Operating Profit**. *If you didn't answer 5.1, consider Other Operating Costs of 2 000 €.*

ANSWER ON PAPER

Answer on Paper

Item 12

Calculator

[3 Points]

The **CookieMonster Company** is a company that produces chocolate and ginger cookies. The company is divided in the following homogeneous cost pools:

- **Mixer** (Mh as unit of work), where all the ingredients are mixed
- **Oven** (Mh as unit of work), where the cookies are baked
- **Maintenance** (Lh as unit of work), that ensures the maintenance of all production equipment
- **Cleaning** (Lh as unit of work), that clean the factory

Consider the information below for the month of October**:**

Movement of finished goods

	Chocolate cookies	**Ginger cookies**
Opening stock	25 ton at 900 €/ton	21 ton at 925 €/ton
Production	100 ton	110 ton
Closing stock	30 ton	25 ton

Prime costs:

	Chocolate cookies	**Ginger cookies**
Chocolate/Ginger	35 ton at 475 €/ton	45 ton at 525 €/ton
Other direct materials	55 000 €	60 000 €
Direct labor	3 500 €	4 000 €

Manufacturing costs directly assigned to each homogeneous cost pool:

	Mixer	**Oven**	**Maintenance**	**Cleaning**
Directly Assigned Costs	21 706 €	12 309 €	?	?

Activity of the homogeneous cost pools

Users/ Suppliers	**Mixer**	**Oven**	**Maintenance**	**Cleaning**
Chocolate cookies	950 Mh	850 Mh		
Ginger cookies	1 230 Mh	950 Mh		
Mixer			180 Lh	400 Lh
Oven			220 Lh	200 Lh
Maintenance				200 Lh

Cleaning			100 Lh	
Total	**2 180 Mh**	**1 800 Mh**	**500 Lh**	**800 Lh**

Non-manufacturing costs:

- Selling costs: 2 500 €
- Administrative costs: 5 000 €
- Financial costs: 1 500 €

Selling price (per ton):

- Chocolate cookies: 2 500 €
- Ginger cookies: 3 000 €

Other information:

- Cookie Monster uses **FIFO** as the method of inventory valuation
- There were no changes in Work-in-progress
- Cookie Monster uses the **simultaneous equation method**
- The **cost per unit of work** of **Mixer** and **Oven** was **11.75 €** and **8.65 €**, respectively

6.1) Calculate the **Costs of Goods Manufactured** of **Chocolate Cookies**.

ANSWER ON PAPER

Answer on Paper

6.2) Calculate the **Manufacturing costs directly assigned** to **Cleaning**.

ANSWER ON PAPER

Answer on Paper

1.1) (2 Points) Knowing that the unit selling price is 15 €, Prepare the P&L Account by Function (According Management Accounting).

COGM = MC – ΔWIP = 1 000 000 € - (155 000 € - 200 000 €) = 1 045 000 €
COGM/Unit = 1 045 000 € / 95 000 = 11 €
FG Opening = FG Closing - Production + Sales = 65 000 – 95 000 + 60 000 = 30 000
COGS = 30 000 * 10 € + 30 000 * 11 € = 630 000 €

P&L By Function	**Year N**
Sales	900 000 €
COGS	630 000 €
Gross Profit	**270 000 €**
Selling Costs	50 000 €
Administrative Costs	42 500 €
Operating Profit	**177 500 €**
Financial Costs	22 000 €
EBT	**155 500 €**

2.1) **(1.5 Points)** Compute the profit per client using the activity-based costing system (ABC).

Profit Client A = 50 000 € - (32 000 € + 300 * (20 € + 0.8 * 40 €) + 290 * 10 €) = - 500 €

Profit Client B = 20 000 € - (8 000 € + 100 * (20 € + 0.3 * 40 €) + 30 * 10 €) = 8 500 €

2.2) (1.5 Points) Compute the profit per client based on the traditional costing system used by Amazen.

SOR = (400 * 20 € + (0.8 * 300 + 0.3* 100) * 40 € + 320 * 10 €) / 40 000 €

= 0.55 $€_{OH}/€_{COGS}$

Profit Client A = 50 000 € - 32 000 € * (1 + 0.55) = 400 €

Profit Client B = 20 000 € - 8 000 € * (1 + 0.55) = 7 600 €

2.3) (1 Point) Comment the different results obtained in the previous questions. Suggest a measure that Amazen can take to improve profitability, **based on the implementation of ABC**. (100 words)

Answer should/may include the following topics (not exclusive):

- The allocation proportionally to Cost of Sales overestimates the profit of client A, since his consumption of overheads is disproportional to the cost of sales, namely the client support phone calls and urgent orders. Consequently, it underestimates the profit of client B.
- Results under ABC are more precise given the cause-effect allocation.
- Amazen might start charging a fee for urgent shipments/client support phone calls
- Amazen might limit the % of urgent orders or the number of phone calls per order made that are free, being charged after a certain threshold.

4.1) (3 Points) Assuming the company uses **<u>Variable Costing</u>**, prepare the Profit and Loss Account by Function using the Contribution Margin Format.

COGM VC	**Product A**	**Product B**	**Total**
Direct Materials	1 800 €	1 215 €	3 015 €
Direct labor	900 €	2 025 €	2 925 €
Man. Overheads (Var)	960 €	960 €	1 920 €
COGM	**3 660 €**	**4 200 €**	**7 860 €**
COGM unit	*12.2 €*	*15.6 €*	

P&L CM Format	**Product A**	**Product B**	**Total**
Sales	17 050 €	20 250 €	37 300 €
COGS	3 355 €	4 200 €	7 555 €
Gross margin	**13 695 €**	**16 050 €**	**29 745 €**
Non-Manuf. Var C	852.5 €	1 012.5 €	1 865 €
Contribution Margin	**12 842.5 €**	**15 037.5 €**	**27 880 €**
MFC			4 600 €
NMFC			13 927 €
Operating Profit			**9 353 €**

5.1) (1.25 Points) Compute the value of the Other Operating Costs generated in this period by the Abnormal Losses.

Expected Production = 100 000/5 * 0.5 = 10 000
COGM per Unit = 20 000 €/ 10 000 = 2 €
Abnormal Losses (Units) = 10 000 – 8 500 = 1 500
Other Operating Costs = 1 500 * 2 € = 3 000 €

5.2) (0.75 Points) Knowing that the selling price is 2.5 €, calculate the Cost of Sales and the Operating Profit. If you didn't answer 5.1, consider Other Operating Costs of 2 000 €.

Sales = 2.5 € * 8 500 = 21 250 €
COGS = 2 * 8 500 = 17 000 €
Other Operating Costs = 3 000 €
Operating Profit = 21 250 € - 17 000 € - 3 000 € = 1 250 €

6.1) (1.5 Points) Calculate the Costs of Goods Manufactured of Chocolate Cookies.

$COGM_{Choc}$ = 35 * 475 € + 55 000 € + 3 500 € + 950 * 11.75 € + 850 * 8.65 €
= 71 625 € + 3 500 € + 11 162.5 € + 7 352.5 €
= 93 640 €

6.2) (1.5 Points) Calculate the Manufacturing costs directly assigned to Cleaning:

11.75 € * 2 180 = 21 706 + 180 M + 400 C
8.65 € * 1 800 = 12 309 + 220 M + 200 C
⇔ C = 5.25 €/Lh; M = 10.05 €/Lh

Total Cost of Cleaning = 5.25 € * 800 = 4 200 €

Maintenance to Cleaning = 1 005 €

Costs directly assigned to cleaning services = 4 200 € – 1 005 € = 3 195 €