ACCOUNTING, FINANCE AND CONTROL
WRITTEN TEST CALL 5 _ 1st September 2020

1. **Company A is an energy company, focused on renewables. Some reliable estimates for the years 2020, 2021, 2022 and 2023 are available and reported below (data in k€):**

   Year 1 (2020)
   - **FCFF: 50,000**
   - **Dividends paid: 0**
   - **Debt at the end of the year: 20,000**
   - **Financial Expenses (net of taxes): 1,120**

   Year 2 (2021)
   - **FCFF: 55,000**
   - **Dividends paid: 5,000**
   - **Debt at the end of the year: 20,000**
   - **Financial Expenses (net of taxes): 1,120**

   Year 3 (2022)
   - **FCFF: 57,000**
   - **Dividends paid: 0**
   - **Debt at the end of the year: 15,000**
   - **Financial Expenses (net of taxes): 840**

   Year 4 (2023)
   - **FCFF: 60,000**
   - **Dividends paid: 0**
   - **Debt at the end of the year: 15,000**
   - **Financial Expenses (net of taxes): 840**

   You also know that:

- **Debt at the end of 2019 was 10,000 k€;**
- **Cost of equity (ke) can be considered constant during these years;**
- **Reliable estimates can be made only up to 2023;**
- **TV_E (perpetuity with no growth) = 591,600 k€**

Considering the available data and using the DCF methodology, and rounding the calculations at the second digit, which is the EQUITY VALUE of Company A?

(5 Points)

A. EQUITY VALUE is around 576,839 k€
B. EQUITY VALUE is around 174,163 k€
C. EQUITY VALUE is around 809,680 k€
D. EQUITY VALUE is around 764,368 k€

Solution

The first step consists in calculating FCFE for all the 4 years as follows:

Year nr-->	*1*	*2*	*3*	*4*
Data in K€	**2020**	**2021**	**2022**	**2023**
FCFF	50,000	55,000	57,000	60,000
- Financial Expenses (net of taxes)	1,120	1,120	840	840
+ Delta Debt (debt $year_t$ – debt $year_{t-1}$)	10,000	0	- 5,000	0
- Dividends paid	0	5,000	0	0
FCFE	**58,880**	**48,880**	**51,160**	**59,160**

Then, FCFE for each year has to be actualized. To do so, ke is calculated as FCFE 2023 / TV_E = 59,160 / 591,600 = 10%.

The actualized FCFE are calculated applying = $FCFE_t/(1+ke)^t$

Data in K€	**2020**	**2021**	**2022**	**2023**
FCFE actual	53,527.27	40,396.69	38,437.27	40,407.08

Also the TV is discounted = 591,600 k€ / $(1+10\%)^4$

Equity Value is obtained by summing FCFE actualized from 2020 to 2023 + TV actualized

A. Right Answer = E = 576,839 k€
B. Wrong Answer= using directly FCFF
C. Wrong Answer = FCFE and TV are not discounted.
D. Only TV not discounted.

2. You are analysing a manufacturing company in the year 2019 and you know that:

- **WACC = 6.5%**
- **Ke = 7.3%**
- **Asset Turnover Ratio = 0.33**
- **Interest Coverage Ratio = 8**

You have also a selection of financial data of the company in the same year:

- **Cost of Goods Sold** **8,800 €**
- **Reserves:** **42,800 €**
- **Bank Debt:** **21,000 €**
- **Other liabilities:** **0 €**
- **Revenues:** **28,000 €**
- **Selling, General and Administrative Expenses:** **10,800 €**
- **D&A:** **2,200 €**
- **Other operating income** **0 €**

On the basis of the available data, what is the company's corporate tax rate, assuming that there are no other liabilities than bank debt?

(*4 Points*)

A. Company's tax rate is around 19%
B. Company's tax rate is around 34%
C. Company's tax rate is around 49%
D. There is not enough information to calculate the company's tax rate

Solution

EBIT = Sales – Cost of sales – SG&A
EBIT = 28,000-8,800-10,800 = 8,400
Interest expenses = EBIT/ICR
Interest expenses = 8,400/8 = 1,050
E=A-D
A=Sales/ATR = 84,848.5
E=84,848.5 – 21,000= 63,848.5
E/(D+E) is around 75.25%
D/(D+E) is around 24.75 %
Kd = Interest expenses / Debt --> Kd = 1,050/21,000 = 5%
(1-tc) = [WACC – Ke*E/(E+D)] / [Kd* D/(D+E)]
(1-tc) = [6.5% – 7.3%*(75.25%)] / [5%*24.75%]
(1-tc) is around 81% --> tc is around 19 %

Wrong answers:

B: Considering Equity as total assets
C Considering ICR as Kd

3. **Teta competes on the soft drinks market with global brands that allowed revenues around 5,650 million US dollars in 2019 (market share of 16,4%). Teta's drinks are sold in all continents without any specificity for local tastes and traditions. The main strategy is to sell the same product everywhere.**

   EBITDA of Teta in 2019 is about 3,420 million US dollars, FCFE is about 1,542 million US dollars, financial debts are 3,000 million US dollars and cash and cash equivalents is equal to 1,702 million US dollars.

   In the following table, some 2019 data (in millions of US dollars) about producers of soft drinks:

PRODUCERS OF …	**Equity Value**	**Enterprise Value**	**Revenues**	**EBITDA**	**FCFE**
GLOBAL BRANDS					
Alpha	19,990	24,600	4,355	2,090	1,740
Beta	16,340	21,450	3,890	1,876	1,450
Gamma	14,920	19,070	3,223	1,540	1,260
LOCAL BRANDS					
Delta	1,250	4,050	410	174	145
Epsilon	2,440	7,210	688	288	288

Using the relative valuation approach, and rounding the calculations at the second digit, it is true that:

(*4 Points*)

A. The Equity Value of Teta is about 37,569 million US dollars.
B. The Equity Value of Teta is about 30,870 million US dollars.
C. The Equity Value of Teta is about 39,263 million US dollars.
D. The Equity Value of Teta is about 56,100 million US dollars.

An asset side approach should be preferred. The most correct multiple is EV/EBITDA limited to companies with global brands. Look also below why other answers are wrong.

EV / EBITDA = (11.77 + 11.43 + 12.38) = 11.86

EV = 11,86 * 3,420 = 40,561.2
E = 40,561.2 – 1,298 = 39,263.2 (about 39,263)

A = false because debt, instead of net debt, is used to determine E

B = false because EV has been calculated using EV/revenues as a multiple (limited to globalized comparables), this multiple should not be used for mature companies with positive EBITDA

C = correct

D = false because EV has been calculated using EV/EBITDA as a multiple considering also producers of local brands that are not comparables (also the multiples have very different values)

4. **Company Alpha works in the energy sector. It designs, manufactures, and sells worldwide photovoltaic panels, while also managing and selling energy services.**

   You have access to the following data from the last Annual Report (2019, data in k€):

- **Other operating income: 1,000**
- **Financial expenses: 1,000**
- **Financial revenues: 500**
- **Cost of Sales (Cost of Goods Sold): 24,500**
- **Change in Trade Receivables (2019-2018): 100**
- **Change in Trade Payables (2019-2018): 1,000**
- **Change in Inventories (2019-2018): 400**
- **Selling & General, Administrative Expenses: 9,500**
- **Impairment of goodwill = 2000**
- **D&A of tangible assets: 2,500**
- **Income Taxes: 5,000**
- **Net Profit: 10,000**

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

(4 Points)

A. EBIT = 20,000 k€; EBITDA = 15,500 k€
B. Gross Profit = 20,000 k€; EBIT MARGIN = 32%
C. Gross Profit = 20,000 k€; Delta NWC = -500 k€
D. Revenues = 48,500 k€; EBIT MARGIN = 32%

Solution (data in k€)

Based on the available data, EBIT, EBITDA, and Gross Profit can be reconstructed starting from Net Profit.
Net financial expenses = Financial Expenses - Financial Revenues = 500k€
EBT = Net Profit + Income Taxes = 10,000 k€ + 5,000 k€ = 15,000 k€

EBIT = EBT + Net financial interests= 15,000 k€ + 500 k€ = 15,500 k€
EBITDA = EBIT + D&A + Impairment of goodwill = 15,500 k€ + 4,500 k€ = 20,000 k€
Gross Profit = EBIT + Selling and General Administrative Expenses – Other Operating Income = 15,500 mln€ + 9,500 k€ - 1,000 k€ = 24,000 k€
Revenues = Gross Profit + Cost of sales = 24,000 k€ + 24,500 k€ = 48,500 k€
EBIT MARGIN = EBIT / Revenues = 15,500 / 48,500 = 32%

5. **In the consolidation of financial statements which of the following criteria is not included in the IFRS 10 that states when control arises from investors?**

(2 Points)

A. Power over the investee (the subsidiary)
B. Exposure, or rights, to variable returns from its involvement with the investee
C. Ability to transfer the goodwill arise from consolidation to the revaluation reserve
D. Ability to use its power over the investee to affect the amount of the investors returns.

6. **About transfer pricing based on costs and mark-up, where:**

c_v = actual variable cost per unit
CF = total fixed actual costs
Q = actual quantity to be transferred from the selling business unit to the buyer business unit
a = selling business unit's mark-up
cv' = standard variable cost per unit
CF' = total fixed standard costs
Q' = standard quantity planned to be transferred from the selling business unit to the buyer business unit

which of the following transfer price (TP) is more appropriate if the corporation wants to incentivize the efficiency of selling business unit:

(2 Points)

A. $TP = (c_v + C_F/Q) * (1 + a)$
B. $TP = (c_v' + C_F'/Q') * (1 + a)$
C. $TP = (c_v' + C_F'/Q) * (1 + a)$
D. The corporate level should prefer negotiated transfer prices

7. **Company JOY is preparing the budget for the accounting year 2021 (January-December 2021). While preparing the cash budgets, they realise that they will have a problem of cash in 2021. They consider to fix this problem with a bank loan of 20,000€ with a duration of five years to be activated on January 1st, 2021. The bank offers to JOY different possibilities in terms of interest rate (always fixed), repayment of debt and commissions. The three possibilities (A, B, C) are illustrated as follows:**

   OPTION A
   - **Annual fixed interest rate: 10%**
   - **Commission: 3,200**
   - **Repayment of debt: bullet (at maturity date)**

   OPTION B
   - **Annual fixed interest rate: 5%**
   - **Commission: 200**
   - **Repayment of debt: amortized**

   OPTION C
   - **Annual fixed interest rate: 6%**
   - **Commission: 0**
   - **Repayment of debt: amortized**

   For all the three options:
   - **The payment of the debt interest will start in January 2021.**
   - **The commission is upfront and must be paid the 1st January 2021, at the activation of the bank loan.**
   - **In case of amortised loan, the amortisation is linear (equally divided across the 5 years), starts in 2021 and the annual repayment done at the end of the year.**

Which one of these sentences is TRUE?

(3 Points)

A. With reference to 2021 cash flows OPTION A is better than OPTION B
B. With reference to 2021 cash flows OPTION A is better than OPTION C
C. With reference to 2021 cash flows OPTION B is better than OPTION C
D. With reference to 2021 cash flows OPTIONS are all the same

SOLUTION

	Bullet + 10%+commissione=3200	
		2021
	New debt	20000
	Residual debt	*20000*
	Repayment of debt	
10%	Interest	2000
3200	Commission	3200
	TOT	*14800*
	Amortized + 5% rate + commission=200	
		2021
	New debt	20000
	Residual Debt	*20000*
	Repayment of debt	4000
5%	Interest	1000
200	Commission	200
	TOT	*14800*
	Amortized + 6% rate + commission=0	
		2021
	New debt	20000
	Residual Debt	*20000*
	Repayment of debt	4000
6%	Interest	1200
0	Commission	0
	TOT	*14800*

8. Assume that you have available only the operating budgets. Which one of the following indicators could be calculated with the available information?

(2 Points)

A. Return On Investment (ROI)
B. Earnings Before Taxes (EBT)
C. EBITDA Margin
D. None of the other answers

9. With reference to the Investment Budget carried out for 2021, which of the following is correct:

(2 Points)

A. Investments approved in previous years are not included in the budget for 2021.
B. Investments approved in previous years are accounted only if they still need to be depreciated in 2021.
C. Investments approved in previous years are accounted with reference to the cash outflows still to be paid in 2021 (if any)
D. Investments approved in previous years are accounted with the accrual principle with reference to the depreciation value of 2021.

10. Precision and completeness are two criteria to assess the quality of indicators. With reference to this tow criteria, which of the following sentence is CORRECT:

(2 Points)

A. DCF indicators are more precise than ROE
B. ROI is more complete than Residual Income
C. Delivery time is more complete than delivery delay
D. EBIT calcultated with a “by nature” framework of the Income Statement is more precise than EBIT calcultated with a “by function” framework of the Income Statement