

**ACCOUNTING, FINANCE AND CONTROL**  
**MULTIPLE CHOICE TEST (individual assignment)**  
**Call September 4<sup>th</sup>, 2019**

Please state in CAPITAL LETTERS your Name and Surname in the following spaces

<b>NAME</b>	
<b>SURNAME</b>	
<b>STUDENT ID</b>	

**Available Time: 50 minutes**

In taking multiple choice tests, you want to keep in mind the basics of test taking: read each question carefully, and have a systematic approach to the whole exam.

In the followings, two very well-known strategies for approaching multiple choice questions are reminded briefly.

Choose the Best Response

Many options in a multiple choice answer may have some truth to them. You want to identify the *best* response from the *good* responses. If you have eliminated other answer options and have narrowed it down to two, and both seem true, try to pick the answer option that is in some way better than one that is just good. Be sure to reread the question over when selecting the *best* answer. In case of doubts, state briefly your comments on your answer to help to get your point of view.

Mark Only “Sure Things” First, Make 3 “Passes” Through the Test.

Go through the test first and answer all the questions for which the answers come easily. For the questions that seem more difficult to eliminate as many options as you can. This will give you a head start for your second pass. You may come across another question that gives you a clue to the one that stumped you. On your second pass spend extra time to figure out the “best” of the rest of the answer options. On your third pass, take an educated guess at the ones that are still elusive because any answer is better than no answer. There are no penalties for wrong answers.

If you read the text above, turn the page and begin your test

### **MULTIPLE CHOICE TEST (individual assignment)**

# ANSWERS SHEET

***FILLING THIS SHEET IS MANDATORY FOR HAVING THE TEST CHECKED AND EVALUATED***

**Please state in CAPITAL LETTERS your Name and Surname in the following spaces**

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***For each question (1-10) indicate the right answer with the corresponding CAPITAL LETTER [A-B-C-D]. Please consider that only this answer sheet will be assessed.***

[illegible]

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1. Which one of the following sentences on “productivity indicators” is TRUE?

(2 Points)

- A. When outputs are diversified and not homogeneous, output indicators should be built upon physical quantities weighted through physical parameters
- B. Since they are ratio indicators, they are always independent from the variation of inputs mix
- C. When they are properly connected to the operationalization of a company’s strategic goals, they can be included in the enterprise’s Balanced Scorecards
- D. Since they are ratios, they are independent from the metrics used to measure inputs and outputs

2. During the last interim meeting, the CFO of Company A presented the rolling forecast document and pinpointed an increase of invested capital of 5% compared to the figure previously budgeted for the year 2019.

You know that figures budgeted at the beginning of the year were as follows:

- ROA (Return on Total Assets) = 3.15%
- ROE = 2.50%
- Invested Capital = 470 mln €
- WACC = 4.00%
- Third Part Liabilities = 200 mln €
- Financial Leverage (Considering Third Part Liabilities) = 0.50
- R&D cost that can be capitalized = 20 mln €

All the rest being equal, but the forecasted increase in invested capital, based on the available data, it is true that:

(4 Points)

- A. Due to the increase in invested capital, Residual Income in 2019 will decrease of 5% points as well, compared to the budget drafted at the beginning of the year
- B. Due to the increase in invested capital, Residual Income in 2019 will increase of 5% points compared to the budget drafted at the beginning of the year
- C. Based on the new available information Residual Income in 2019 will be negative and equal to -0.84 mln €
- D. Based on the new available information Residual Income in 2019 will be negative and equal to -9.74 mln €

*Solution*

*Based on the available data, we start calculating RI for 2018:*

- $Equity = Third\ Part\ Liabilities / Financial\ Leverage = 200\ mln\ € / 0.5 = 400\ mln\ €$
- $Total\ Assets = Third\ Part\ Liabilities + Equity = 200\ mln\ € + 400\ mln\ € = 600\ mln\ €$
- $Operating\ profit = ROA * Total\ Assets = 3.15\% * 600\ mln\ € = 18.90\ mln\ €$
- $RI_{2019}\ (first\ budget) = Operating\ profit - (Invested\ Capital * cost\ of\ capital) = 18.90\ mln\ € - (470\ mln\ € * 4.00\%) = 0.10\ mln\ €$
- $Invested\ Capital\ in\ 2019 = Invested\ Capital\ in\ 2018 * 1.05 = 470\ mln\ € * 1.05 = 493.5\ mln\ €$
- $RI_{2019}\ (second\ budget) = Operating\ profit - (Invested\ Capital_{2019} * Cost\ of\ Capital) = 18.90\ mln\ € - (493.5 * 4.00\%) = -0.84\ mln\ €$

3. Orbit is a company settled in Brussels that produces and sells satellites. They want to introduce a new material in their models, which will imply a transformation of their production process. The top management of the company will issue a new debt of 100 mln € to carry on the investment. Their current situation is as stated below:

<b>Equity</b>	350 mln€
<b>Financial Leverage (D/E)</b>	1.8
<b>Net Profit</b>	42 mln€
<b>Interest rate on Debt</b>	8%
<b>Tax rate</b>	35%

Orbit is not listed yet, but it's known that the asset beta (unleveraged beta) of the European-satellite industry is 0.55 and the Euronext N.V (European New Exchange Technology) return is 10% ( $r_f = 0.3\%$ ).

They forecast that the tax rate and the Equity will remain equal and estimate a new cost of debt of 9.5%. Which would be the new weighted cost of capital of the firm by issuing the debt? (use always two digits in computations) (4 points)

- A. 7.59%
- B. 8.33%**
- C. 12.91%
- D. There is not enough information to calculate how the new debt would affect the WACC

**Solution**

$$D_2 = 630 + 100 = 730$$

$$BL_2 = 0.55 (1 + (1.35) * (730/350)) = 1.30$$

$$K_{e2} = 0.3\% + 1.30 * (10\% - 0.3\%) = 12.91\%$$

$$WACC_2 = 12.91\% (0.32) + 9.5\% * (65\%) * (0.68) = 8.33\%$$

**Mistakes**

- A. WACC without considering the debt
- B. Correct**

- C. Considering new ke and not new WACC
- D. Not correct

4. Which ones of the following is NOT true regarding expense centers? (2 points)

- A. The resource consumption may not be related to the volume of production
- B. It is not easy defining an input/output relation using standard coefficients
- C. HR (Human Resources), ICT (Information and Communications Technology) and R&D (Research and Development) are examples of expense centers.
- D. Their output is easily quantifiable in monetary terms

5. Company XYZ Ltd would like to improve FCFE and at the same time protect against some account payables bearing a risk of insolvency. Which solution do you suggest to the company? Assume everything not stated to be constant.

(2 Points)

- A. Ask for a financial leasing
- B. Ask for a factoring with recourse
- C. Ask for a factoring without recourse
- D. None of the previous answers

6. Consider the following data about company HAL Ltd:

All data are in [k€] – Balance sheet data refer to the end of the year (final values)	2018 (actual)	2019 (budgeted)
Depreciation and Amortization	100	200
Account Receivables	75	100
Account Payables	100	50
Inventories	25	100
Repayment of Debt	-	1,300
Properties, Plants and Equipment	1,000	2,500
EBIT	2,500	3,000
Financial Expenses	200	200

The corporate tax rate is 30%. The budgeted Free Cash Flow to Firm and Free Cash Flow to Equity for 2019 are respectively 450k€ and -990k€.

How would FCFF and FCFE change if the company decided to ask for a bank loan of 5,000 k€ in 2019? Consider a bullet repayment of the loan after 5 years and a fixed interest rate of 10% (interests would be paid annually starting from 2019).

(4 Points)

- A. FCFF and FCFE would be respectively 450 k€ and 3,950 k€
- B. FCFF and FCFE would be respectively 450 k€ and 3,450 k€
- C. FCFF and FCFE would be respectively 450 k€ and 3,660 k€

D. FCFF and FCFE would be respectively 450 k€ and 4,010 k€

*Solution*

	[K€]
EBIT	3,000
+ Depreciation and Amortization	200
- Delta Net working capital	$(100-75) + (100-25) - (50-100) = 150$
- Delta CapEx	$(2,500+200) - 1,000 = 1,700$
- Taxes (EBIT)	$3,000 \cdot 0.3 = 900$
<b>FCFF</b>	<b>450</b>
- Net Financial Expenses	$200 \cdot (1-0.3) = 140$
- Delta Debt	1300
<b>FCFE</b>	<b>-990</b>

With the bank loan:

	[K€]
EBIT	3,000
+ Depreciation and Amortization	200
- Delta Net working capital	150
- Delta CapEx	1,700
- Taxes (EBIT)	900
<b>FCFF</b>	<b>450</b>
- Net Financial Expenses	$(200 + 0.1 \cdot 5,000) \cdot (0.7) = 490$
- Delta Debt	$1,300 - 5,000 = - 3.700$
<b>FCFE</b>	<b>3.660</b>

Wrong answers:

- A. Not considering the financial interest and the tax shield
- B. Not considering the tax shield
- D. Not considering the financial interest

7. A fundamental pre-requisite for a company to be a subsidiary company is that:

(2 points)

- A. the parent company owns more than 50% of the shares with voting rights
- B. the parent company owns less than 50% of shares, but more than the 20%.
- C. the parent company can exert a significant influence even if its “stake” (i.e., the percentage of shares owned) is lower than 20%
- D. none of the previous

8. Company ABC Ltd works in the batteries sector: it designs, manufactures and sells worldwide batteries for storage systems and electric vehicles. You have access to the following data from the last Annual Report

Company ABC (2018) [Data in mln €]	
Other operating income	700
Other operating expenses	1,000
Cost of Goods Sold	80,000
Selling and General Administrative Expenses	15,000
D&A of tangible, intangible and investment assets	10,000
Financial expenses	700
Financial incomes	500
Income Taxes	5,000
Net Profit	10,000

On the base of the AVAILABLE data, it is TRUE that:

(4 Points)

- A. EBITDA = 25,200 k€; EBIT = 15,000 k€
- B. Gross Profit = 30,000 k€; EBT = 15,200 k€
- C. Revenues = 110,500; EBT = 15,000 k€
- D. Revenues = 110,500 k€; Gross profit = 30,500 k€

*Solution (data in k€)*

*Based on the available data, EBIT, EBITDA and Gross Profit can be reconstructed starting from Net Profit.*

- $I \text{ (Financial Position)} = 700 \text{ mln€} - 500 \text{ mln €} = 200 \text{ mln€}$
- $EBT = \text{Net Profit} + \text{Income Taxes} = 10,000 \text{ mln€} + 5,000 \text{ mln€} = 15,000 \text{ mln€}$
- $EBT = EBIT - I \rightarrow EBIT = EBT + I = 15,000 \text{ mln€} + 200 \text{ mln€} = 15,200 \text{ mln€}$
- $EBITDA = EBIT + D\&A = 15,200 \text{ mln€} + 10,000 \text{ mln€} = 25,200 \text{ mln€}$
- $\text{Gross Profit} = EBIT + \text{Selling and General Administrative Expenses} + \text{Other operating Expenses} - \text{Other Operating Income} = 15,200 \text{ mln€} + 15,000 \text{ mln€} + 1,000 \text{ mln €} - 700 \text{ mln €} = 30,500 \text{ mln €}$
- $\text{Revenues} = \text{Gross Profit} + \text{Cost of Goods sold} = 30,500 \text{ mln €} + 80,000 \text{ mln €} = 110,500 \text{ mln €}$

**9. What is true regarding a Transfer Price Policy?**

**(2 Points)**

- A. If the selling business unit is operating at the full capacity and it is able to sell everything internally or externally it will not be willing to use full standard cost Transfer Price Policy
- B. The main reason for using Transfer Price Policy is to shift profits from one country to another country in order to increase overall pre-tax profits.
- C. The cost plus mark-up is the most useful method for setting a transfer price when very little value is added by the business unit selling the product on the market.
- D. A company that uses a separate Transfer Price Policy for each division in a single transaction is using a dual pricing policy.

**10. A young technology company has two products currently sold on the USA market and a patent on a technology that may or may not be viable yet. The technology market is expected to grow by 10% per year, while the tax rate is 32%. The company hopes to have positive net profit in 2019. An analysis of financial situation is summarized in the table below:**

<b>Technology company DATA 31st December 2018</b>		<b>€</b>
<b>INCOME STATEMENT</b>	<b>Revenues</b>	725,000
	<b>Operating expenses</b>	635,000
	<b>EBIT</b>	90,000
	<b>D&amp;A</b>	30,000
	<b>Finance Income</b>	0
	<b>Finance Expenses</b>	50,500
<b>BALANCE SHEET</b>	<b>Cash &amp; Cash Equivalent</b>	75,000
	<b>Patent Value</b>	800,000
	<b>Short Term Debt</b>	85,000
	<b>Long Term Debt</b>	900,000

**You have found out that the technology company had an additional invoice from spare parts' supplier for the cost of 120 K€ in 2018.**

**The following information concerning the company's competitors is also available:**



COMPANIES	Comparable 1	Comparable 2	Comparable 3
EV [€]	9,575,000	13,000,000	3,500,000
Revenues [€]	7,200,000	8,000,000	3,000,000
EBIT [€]	4,000,000	5,000,000	800,000
EBITDA [€]	4,500,000	6,000,000	1,300,000
PATENTS' VALUE	5,000,000	4,200,000	2,500,000

Using the relative valuation method the enterprise value of the young technology company is:  
(4 Points)

- A. 996,036 €
- B. 281,063 €
- C. 279,470 €
- D. 1,709,397 €

**Solution:**

COMPANIES	Comparable 1	Comparable 2	Comparable 3
EV [€]	9,575,000	13,000,000	3,500,000
Revenues [€]	7,200,000	8,000,000	3,000,000
EV/Revenues	1.33	1.63	1.17

The most appropriate multiple is EV/Revenue, as under valuation is young technology company that does not have anything positive a part of the revenue.

$$\text{AV. EV/Revenues} = (1.33 + 1.63 + 1.17) / 3 = 1.37$$

$$\text{EV} = 1.37 * 725,000 = 996,036 \text{ €}$$