QUESTION 1A (3 points)
ItaFoody Ltd is a multinational company competing in the food industry. You know the following data, as of December 31st, 2021:

- EBIT = 360 mln€
- Income Taxes = 105 mln€
- Total Assets = 2,205 mln€
- Third Part Liabilities / Equity = 1.7
- ROE = 30%
- ROI = 27%
- Financial Income = 0

Which of the following statements is CORRECT?

A. The average cost of financial debts is around – 1.9%
B. The average cost of financial debts is around + 1.9%
C. The average cost of financial debts is around + 0.8%
D. The average cost of financial debts cannot be calculated with the available data

Solution
You can calculate Equity because you know that:

- TPL / Equity = 1.7
- Total Assets = TPL + E = 2,205

Therefore: 1.7*Equity + Equity = 2,205 --> Equity = 816.67 mln€
Knowing Equity and ROE, you can get Net profit as ROE * Equity = 245 mln€
EBT = Net profit + Income taxes = 350 mln€
Financial expenses = EBIT – EBT = 10 mln€
Financial Liabilies = EBIT/ROI – Equity = 516.67 mln€
Average cost of financial debt = 10 mln€ / 516.67 mln€ = + 1.9%

Wrong answers:

A. The average cost of financial debts is calculated using at denominator the wrong sing
B. Correct answer
C. The average cost of financial debts is calculated considering TPL at the denominator
D. The average cost of financial debts can be calculated with the available data

QUESTION 1B (3 points)
Consider the data about ItaFoody Ltd given in the previous question as well as the following additional data, as of December 31st, 2021:

- EBIT margin (also known as ROS) = 10.6%
- Other operating income = 0
- Selling and Marketing expenses = 600 mln€
- General expenses = 50 mln€
- Administrative expenses = 200 mln€
- Outbound logistics expenses related to 2021 activities = 190 mln€ (all paid the next year 2022)
- Depreciation & Amortization of the production equipment: 200 mln€
- Raw material purchases = 500 mln€
- Inventories of raw materials (final and initial) = 0
- Data about the payroll of workers employed in the production department (and dealing only with production activities) are not available, but they are not negligible

Based on the available data, the Gross Profit Margin of ItaFoody Ltd on December, 31st 2021 …

A. Cannot be calculated, because data about workers' payrolls are not available
B. It is around 67%
C. It is around 41%

D. It is around 36%

Solution
Gross profit margin = gross profit/revenues.
Gross profit can be calculated by adding period costs to EBIT. Period costs are listed above and are:
Selling and marketing expenses + general expenses + administrative expenses + logistics expenses =
= 1,040 mln€
Gross profit = 1,400 mln€
Revenues = EBIT / EBIT margin = 3,396 mln€
Gross profit margin = 1,400 mln€/3,396 mln€ = 41%

Wrong solutions
A. Given the available data, the gross profit margin can be calculated even if the payrolls of production workers are not known
B. Calculated including D&A in the calculation: it is the depreciation of production equipment and it is a product cost
C. Correct answer
D. Calculated not including logistics expenses: the cash outflow will be in 2022, but in the income statement the accrual logic has to be followed, not the cash one

QUESTION 2A (2 points)
You are a financial analyst and you have been asked to estimate the value of WEST Ltd which produces and sells Men's Business Shoes since the early 90s. Products are high-quality thanks to the exploitation of Tuscany leather. WEST Ltd operates on a global scale and the production process is highly automatized through the usage of the most recent machinery in the field which allows for maintaining high production volumes alongside with quality of the final product. Indicators such as ATR are relevant for WEST. The company is not listed at present.
You have the following data of Company WEST as of December 31st, 2021:

- Revenues = 200 mln €
- Expected growth rate in the next years = +5.8%
- EBITDA = 148 mln €
- Net profit = 33 mln€
- Net financial position (calculated as long-term+short-term financial debts–available cash) = 50 mln €
- Leverage ratio = 2.1

You know the following information about potential comparable companies (data refers to the year 2021):

- Company B produces and sells high-quality sneakers for professionals and high-spending runners at a global level. Revenues are 210 mln € and it will grow +5.4% in the next years, EBITDA is 151 mln €, the net profit is 42 mln€, the net financial position is 54 mln €, leverage is 2.2, and market capitalization is 248 mln €.
- Company C produces and sells Women's Business Shoes on a global scale, and its main competitive advantage is high-quality. Revenues are 190 mln € and it will grow +6.2% in the next years, EBITDA is 155 mln €, the net profit is 20 mln€, the net financial position is 45 mln €, leverage is 1.9 and market capitalization is 240 mln€.
- Company D produces and sells high-quality Men's Business Shoes only for the Italian local market. Revenues are 77 mln and it will grow +1.8% in the next years, EBITDA is 50 mln €, the net profit is 10 mln€, the net financial position is 36 mln €, leverage is 1.3, and market capitalization is 32 mln €.
- Company E produces and sells basics Men's Business Shoes on a global scale focusing the attention on low production costs. Revenues are 180 mln € and it will grow +4.4% in the next years, EBITDA is 46 mln €, the net profit is 35 mln€, the net financial position is 34 mln €, leverage is 1.2, and market capitalization is 39 mln €.

Based on the available data:
Which are comparable companies of WEST Ltd?

A. Companies B, C and E
B. Companies D and E
C. Company B and C
D. None of the others

Solution
B and C are comparable companies because they have similar expected growth and a similar business model as they are both competing on quality at a global level. D is not comparable because it operates at a local level and its size is significantly different from the target company. E is not comparable because it competes only on production and neglects high quality.
Therefore, the correct answer is C.

QUESTION 2B (2 points)
Considering all the information about WEST Ltd in the previous question, which of the following is the most appropriate multiple?

A. EV/revenues
B. EV/EBITDA
C. EV/EBIT
D. P/E

Solution
The company is a manufacturing company that makes significant usage of assets (ATR is a relevant ratio) and for this reason, asset-side multiples should be preferred to the equity side ones. Considering the available data, EBITDA should be the preferred multiple since the company is a long-establishes one (it exists since the early '90s). EV/revenues is used for start-ups and early-stage companies (or when profitability values are negative). EV/EBITDA is typically preferred to EV/EBIT because it is a proxy of cash and does not suffer from differences between companies that manage D&A under different accounting approaches.
Therefore, the correct answer is EV/EBITDA.

QUESTION 2C (2 points)
Considering all the information about WEST Ltd in the previous questions, the Enterprise Value of WEST Ltd is:

A. EV is around 284 mln€
B. EV is around 218 mln €
C. EV is around 97 mln €
D. None of the others

Solution
At this level, you are required to apply multiples.
Calculate EV/EBITDA for the comparable companies

- EV/EBITDA (company B): 2.00
- EV/EBITDA (company C): 1.84
- Average: 1.92

EV (WEST): 284.16 mln€. Therefore, the correct solution is A.

B is wrong since it considers D and E as comparable companies
C is wrong since it considers EV/revenues as multiple
D is wrong since it considers D and E as comparable companies and EV/revenue as multiple

QUESTION 3A (3 points)

You are assessing the value of ALPHA Ltd based on the DCF method (analytical approach). You have calculated the expected FCFF and FCFE for the next years 2023, 2024, and 2025. Figures are shown in the Table below (data in hundreds of euros).

	2023	**2024**	**2025**
EBIT	5,000	6,000	6,500
+D&A	500	700	700
- delta Receivables (f-i)	-500	-400	-600
- delta Inventories (f-i)	-200	-300	-100
+ delta Payables (f-i)	200	200	400
- taxes	-2,000	-2,400	-2,600
- CAPEX	-1,000	-500	-500
FCFF	**2,000**	**3,300**	**3,800**
- net financial costs	-90	-90	-90
+ net financial incomes	0	0	0
+ issue of new debts	1,000	0	0
- debt repayment	0	-1,500	-500
+ new share capital	0	2,000	0
- dividends	-300	-400	-300
FCFE	**2,610**	**3,310**	**2,910**

Knowing that for the year 2023:

- cost of equity = 15%
- average cost of debt = 10%
- WACC = 8.25%
- Invested Capital = 200,000€
- Beta levered = 1.2

What is the beta of the industry where ALPHA is competing?

a) It is around 0.43
b) It is around 0.3
c) It is around 0.75
d) None of the others

Solution

We can start from the formula for the calculation of WACC

WACC = ke*E/(D+E)+kd*(1-tax rate)*D/(D+E)

We know all variables but E and tax rate.

Tax rate can be calculated from the data in the table as the ratio between taxes/EBIT = 200,000 / 500,000 = 40%

As D = Invested Capital – E, the only unknown variable remains E that can be calculated and it is equal to 50,000€

We also know that B_L=$B_{U,industry}$*(1+(1-tax rate)*D/E)

The only variable that is unknown is $B_{U,industry}$= B_L/(1+(1-tax rate)*D/E)=0.43

Wrong answers:

a) Correct answer
b) Calculated overlooking tax rate in the formula of B_L
c) Calculated overlooking D/E in the formula of B_L
d) It is wrong because answer A is correct

QUESTION 3B (3 points)

Consider the information about ALPHA Ltd stated in the previous question.

Contrary to previous assumptions, ALPHA Ltd will open new financial debts of 300,000€ instead of 100,000€ in the year 2023 that will be repaid at the end of the year 2025, with an interest of 10% paid every year. Furthermore, ALPHA will launch an additional marketing campaign to promote its products in new markets for 80,000€ in the year 2023 and will be allowed by the supplier to pay half of the cost of the campaign in the year 2023 and the remaining half in the year 2024.

Considering these new assumptions, what are the expected values of FCFF and FCFE in the year 2023?

A. FCFF = 192,000€ and FCFE = 441,000€
B. FCFF = 160,000€ and FCFE = 409,000€
C. FCFF = 192,000€ and FCFE = 433,000€
D. None of the others

Solution

You must account for the impact of the new assumptions.

With respect to the opening of a new debt, there are two main changes to previous forecasts. First, the value of "issue new debts" changes from 100,000 € to 300,000€. Second the value of net financial costs changes from 9,000€ to 21,000€. In fact, additional financial costs = 200,000*10% = 20,000€, tax rate = taxes / EBIT = 200,000 / 500,000 = 40%, this means that additional financial costs = 20,000 * (1-40%) = 12,000€. Concluding, net financial costs = 9,000 + 12,000 = 21,000€

Concerning the additional marketing campaign, there are two main changes to previous forecasts. First, the value of EBIT decreases from 500,000 € to 420,000€ because of the additional cost (accrual principle). Second, delta payables will increase from 20,000 to 60,000 € because half of the cost will be paid in the year 2024. Third, taxes will decrease from 200,000 € to 168,000 because the additional cost of 80,000 € will act as a tax shield for 40% of its value (i.e., 32,000€).

Wrapping up, FCFF = 192,000 € and FCFE = 441,000€

Wrong answers:

a) Correct answer

b) The impact on taxes has not been considered

c) Net financial costs are increased by additional financial costs without considering taxes

d) Wrong because answer A is correct

QUESTION 4 (2 points)

Yogy Ltd is a group operating in the dairy industry in three countries. Specifically, while the parent (holding) company is located in Belgium, the three subsidiaries are located in Italy, Spain, and Portugal. Each subsidiary is a separate legal entity. They all produce and sell yoghurt-based products personalized to local needs. The controller of the parent company is assessing the management reporting system for the subsidiaries.

Assuming that there are no exchanges of goods between the three subsidiaries, which of the following statements is CORRECT?

A. The reporting system for the subsidiaries must not include the allocation of costs managed at the parent (holding) level on behalf of the subsidiaries (e.g., marketing and R&D costs)
B. The reporting system for the subsidiaries could include indicators such as NOPAT and EBT to consider the impact of income taxes on profitability
C. Since the three subsidiaries are independent legal entities, accounting-based indicators should be privileged as the backbone of the reporting system
D. None of the others

SOLUTION

A. The allocation of costs incurred at the parent (holding) level for benefiting the subsidiaries can follow a complete/partial/no-allocation policy, each of them with pros and cons; in this view, none of the three methods must be compulsorily employed
B. Correct answer
C. Being autonomous entities, they include a corporate level, BUs, and responsibilities centers; in this view, the reporting system should include value-based indicators, accounting-based indicators and value drivers. Among them, even if all of them would be significant, the most relevant would be the value-based indicators because the parent (holding) company will monitor the performance of the whole subsidiary as well as of the top-managers.
D. Wrong because answer B is correct

QUESTION 5 (2 points)

PROP Ltd uses a complete allocation policy based on proportional allocation to allocate the costs of the central R&D Unit to its 3 Business Units (BUs). Considering the budget for the year 2021, the total fixed budgeted costs for the R&D Unit were 3,6 Million €. The total budgeted capacity was 120,000 hours. The forecasted usage of R&D capacity by the three BUs was 25,000 hours for BU(X); 45,000 hours for BU(Y); 30,000 hours for BU(Z).
At the end of the year 2021, while the actual usage by BU(X)and BU(Y) was equal to the budgeted values (25,000 hours and 45,000 hours), the usage by BU(Z) was lower (only 20,000 h). There were no variances in fixed costs. What is the amount of actual costs allocated to BU(X)?

a) 750,000 €
b) 900,000 €
c) 1,000,000 €
d) None of the others

Solution:
Since the company uses proportional allocation approach based on a driver, what matters is the actual usage by the 3 BUs. So:
Total actual usage = 25,000 + 45,000 + 20,000 = 90,000 h
Allocation coefficient = 3,600,000/90,000 = 40 €/h
Costs allocated to BU(X) = 40 * 25,000 = 1,000,000 €

Wrong answers:
a) Allocation based on total capacity (budgeted fee * actual usage)
b) These are the budgeted allocated costs (i.e. costs allocated in the budgeting process according to forecasted usage)
c) Correct answer
d) It is wrong because answer C is correct

QUESTION 6 (2 points)

Company Beta Ltd has two Business Units (BUs). Consider an intra-company exchange of component X between the two BUs, based on a market-based transfer price system. The market price for this component is 23 €/u. In addition, in case the downstream BU decides to buy the component from an external supplier, it would face 2 €/unit of (additional) transaction costs.
Assuming (for simplicity) that:

- in case of internal transaction, the selling unit does not save any transaction cost
- the price of the final product (i.e., that sold by the downstream BU on the market) remains unchanged

what would be the transfer price?
a) 23€/unit
b) 27€/unit
c) 25€/unit because transaction costs are not relevant for the determination of the transfer price

d) Between 23 and 25 €/u: the value of the TP depends on how the savings are distributed between the upstream and downstream BU

Solution:
Transactions costs consist in (a) logistic/marketing/selling/administrative/customer management costs for the supplier and (b) procurement/logistic/supplier management/administrative costs for the buyer. All these costs may be (or are) usually lower (or null) in the case of an internal transaction, leading to higher profits for both BUs (ceteris paribus), especially if the price of the final product remains unchanged. In this specific case the transaction costs for the upstream division are null. So, the only BU that benefits from the internal transaction is the buying unit. In this case the transfer price could be slightly higher than the market price, to re-distribute the extra profitability between the two BUs. Of course, the upper bound in this case is 25 €/u (above this value it is better for the downstream division to buy the component from the market).

QUESTION 7 (2 points)
You are comparing the conditions of two loans. They have the same duration and interest rate, that is fixed. They only differ for their repayment scheme: amortized and bullet.
Which of the following statements is correct?

A. The amortized loan is more convenient because it requires lower total cash outflows considering the overall duration of the loan
B. The bullet loan is more convenient because it requires lower cash outflows considering the overall duration of the loan.
C. To select the alternative that is more convenient, the cost of capital of the company should be taken into consideration.
D. None of the others

Solution:

A. Wrong: the amortized loan requires lower total cash outflows, but for selecting the alternative that is more convenient for the company, the cost of capital of the company should be taken into consideration.
B. Wrong: the bullet scheme requires higher total cash outflows, but for selecting the alternative that is more convenient for the company, the cost of capital of the company should be taken into consideration
C. Correct: Ceteris paribus the convenience of the two loans from a company perspective depends on the cost of capital of the company. Cash outflows that happen later in time are discounted more, increasing the attractiveness of the bullet scheme that postpone the repayment of the whole amount of the loan in the last year, while only interests are paid in the previous years
D. Wrong: C is correct

QUESTION 8 (2 points)
Considering a manufacturing company where ATR is higher than 1, which of the following statements is TRUE?

A. Gross Profit is always higher than EBITDA because depreciation & amortization are higher than period costs
B. The value of the EBIT calculated in the Income Statement by Nature is always lower than the value of the EBIT calculated in the Income Statement by Destination/Function because the Income Statement by Destination/Function overlooks the variation of the inventories
C. ROA is lower than ROS (also known as EBIT margin)
D. None of the others

Solution:

A. Wrong: there is no relationship between D&A and period costs, their values can be very different company by company and we cannot claim that D&A > period costs always

B. Wrong: the value of the EBIT is always the same regardless of the format used for drafting the Income Statement
C. Wrong: ROA = ROS * ATR. If ATR > 1 than ROA > ROS
D. Correct

QUESTION 9 (2 points)
Which of the following statements about associates is correct?

A. Associates are investees over which their investors exercise significant influence and full consolidation is used as accounting method.
B. In associates, investors have the power to participate in the financial and operating policy decisions of the investees and equity method is used as accounting method for consolidation.
C. Associates are entities fully controlled by investors, as regulated by IFRS 10, and equity method is used as accounting method for consolidation.
D. In associates, investors can direct investees' activities that significantly affect their returns but they have not voting rights to participate in decisions.

Solution:

A. It is wrong because the full consolidation is the accounting method used for subsidiaries.
B. It is correct.
C. It is wrong because in associates, investors exercise significant influence (and not control), which is regulated by IAS 28.
D. It is wrong because in associates, investors have power but not control. For IFRS 10, power exists when there are rights to participate in decisions and substantive capability to orientate investee's relevant activities.