NOVA SCHOOL OF BUSINESS & ECONOMICS

1202 – Management Accounting

Spring 2021/2022

Final Exam – Version A

May 30th, 2022 Student Number:_____

Student Name:_____

DIRECTIONS:

The questions must be answered in the space provided in the exam sheets.
You are required to keep the answer sheets stapled.
Close-book exam. Only basic or scientific calculators allowed.
Use 4 decimals in the intermediate calculations.

QUESTION 1 – MULTIPLE CHOICE

(6.5 marks)

- You are required to **show the supporting calculations** to numerical questions, otherwise it will **not be marked**.
- Unclear answers will not be marked.
- There is only one correct answer to each question. No penalties for wrong answers.

1. The following information for the month of January concerning the **Fixed and Repair Company** was available:

Profit & Loss Account according to Financial Accounting

(Euros)

	Manuf. costs	**Selling costs**	**Administ. costs**	**Financial costs**	**Total**
Direct materials used					20.000
Costs:					
Miscellaneous costs	5.000	2.000	1.500		8.500
Wages	11.700	6.500	7.800		26.000
Depreciation	8.000	3.000	3.000		14.000
Financial costs				2.000	2.000
Total	24.700	11.500	12.300	2.000	70.500
Revenues:					
Sales					103.000

The wages include 30% of social charges paid during the month. Theoretical social charges are 60%.

Answer to the following knowing that the company started the activity in January and the Production was 7.000 units.

i. The cost of goods manufactured are:
   A. 70.500€
   B. 47.400€
   C. 42.900€
   D. 44.700€
   E. None of the others

Answer:

ii. Under the Financial Accounting P&L, the result obtained by the company would be _____ to that obtained by the Management accounting P&L.
   A. Higher by 7.800€
   B. Higher by 3.510€
   C. Higher by 2.700€
   D. Higher by 6.000€
   E. None of the others

Answer:

2. The **Company Sun & Sea** presented the following information:

- Opening inventory 1,000 units
- Closing inventory 6,000 units
- Direct labour cost (variable) per unit €40
- Direct material cost per unit €20
- Variable manufacturing overhead per unit €10
- Fixed overhead per unit (using total full costing) €30
- Variable distribution costs per unit €5
- Variable administrative costs per unit €1
- Fixed distribution costs per unit €10
- Fixed administrative costs per unit €4
- Actual production /Practical capacity = 80%
- LIFO is the method to calculate the cost of sales

i. Under the full costing based on practical capacity system, the result obtained by the company would be _____ compared to that obtained by the total full costing system.

A. Lower by €30,000
B. Higher by €30,000
C. Lower by €120,000
D. Higher by €120,000
E. None of the others

Answer:

ii. Under the variable costing system, the result obtained by the company would be _____ compared to that obtained by the total full costing system.

A. Lower by €175,000
B. Lower by €180,000
C. Lower by €150,000
D. Higher by €150,000
E. None of the others

Answer:

3. The **FASHION Company** manufactures Product A. Its expected contribution margin for January was as follows:

DESCRIPTION		Euros
Sales	200 units at 100 € each	20.000
Cost of sales		
- Direct Material X	20 units at 300 € / unit	6.000
- Direct material Y	1.000 kg. at 1 € / kg	1.000
- Variable conversion costs	1 500 Mh at 5 € / Mh	7.500
Total contribution margin		5.500

Actual information for the month of January:

- ✓ Sales of 250 units of Product A at 95 € per unit.
- ✓ The company used 25 ton. of Direct Material X at 310 €/ unit.
- ✓ The company used 1.000 kg. of Direct Material Y at 1,10 € each kg.
- ✓ The variable conversion costs were 8.000 € and corresponded to 2.000 Mh.

i. The sales price variance is:

A. 1.000€ unfavorable
B. 1.250€ unfavorable
C. 5.500€ unfavorable
D. 6.875€ unfavorable
E. None of the others

Answer:

ii. Sales margin volume variance

A. 5.000€ favorable
B. 1.000€ favorable
C. 1.375€ favorable
D. 2.750€ favorable
E. None of the others

Answer:

iii. Direct Materials Y usage variance

A. 0€
B. 250€ favorable
C. 275€ favorable
D. 275€ unfavorable
E. None of the others

Answer:

4. When a company sets up its budget using a bottom-up strategy, there are some advantages and disadvantages. One of these occurs when low management sets the budget bellow what would be realistic in order to be sure that the objectives (and bonuses) are attained. This "scheme" is also called:

A. Managerial corruption
B. Zero-based budgeting
C. Budgetary slack
D. Fraudulent internal planning
E. None of the others

Answer:

5. In year t, Company X sold 1000 units of product Y. Fixed costs were 400 000 €.
Product Y uses 1 unit of Z to be produced, that costs 50€. Knowing that the company wants to increase sales to 1500 units in year t+1 to attain a target an operating profit of 100 000€, what will be the contribution margin of Company X in year t+1? (Assume fixed costs will be the same as in t+1).

A. 100 000
B. 150 000
C. 200 000
D. 300 000
E. 450 000
F. 500 000
G. None of the others

Answer:

QUESTION 2

The company «**Just Hospital and Disease**» provides two types of treatments to patients: haemodialysis treatments (HD) and peritoneal dialysis treatments (PD). The analysis of their indirect costs allowed us to find three fundamental activities responsible for them:

Activity	Cost driver	Total cost
Operate the machines (A1)	No. of machine hours	800.000 €
Patient registration (A2)	No. of patients	120.000 €
Prescription of treatments (A3)	Number of hours of doctors	450.000 €

For the period under review, the following information is known:

	HD	**PD**
Number of treatments	4.500	15.500
Number of hours of doctors	260	40
Number of patients	1.800	3.000
Machine hours	18.000	22.000

Medicines, Miscellaneous Materials (pills, syringes, etc.) and others are the direct costs of the treatments:

HD	**PD**
15.000€	197.500€

1. Calculate the unit cost of each haemodialysis (HD) treatment, knowing that the company uses activity-based costing.

Costs	**HD**
Direct costs	15 000,00 €
Operate the machines (A1)	360 000,00 €
Patient registration (A2)	45 000,00 €
Prescription of treatments (A3)	390 000,00 €
Total Costs	810 000,00 €
Unit Cost	180,00 €

2. If the company uses as a single overhead rate the value of direct costs, to apportion the indirect costs, what would be the cost of each peritoneal dialysis (PD) treatments?

Costs	**PD**
Direct costs	197 500,00 €
Indirect Costs	1 273 294,12 €
Total Costs	1 470 794,12 €
Unit Cost	94,89 €

Na questão 3 e 4 colocava menos linhas, porque muitos alunos tendem a escrever demasiado, e penso não ser o que pretendemos. Também cotava estas 2 questões com muito poucos «valores».

3. What is the main advantage of using activity-based costing versus single overhead rate to allocate indirect costs?

More accurate costs

4. Imagine that the company opts for the single overhead rate. What basis would you advise the company to adopt? Why?

The machine hours.

QUESTION 3

The **Little Value Company**, is dedicated to the manufacture of 2 Products: A and B.

Product A has little added value despite having a lot of demand in the market; while Product B has a high added value but with a lower demand.

Each product is manufactured in independent business units.

Product A can be used as a direct material for the manufacture of Product B, although until now, there have been no commercial relations between the two internal business units.

Production is equal to Sales, with 5 000 units produced of Product A and 2 000 units of Product B.

To produce one unit of Product B, one unit of direct material is required of Product A.

The business unit that manufactures product A is using 100% of its normal production capacity.

In annual terms, the consolidated results for this year are estimated at 60 000€, as shown in the following table:

	Product A	**Product B**	**Total**
Sales	500 000 €	700 000 €	1 200 000 €
Cost of Sales	375 000 €	400 000 €	775 000 €
Gross Margin	125 000 €	300 000 €	425 000 €
Non- Manufacturing Variable Costs	25 000 €	40 000 €	265 000 €
Contribution Margin	100 000 €	260 000 €	360 000 €
Under-recovery of Overheads			200 000 €
Non- Manufacturing Fixed Costs			100 000 €
Operating Profit			60 000 €

1. Calculate the break-even point in units for Product A and B, knowing that the sales mix is maintained.

Fixed Costs	300 000,00 €
unit contribution (average)	51,43 €
BEP (Units)	5833,333333
BEP - Product A - Units	4166,666667
BEP - Product B - Units	1666,666667

2. The external demand for Product A is 5 000 units and the Variable Non-Manufacturing Costs refer to transportation costs to the External Customer.

   The General Manager of the Company said that the company should decrease the sales of 2 000 units for the external market and sell internally at the same market price, because this would allow the company to increase the operating profit to 85 000€, instead of 60 000€.

   Do you agree with the General Manager? Explain your answer and support your argument with calculations.

   No, because the 25.000€ of non-manufacturing costs are related 5.000 units, not 2.000 units.

   This means that the profit will only increase in 10.000€

3. It is possible to increase the production capacity of the business unit that manufactures Product A by 2 000 units with a more sophisticated technology. This would allow the company to satisfy all the demand. This technology requires an annual increase in fixed manufacturing costs of 90 000€, but allows reducing the unit manufacturing variable costs of the total production by 5€ each. This means that the unit manufacturing variable cost will be 70€ if the technology is implemented.

   In this scenario, do you agree that the General Manager should go ahead with the investment in the new technology? Support your answer with calculations.

Additional revenues	200 000,00 €
Additional cost of sales	115 000,00 €
Additional fixed costs	90 000,00 €
Additional profit	-5 000,00 €

Should refuse the investment

QUESTION 4

The REPLACE Company buys vintage baking machines which produce bread and cakes, repairs them and after sells them in speciality outlets. The company also provides maintenance and repair services for the same type of machines without buying them.

Imagine now that customer A asks the REPLACE Company to repair one of these machines, for which customer A is willing to pay a maximum of 7.100€.

The REPLACE Company has 3 alternatives to meet this demand from customer A:

Alternative 1: Repair the damaged machine, which will require:

- To purchase some pieces in the market for 2.000€ in total
- To subcontract workers for one month to do this service at a total cost of 3.000€
- To allocate some workers that belong to the payroll of the company to also participate in this repair service; these workers are right now without activity but earning 5.000€ per month
- To shift a very specialized worker who is currently working in a machine for customer B to the service required by customer A. This implies that The REPLACE Company will have to compensate customer B with 2.000€ due to the delay in repairing his machine. The situation is explained to customer B who accepts this compensation and the delay in being serviced.

Alternative 2: Exchange the damaged machine of customer A by another machine that is in the warehouse of the REPLACE Company. This machine was delivered by the courts to the REPLACE Company to pay a debt of 10.000€ from one of its broken customers. The market value of this machine is only 5.800€. To be able to exchange the machines, the REPLACE Company has only to install a new piece costing 3.000€ in the machine that is in the warehouse. This installation will be done by the workers that are without activity in the company. The value of the damaged machine from customer A is 1.900€.

Alternative 3: Not accept customer A's demand.

Which of the three alternatives must the REPLACE Company choose? Show your calculations and justify your answer.

Alt 1: 2.000€ + 3.000€ + 2.000€ = 7.000€

Alt 2: 5.800€ + 3.000€ - 1.900€ = 6.900€

Alt 3: 7.100€

QUESTION 5

The Alfa Company is preparing its budget for **year n**.

A) Regarding **year n – 1,** we have the following elements:

- The sales from year n–1 to be collected by the company in year n are 15.000€
- The company has to pay 2.000€ from purchases done in n-1 to its suppliers in year n.
- The closing stock of finished goods is 1.200€, represented by 30 units.
- There are no direct materials in stock at the end of year n -1.
- The value in Cash at the end of year n -1 is 5.000€.

B) Regarding **year n**, we have the following elements:

- Sales budget

	First Half	Second Half
Product P	48.000 €	80.000 €

- Direct materials purchases budget

	First Half	Second Half
Material M	13.700€	12.300 €

- The selling price per unit of Product P is 50€ and the purchasing price per unit of direct materials is 10€.
- The expected production will be 1.300 units in each half of year n, and the unit cost of goods manufactured determined through Variable Costing System is 35€.
- Direct materials usage: 1 unit of direct material per 1 unit of product P.
- The company estimates a negative cash balance of 20.000€ for the first half and a positive cash balance of 22.625 € for December/year N.

Financial information for year n:

- ✓ Sales collection period: 1,5 months.
- ✓ Suppliers' payment period: 2,5 months
- ✓ The remaining costs are paid in cash
- ✓ The minimum value in Cash at the end of each month will have to be 10.000€.
- ✓ The Company can borrow funds (loans) in the first day of each half year.
- ✓ The interest rate of the loans is 5% per year, paid each half year on the first day.
- ✓ If Cash Balance exceeds 10.000€, the excess will be used to repay the loans.
- ✓ Payment of interests will be done in the first day of the subsequent half year.

Eu cortava a questão 1 ou 3 (é indiferente). Cotava a questão que ficava com 75% da soma da cotação que estava a prever, para as duas questões juntas.

1. Knowing that the company uses the variable costing system and LIFO (cortava o critério valorimétrico; não por ser uma informação redundante, mas porque acho que está mesmo errado), calculate the value of the Finishing Goods in the budgeted Balance Sheet at the end of the year n.

Closing Inventories = 1.200€ + 2.600 units * 35€ - 2.560 units * 35€ = 2.600€

2. Calculate the value of Receivables from Clients in the budgeted Balance Sheet at the end of the year n.

+(80.000€/6 months) *1.5 months = 20.000€

3. Calculate the value of Direct Materials in the budgeted Balance Sheet at the end of the year n.

Closing Inventories = 0€ + (13.700€ + 12.300€) – 10€* (1.300 + 1.300) = 0€

4. The Financial Budget for year n.

Financial budget

	1st Half	2nd Half
1. Sources of Funds		
Cash in the beginning of the period	5 000,00 €	10 000,00 €
Positive cash balances		22 625,00 €
Short term loan	25 000,00 €	
Total 1	**30 000,00 €**	**32 625,00 €**
2. Uses of Funds		
Cash at the end of the period	10 000,00 €	10 000,00 €
Negative cash balances	20 000,00 €	
Payment of loan interests		625,00 €
Loan reimbursement		22 000,00 €
Total 2	**30 000,00 €**	**32 625,00 €**