Group 1: Multiple Choice, 6.3 points, 0.7 each

0.7 points per question.

There is only one correct answer

Calculator

Question 1.

PaperSmart company produces drawing books. The following information concerning November year N is available:

	Manufacturing costs	Selling costs	Administrative costs	Financial costs	Total
Costs: Miscellaneous costs	45.000 €	8.000 €	4.000 €		57.000 €
Personnel costs	28.000 €	10.000 €	7.000 €		45.000€
Depreciation	10.000 €	4.000 €	2.000 €		16.000 €
Financial costs				500 €	500 €
Total	83.000 €	22.000 €	13.000 €	500 €	118.500 €
Revenues: Sales					180.000 €
Financial Revenues					150 €

Inventory of Direct Material:
- Opening: 1.000 units at 5€/unit
- Purchases: 2.000 units at 6,5€/unit
- Consumption: 2.500 units

Inventory of Finished Goods:
- Opening stocks: 100 units at 101€/unit
- Production: 1.500 units
- Sales: 1.200 units

Knowing that the company uses Weighted Average Cost (WAC), how much is Profit Before Taxes?

- (●) 63.575€
- ( ) 61.650€
- ( ) 45.817€
- ( ) 62.800€
- ( ) None of the others

Question 1. Justify you answer

DM (WAC) = (1000*5+2000*6.5)/3000 = 6

COGM = 83000 + 6*2500 = 98000

FG (WAC) = (100*201 + 98000)/1600 = 67.5625

COGS = 67.5625*1200 = 81075

Profit = 180000+150-81075-22000-13000-500 = 63575€

19 / 10000 Word Limit

Section 2

Group 1: Multiple Choice, 6.3 points, 0.7 each

Question 2 out of 8

Calculator

Question 2.

Company BelowHead (BH) operates 2 departments (D1 and D2) and it produced 2 different products (A and B). We know the following information regarding the month of February

- Manufacturing Overheads in February: 120.000€

	Product A	Product B	Total	Manufacturing OH
D1	3.000 Mh	7.000 Mh	10.000 Mh	56.000€
D2	400 DLh	600 DLh	1.000 DLh	64.000€
Production	400 units	800 units	1.200 units	-------

If the company uses multiple departmental overhead rates to allocate MOH to products:

- ○ Overhead Rate for D2 is 5.6€/Mh
- ○ Overhead Rate for D1 is 64€/DLh
- ◉ MOH allocated to Product A are 42.400 €
- ○ MOH allocated to Product B are 80.000 €
- ○ None of the other options is true

Question 2. Justify your answer

B I U á

D1 = 56000/10000 = 5.6

D2 = 64000/1000 =64

A = 5.6*3000 + 64*400 = 42400

10 / 10000 Word Limit

Group 1: Multiple Choice, 6.3 points, 0.7 each

Question 3 out of 8

Calculator

Question 3.

The following information for the month of October concerning the WILDTEXT Company was available:

Profit & Loss Account according to Financial Accounting

	Manufacturing Costs	Selling Costs	Administrative Costs	Financial Costs	Total
Purchase of Direct Materials					22.500 €
Costs: Miscellaneous	7.000 €	8.725 €	2.000 €		17.725 €
Salaries & Wages	15.600 €	9.100 €	7.800€		32.500 €
Depreciation	8.000 €	3.000 €	3.000 €		14.000 €
Financial Costs				875 €	857 €
Total	**30.600 €**	**20.825 €**	**12.800 €**	**875 €**	
Revenues: Sales					90.000 €

Inventories:

	Opening Stock	Closing Stock
Direct Materials	0 €	1.500 €
Work-in-progress	1.000 €	8.600 €
Finished Goods	--------	100 units

- Includes 30% of social charges paid during the month.
- Theoretical social charges are 80%.
- **Profit was 0€** in the Profit & Loss of October according to Management Accounting (P&L by Function).
- The company produced 5.000 units in October

Question 3.1. The Cost of Goods Sold was:

- ○ 50.000€
- ◉ 49.000€
- ○ 44.000€
- ○ 30.600€

- ○ 43.120€
- ○ None of the others

Question 3.1 Justify your answer

DM = 22500-1500 = 21000

COGM = 15600/1.3 * 1.8 + 7000 + 8000 + 21000 + 1000 - 8600 = 50000

COGMun = 50000/5000 = 10

COGS = 4900*10 = 49000

18 / 10000 Word Limit

Question 3.2. According to Financial Accounting, the profit generated in October was:

- ○ - 12.500€
- ○ + 0€
- ○ + 6.000€
- ◉ + 12.500€
- ○ - 6.000€
- ○ None of the others

Question 3.2. Justify your answer

Profit = 90000 + 8600 - 21000 - 17725 - 32500 - 14000 - 875 = 12500

Profit FA > Profit MA , as social charges (30%) are lower than TSC (80%)

23 / 10000 Word Limit

Group 1: Multiple Choice, 6.3 points, 0.7 each

Calculator

Question 4 out of 8

Question 4.

Company Bull&Bear is currently projecting its sales for the upcoming year. Under the most likely scenario, sales will amount to 500.000€. Under a bull (more optimistic) scenario, sales will increase by 20.000€ and under a bear (more pessimistic) scenario, sales are expected to decrease by 10.000€.

The Contribution Margin ratio (CM%) will also vary depending on each scenario, as sales increase generates economies of scale in the usage of direct materials.

	Most Likely	**Bull**	**Bear**
CM (%)	60%	65%	55%

Knowing that fixed costs amount to 200.000€ in any given scenario, what is the difference in profits between the Bull and the Bear scenarios?

- ○ 138.000€
- ○ 70.500€
- ○ 130.500€
- ○ 65.000€
- ◉ 68.500€
- ○ None of the others

Question 4. Justify your answer

B I U á

Bull: 520000*0.65 - 200000 = 138000

Bear: 490000*0.55 - 200000 = 69500

Dif = 68500

10 / 10000 Word Limit

Section 5

Group 1: Multiple Choice, 6.3 points, 0.7 each

Question 5 out of 8

Calculator

Question 5.

Golden Incorporated manufactures gold engagement rings. The P&L for the month of October 2021, using Variable Costing is as follows:

Sales	500.000 €
COGS	200.000 €
Gross Margin	300.000 €
Under Recovery of Overheads	45.000 €
Non-Manufacturing Costs	32.500 €
Profit Before Taxes	222.500 €

Other information available:

Budgeted Activity	25.000
Opening stock of Finished Goods	320
Units Sold	20.000
Production	24.000
Inventory Valuation Method	LIFO
Selling Price per unit	25 €
Difference in Profit between Variable and Total Full Costing	7.500 €

How much is the Profit Before Taxes with Full Costing Based on Budgeted Activity:

- ○ 222.500 €
- ◉ 229.700 €
- ○ 215.000 €
- ○ 283.200 €
- ○ None of the others

Question 5. Justify your answer

COGM = 10*24000 + 45000*(24000/25000) = 283200
COGMun = 283200/24000 = 11.8

COGS= 11.8*20000 = 236000
URO = 45000*(1-24000/25000) = 1800
Profit = 500000 - 236000 - 1800 - 32500 = 229700

18 / 10000 Word Limit

Group 1: Multiple Choice, 6.3 points, 0.7 each

Question 6 out of 8

Calculator

Question 6.

Which of the following is true about budgets?

- ○ A. Budgets are financial plans for the future
- ○ B. Budgets identify objectives and the actions needed to achieve them
- ○ C. Budgets should be tightly linked to the strategic plan
- ◉ D. A, B and C are true.
- ○ E. Only B and C are true.
- ○ F. None of these are true

Group 1: Multiple Choice, 6.3 points, 0.7 each

Question 7 out of 8

Calculator

Question 7.

The Blue Engine Company manufactures two goods, J1 and J2. Some information is provided below.

	J1	J2
Annual production/sales (Quantities)	900	100
Direct material costs per unit	100 €	?
Direct labor cost per unit – Variable cost	20 €	20 €
Manufacturing fixed cost per unit	110 €	110 €
Non-manufacturing variable costs	50 €	70 €
The unit selling price	500 €	900 €

The manufacturing fixed costs are allocated to the products according to production.

The non-manufacturing fixed costs are 11.450€

Knowing the BEP in euros is 189.000€, the Direct Material cost per unit of J2 is:

- ○ 90 €
- ◉ 310 €
- ○ 110 €
- ○ 210 €
- ○ 290 €
- ○ None of the others

Question 7. Justify your answer

BEP = (11450 + 110*900 + 110*100) / CM% = 189000 => CM% = 0.6426

CM% = CM/(500*900+900*100) = 0.6426 => CM= 347000

CM = 900*(500-100-20-50)+100*(900-DMJ2-20-70) = 347000 => DMJ2=310

20 / 10000 Word Limit

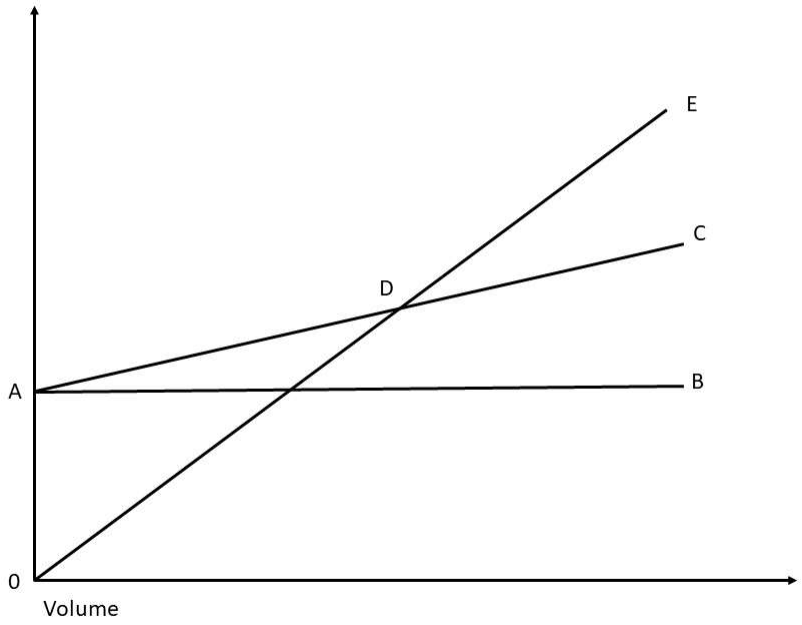
Group 1: Multiple Choice, 6.3 points, 0.7 each

Question 8 out of 8

Calculator

Question 8.

Refer to the figure presented below and to the Cost-Volume-Profit analysis.



The difference between line AB and line AC (area BAC) is the:

- ○ Contribution Ratio
- ◉ Total Variable Cost
- ○ Contribution Margin Per Unit
- ○ Total Fixed Cost
- ○ Total Contribution Margin
- ○ Profit

Question 8. Justify your answer

AB = total fixed costs

AC = Total Costs

Total costs - total fixed costs = total variable costs

15 / 10000 Word Limit

Group 2: Long Questions, 13.7 points

Calculator

Question 1 of 4. [4 points]

The MARINHAGRANDE Company manufactures moulds of pieces to automobile industry, **by order.**

The manufacturing process can be described as follows:

- The pieces are designed and manufactured in the **Moulds** cost centre (unit of work: DLh).
- After, at the **Polish** cost centre (unit of work: Mh), the pieces are adjusted to the right specifications.

There are also three service cost centres: **Cleaning** (unit of work: DLh), **Maintenance** which allocates the costs **only** to the production centres and Cleaning in equal parts; **General Manufacturing Overheads** that gives 90% of the activity to Moulds and 10% to Maintenance.

For the month of December, we know the following:

The **Orders No 001 and No 002** were started and finished during the period.

Only the finished order **No 002** was invoiced to the customers by 30.000 €.

Materials used in the production:

	Order No 001	Order N0 002
Iron	2.500 €	-
Steel	-	3.000 €

Conversion Costs divided by the cost centres (in Euros):

Costs	**Moulds**	**Polish**	**Cleaning**	**Maintenance**	**GMO**
Miscellaneous Costs	5.000 €	1.250 €	800 €	400 €	700 €
Wages	4.950 €	2.700 €	1.100 €	2.100 €	2.000 €
Depreciation	3.000 €	6.000 €	100 €	200 €	300 €
Total	**12.950 €**	**9.950 €**	**2.000 €**	**2.700 €**	**3.000 €**

The activities of the homogeneous cost pools:

	Suppliers		
Users	**Moulds**	**Polish**	**Cleaning**
Order No 001	500	2.000	-
Order No 002	1.500	4.000	-
Moulds	-	-	450
Polish	-	-	550
Total	**2.000 DLh**	**6.000 Mh**	**1.000 DLh**

Knowing that the company uses the Homogeneous Cost Pools method with the most accurate method to allocate the costs of service centres:

1.1. Compute de Cost of each DLh of the Cleaning department.

GMO = 3000

Maint = 2700+0.1*GMO = 3000

Cleaning = 2000 + 1/3Maint = 3000 ; per DLh = 3000/1000 = 3

13 / 10000 Word Limit

1.2. Knowing that the unit DLh cost of Moulds is 9€, calculate the Gross Profit of MARINHAGRANDE Company.

Moulds = 2000*9 = 18000

Polish = 9950 + 550*3 + 1000 = 12600 ; per Mh = 12600/6000 = 2.1

Profit = 30000-3000-1500*9 - 4000*2.1 = 5100

16 / 10000 Word Limit

1.3. If MARINHAGRANDE Company decides to use the Direct Allocation Method in the Homogeneous Cost Pool, what will be the Total Cost of Maintenance and Moulds:

Maint = 2700

Moulds = 12950 + 450*2000/1000 + 2700/2 + 3000 = 18200

8 / 10000 Word Limit

Group 2: Long Questions, 13.7 points

Calculator

Question 2 of 4. [4 points]

The Ultimate Fighting Game (UFG) Company manufactures three different models of Boxing Gloves: Amateur, Pro and SuperPro. **Each model is produced in batches of 100 units.** The following information is known concerning year N.

	Amateur	Pro	SuperPro	Total
Production and Sales	20.000 units	5.000 units	500 units	25.500 units
Selling Price (per unit)	50 €	100 €	500 €	
Direct Material Costs	360.000 €	180.000 €	70.000 €	610.000 €
Manufacturing Overheads				854.000€

A new intern advised the management of UFG to implement the activity-based costing system (ABC) in order to improve costing accuracy. To supplement his claim, the intern gathered the following data after conducting several inquiries with the relevant personnel:

Activities	Cost Driver	Manufacturing Overheads	Amateur	Pro	SuperPro
Machine Setups	Number of batches	127.500 €			
Operating machinery	Machine hours	500.000 €	30.000 hours	10.000 hours	10.000 hours
Handmade stitching	Labour hours	200.000 €	0 hours	0 hours	10.000 hours
Packaging	Units produced	12.750 €			
Testing	Number of inspections	13.750€	1 inspection per batch	5 inspection per batch	20 inspections per batch
Total		**854.000 €**			

2.1. Determine the gross profit of each model if Manufacturing Overheads are assigned to products using a blanket overhead rate based on direct material costs

SOR = 854000/610000 = 1.4

Amateur = 50*20000 - 360000 - 1.4*360000 = 136000

Pro = 100*5000 - 180000 - 1.4*180000 = 68000

SuperPro = 500*500 - 70000 - 1.4*70000 = 82000

18 / 10000 Word Limit

2.2. Compute the COGM per unit for the "SuperPro" model, if the company uses the ABC method when assigning manufacturing overheads to products

Activities	////// **CDR**
Machine Setups	/// 500
Operating machinery	/// 10
Handmade stitching	/// 20
Packaging	/// 0.5
Testing	/// 25

COGM = 70000+ 500*5 + 10000*10 + 10000*20 + 0.5*500 + 20*5*25 = 375250

COGM un = 375250/500 = 750.5

27 / 10000 Word Limit

2.3. Given the results obtained in the previous two questions, reflect on the importance of ABC for The UFG Company. What could be the implications of adopting the blanket overhead rate method based on DM costs instead of ABC?

Profit (ABC) = 500*500 - 375250 = -125250

Profit (SOR) = 82000

From the results of the previous two questions, it is possible to see that with ABC, superpro yields a loss, while with SOR, it yields a profit.

An inaccurate costing system, such as SOR is leading to undercosting of superpro, which consumes higher level of resources. There is cross-subsidization between the different products.

If company opts for ABC, it will probably change current product mix and pricing of products, based on more accurate costing.

82 / 10000 Word Limit

Section 11

Group 2: Long Questions, 13.7 points

Calculator

Question 3 of 4. [3 points]

CookNature is a company that produces and sells healthy meals. Below you can find the P&L for the month of November year N, using Variable Costing.

Description	Amount in €
1. Sales	120.000 €
2. Cost of Sales	55.000 €
3. Gross Margin	65.000 €
4. Non-Manufacturing Variable Costs	1.000 €
5. Contribution Margin	64.000 €
6. Fixed Costs - Under Recovery of Overheads	18.500 €
- Non-Manufacturing Fixed Costs	15.000 €
7. Operating Profit	30.500 €

The unit selling price is 12€ per meal.

3.1. Calculate the break even point in units

Qt sold = 120000/12 = 10000

BEPun = (18500+15000)/(64000/10000) = 5235

7 / 10000 Word Limit

3.2. Calculate how much, in percentage, sales are above de break-even point.

MOS = (10000-5235)/5235 = 91%

3 / 10000 Word Limit

3.3. Based on the break-even point concept, and assuming Sales = 135.000 €, determine the operating profit for the month.

BEP€ = 5235*12 = 62820

Profit = (135000-62820)*(64000/120000) = 38496

6 / 10000 Word Limit

Group 2: Long Questions, 13.7 points

Calculator

Question 4 of 4. [2.7 points]

In the land of "Far-Far-Away", there is a very famous entrepreneur called Shrek. Shrek has a jam factory where he produces 3 different types of jams, that he sells in small jars: the "Swamp Jam", the "Dragon Jam" and the "Farquaad Jam". Regarding the production of the jams, we know the following:

- Each jar of Swamp Jam requires 2 units of material X
- Each jar of Dragon Jam requires 2,5 units of material Y
- Each jar of Farquaad Jam requires 2 units of material Y
- Each month, the company receives 1.160 units of material X and 580 units of material Y.
- Supplies of materials follow a monthly supply contract, which cannot be changed in the short term, as such for each month, it is not possible to acquire more or less direct materials than received.
- Shrek's Company has a total of 1.000 Mh available
- Total Fixed Costs are 1.000 €

	Swamp Jam Jar	Dragon Jam Jar	Farquaad Jam Jar
Selling Price	10 €	7 €	5 €
Variable Cost per unit	1 €	2 €	1,5 €
Mh required per unit	2,5	2	1
Total Demand	80	200	100

4.1. What is the optimal sales mix of jams that maximizes Shrek's profits?

=> SCARCE RESOURCE:

MH = 2.5*80 + 2*200 + 1*100 = 700 < 1000 (There are enough MH available)

Materials:

X = 80*2 = 160< 1160

Y = 2.5*200 + 2*100 = 700 > 580 !!! RESTRICTION IS MATERIAL Y !!!

=> CM / scarce resource

CM(D) = (7-2)/2.5 = 2 =>1st

CM(F) = (5-1.5)/2 = 1.75 => 2nd

=> MIX

SWAMP = 80un

DRAGON = 200un

FRAQUAAD = 40un

51 / 10000 Word Limit

4.2. To expand its business, Shrek goes to the local market to shop around for innovations. In fact, he meets Donkey. Donkey is an expert in crafting jams and has an incredible ability – he can put together 2 units of material X, modify those, and create 1 unit of material Y. Additionally, by hiring Donkey, there is an incremental demand for Swamp Jam Jars of 250 units. What is the impact on profit if you hire Donkey and he requires a fixed compensation of 500€/month?

=> SCARCE RESOURCE:

MH = 2.5*(80+250) + 2*200 + 1*100 = 1325 > 1000 !!! RESTRICTION IS MH !!!

=> CM/Scarce resource

CM (S) = (10-1)/2.5 = 3.6 - 1st

CM (D) = (7-2)/2 = 2.5 - 3rd

CM (F) =(5-1.5) /1 = 3.5 - 2nd

=> MIX

SWAMP = 330un

FARQUAAD = 100un

DRAGON = 37un

Profit 1) = 80-9 + 200*5 + 40*3.5 - 1000 = 860 |||| Profit 2) = 330*9 + 100*3.5 + 37*5 - 1000 - 500 = 2005

Dif in profit = 2005-860 = 1145 increase

61 / 10000 Word Limit