MULTIPLE CHOICE TEST (individual assignment)

Time = 1 hour

Read each question carefully and choose the best response: indeed, **there is only one correct answer per question!**

Write below in this answer sheet the letter corresponding to the correct answer for each question. Filling this answer sheet is mandatory for having the test evaluated.

In case of different choices in the answer sheet below and the single question, the letters in the answer sheet will be taken as the answers chosen by the student.

The international convention for decimal and thousand separators is used – i.e., the comma is used to separate groups of thousands and the dot is used to separate decimals.

Consider that 1 k€ = 1,000 € | 1 M€ = 1,000,000 € | M = 1,000,000

If you have read the above text, you can start with the test!

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

NAME	
SURNAME	
STUDENT ID	

For each question (1-6) indicate the right answer with the corresponding CAPITAL LETTER [A-B-C-D]. Please consider that <u>only</u> this answer sheet will be assessed.

Question	**1A**	**1B**	**2A**	**2B**	**3A**	**3B**	**4**	**5**	**6**	**7**	**8**	**9**
Your Answer												

QUESTION 1A (3 points)

The following data are extracted from 2021 financial statements of Company MM Ltd:

- Personnel costs = 8 M€
- Incidence of personnel costs on total operating costs (D&A included) = 40%
- Depreciation & Amortisation = 2 M€
- Equity = 12 M€
- Total Assets = 30 M€
- Financial Expenses = 1.2 M€
- Income tax rate = 40%
- Financial assets (current and non-current) = 0
- ROE = 15%
- Other operating revenues = 0
- Change in inventories of finished goods and work in progress = 0

What is the value of the EBITDA Margin?

A. 29.96%
B. 23.66%
C. 25.62%
D. None of the others

Solution:
Total operating costs = 8/0.4 = 20 M€
EBIT = Net Profit + Income Taxes + Fin Exp – Fin Revenues +/- Changes in value of Fin Assets
where:

- Financial Expenses = 1.2 M€ (see text)
- Financial Incomes are null (no Financial Assets)
- Change in value of fin assets is null (no Financial Assets)
- Net Profit = ROE * Equity = 0.15*12 = 1.8 M€
- Income Taxes = [1.8 / (1-0.4)] * 0.4 = 1.2 M€

So EBIT = 1.8 + 1.2 + 1.2 = 4.2 M€
Revenues = 20 + 4.2 = 24.2 M€
EBITDA = 4.2 + 2 = 6.2 M€
EBITDA Margin = 6.2 / 24.2 = 25.62%
Wrong answers:

A. Wrong computation of EBT Starting from Net Profit
B. Wrong computation of Revenues starting from Operating Expenses (Operating Expenses not including D&A)
C. Correct

QUESTION 1B (3 points)

Still regarding Company MM, you know the following complementary information:

- Average delay of payments of suppliers of raw materials and components: 90 days (end of month);
- Purchases of raw materials and components can be considered as evenly spread across the months;
- End of year Account Payables value concerning suppliers of all raw materials and components was 10% of Third-Party Liabilities;
- Services and Rentals expenses amounted to 2.5 M€;
- No other Operating Expenses were faced by the company in 2021.

What is the amount of the Change in the Inventories of inventoriable goods between the first and the last day of the reporting period (initial – final)?

A. Around -0.3 M€

B. Around +0,3 M€
C. Around +2.1 M€
D. Around +2.7 M€

Solution:

- Final value of Account Payables) = 0.1*18 (where Third-Party Liabilities = 30 – 12) = 1.8 Mln€
- Total Purchases: 1.8/3*12 = 1.8*4 = 7,2 Mln€
- The text specifies that “no other operating costs were faced by the company in 2021”

Therefore operating costs = Purchases of inventoriable goods + Change in Invent (i-f) + Services/Rentals + Personnel + D&A

20 = 7,2 + X + 2,5 + 8,0 + 2
X = 0,3
Wrong solutions:
A. Wrong sign
B. Correct
C. Wrong computation of purchases of tangible goods (starting from final account payables)

QUESTION 2A (3 points)

GingerBird is a US-based investment fund that manages more than 5 billion euros of capital and it is operating in a wide range of sectors, including financial and technology services, media, telecommunications up to owning shares in many sports companies. In recent years, the fund has paid special attention to the European soccer industry, which is a fast-growing business with wide global visibility.
GingerBird is negotiating the purchasing of 100% of the historic club of Milano City ("Mediolanum Sport"), a team at the top of the Italian soccer league and often a contender in the most important European competition where the strongest teams face each other.
To support the negotiation, GingerBird needs to estimate the value of Mediolanum Sport through relative valuation. Mediolanum Sport, like almost all other soccer clubs, is not listed at the stock exchange market.
A peculiarity of the soccer industry is that the clubs manage a limited number of assets in their balance sheets even if they are characterized by a high assumed value. These items mainly consist in the ownership title of sports facilities (including in some cases the stadium) and players' multi-year performance rights (subject to rapid depreciation for up to 5 years). Indeed, the players' ownership rights represent one of the preponderant items within the category "intangible non-current assets", accounted in the Balance Sheet.
The overall market value of all the players of the club is named “Market Value of the Team”.
The table below provides a summary of the Mediolanum Sport's key financial information on December 31st, 2021:

- Revenues (M€) = 429
- EBIT (M€) = 34
- Staff costs (including players) to revenues ratio = 59%
- Market Value of the Team (M€) = 699
- Social Media Followers (M) = 55
- D/E = 2.6
- Net Financial Position (M€) = 280

According to the information available, which of the following sentences is CORRECT?

A. An asset-side (EV) approach should be preferred to an equity-side (E) approach because assets are relevant in generating value
B. An equity-side (E) approach should be preferred to an asset-side (EV) approach because it is the preferred method when companies have different capital structure as in the case of football companies

C. An equity-side (E) approach should be preferred to an asset-side (EV) approach because it is the only method that can be applied with the information presented in the text
D. Both approaches would give the same result, so it is not relevant which one to choose.

SOLUTION:
The correct answer is A. When a company generates value according to the flows produced by its assets, and not according to how they are allocated between shareholders and debt holders, then an asset-side approach is preferred.

Wrong answers:
B. Is not correct because equity side multiples are preferred when the capital structure of companies is similar since the equity value is influenced by the capital structure itself.
C. Is not correct because in the text also information to compute enterprise value are present.
D. Is not correct because equity-side (E) and asset-side (EV) are two different approaches strongly influenced by the choice of multiple and they usually lead to distinct results.

QUESTION 2B (3 points)
In addition to the information already presented in the previous question, the table shows some data about six soccer teams that compete in the European Major League such as Mediolanum Sport:

	EV (M€)	Revenues (M€)	EBIT (M€)	Market Value of the Team (M€)	Social Media Followers (M)	D/E	Net Financial Position (M€)
FC London	1,875	506	43	742	78	2.2	322
Man Devils	2,883	766	19	876	121	3.7	524
Foot Paris	1,754	439	42	624	66	2.4	390
Union de Madrid	3,184	843	93	958	230	4.1	686
München Fußball	2,021	549	44	701	71	1.9	277
Piemonte Calcio	1,480	402	39	649	68	1.9	299

In football industry, the quality of players of a team is one of the most important drivers for determining the value of a club. The more valuable the players are, the more likely the club is to perform well on pitch and eventually succeed economically.
Based on the available data and consistently with the previous question, the value of Mediolanum Sport is (use two significant figures in calculations):

A. 1,616M€
B. 1,775 M€
C. 1,835 M€
D. 1,555 M€

Solution
The first step is the selection of comparable companies: the main parameters provided by the text are Revenues, EBIT and D/E. For this reason, Union de Madrid and Man Devils do not fit within many of the parameters and must be excluded. Instead, FC London, Foot Paris, München Fußball and Piemonte Calcio can be considered as comparable companies.

	EV	Revenues	EBIT	Team Market Value	Social Media Followers	D/E	Net Financial Position
FC London	1,875	506	43	742	78	2.2	322
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The second step is the selection of EV multiple: according to the information in the text, the **team market value (TMV)** is the best proxy to assess value creation. Indeed, overall increases in revenue, growing internationalization, as well as the professionalization of practices in clubs' sports departments (e.g., scouting, data performance analytics, investments in academy infrastructure, et c.) are the result of forward-looking and sustainable club management, which is the reason why clubs constantly seek to build successful teams by securing valuable players to the best of their financial ability.

Average value of the multiple for the selected comparable clubs:

$$\frac{\frac{EV_1}{TMV_1}+\frac{EV_2}{TMV_2}+\frac{EV_3}{TMV_3}+\frac{EV_4}{TMV_4}}{4}=\frac{\frac{1{,}875}{742}+\frac{1{,}754}{624}+\frac{2{,}021}{701}+\frac{1{,}480}{649}}{4}=2.63$$

Apply the multiple to the target company (Mediolanum Sport):
$EV_{target} = Multiple * \mathrm{TMV}_{target} = 2.63 * 699 = 1{,}835$ M€

Wrong answers:

A. is computed using the EV/Revenues as a multiple.
B. is computed using the EV/TMV as a multiple but only considering FC London, Foot Paris and Piemonte Calcio as comparable companies (München Fußball is excluded).
D. is computed using the EV/TMV as a multiple and the 4 correct comparable companies, but the final result is the estimation of the equity value through the formula E = EV - NFP

QUESTION 3A (3 points)

You have the following data about company ABC. These data represent the budget values for 2023 (data are in k€):

- Revenues= 150k€
- Operating costs= 110k€ (included depreciation & amortization for 10k€)
- EBIT= 40k€
- Profit Before taxes= 32k€
- Net Profit= 19.52k€
- Purchase of new assets= 2.2k€
- Disposal of assets= 0
- Accounts receivable 2023, 31st December= 36k€
- Accounts receivable 2022, 31st December= 30k€
- Inventories 2023, 31st December= 19k€
- Inventories 2022, 31 December= 15k€
- Accounts Payables 2023, 31st December= 31.4k€
- Accounts payables 2022, 31st December= 26k€

Based on this data, what is the value of FCFF in 2023?

A. 27.6k€
B. 36.8k€
C. 30.7k€
D. 32k€

Solution
To compute the FCFF, we need to compute the value of taxes and Δ NWC.
Taxes = profit before taxes – net profit = 32-19.52 = 12.48k€
Tax rate = taxes/profit before taxes = 12.48/32 = 0.39
Δ NWC = (ΔAR+ ΔI-ΔAP) = (36+19-31.4) - (30+15-26) = 23.6-19 = 4.6
FCFF = EBIT – taxes + D&A - Δ NWC - Δ CapEX = 40 – (0.39*40) + 10- 4.6 -2.2 = 27.6k€
B) is wrong since it computes FCFF using the wrong sing for Δ NWC
C) is wrong since it computes FCFF considering the taxes from income statement rather than taxes on EBIT
D) is wrong since it computes FCFF using the wrong since for Δ CapEX

QUESTION 3B (3 points)

Moreover, you also have this additional data related to 2023:

- No new capital will be issued in 2023
- FCFFs are expected to grow from 2023 onwards (growth rate = 2% per year, infinite time horizon)
- Cost of equity =9%
- Cost of debt = 6%
- Financial liabilities = 80 k€
- Equity = 90 k€

Based on this data, what is the terminal value in year 2023 from an asset-side perspective?

A. About 503.77 k€
B. About 625.60 k€
C. About 402.17 k€
D. None of the others

Solution
We need to compute TV considering an infinite time horizon with growth rate. Hence the formula is the following:

$$TV_{EV} = \frac{FCFF_T \times (1+g)}{WACC_T - g}$$

FCFF = 27.6 k€ (from the previous step)
g = 0.02
WACC = 0.09* (9/9+8) + 0.06*(8/9+8) * (1-0.39) = 0.065
TV = (27.6 * 1.02) / (0.065 - 0.02) = 625.55k€
A is wrong since it does not include taxes in the computation of WACC
C is wrong since it computes TV considering Ke rather than WACC

QUESTION 4 (2 points)

Beta Ltd has three production departments (A, B, C) that all use the same machine for packaging their products (while this machine is not used by any other department of the company). The cost of the packaging machine is fixed, and it is allocated to the three departments on a quarterly basis.
You know the following data about the three departments, referred to the period January - March 2022:

Department	Sales	Quarterly usage of the packaging machine
A	50,000 €	200 hours
B	40,000 €	400 hours
C	20,000 €	500 hours

You also know that the packaging machine is available for 1300 hours on a quarterly basis and the cost of the packaging machine allocated to the three departments, for the period January-April 2022, has been equal to:

- 18,000€ to department A
- 36,000€ to department B
- 45,000€ to department C

Based on the available data, which of the following statements is correct?

A. Assuming that the packaging machine cost is allocated based on a fee allocation, if the monthly usage of the packaging machine of department A increases, costs allocated to departments B and C decrease.
B. Assuming that the packaging machine cost is allocated proportionally using the number of machine hours as a driver, its overall costs would amount to 117,000€
C. Assuming that the packaging machine cost is allocated based on a fee allocation, its overall costs would amount to 117,000 €
D. None of the other answers.

Solution

A. This answer is WRONG: with a fee allocation, only the costs allocated to department A change (they increase), but there is no effect on the ones of B and C
B. This answer is WRONG: if adopting the allocation proportional to a driver, the total costs related to the specific machine would be equal to the sum of the allocated costs: 18,000 € + 36,000 € + 45,000 € = 99,000 €
C. CORRECT. You can calculate the costs (X) starting from the calculation of the fee: X/1300 h
Then:
X/1300 * 200 = 18,000 €
X/1300 * 400 = 36,000 €
X/1300 * 500 = 45,000 €

X = 117,000 €

QUESTION 5 (2 points)

Considering a cost centre in a manufacturing company, which of the following statements is TRUE:

A. The "backbone" of the reporting system is based on value-based indicators like Enterprise Value, ROE, Residual Income
B. The "backbone" of the reporting system is based on accounting-based indicators like ATR, Inventory Turnover, NOWC
C. The "backbone" of the reporting system is based on value drivers like time to market, customer satisfaction, claims
D. None of the others

Solution
A cost centre is a responsibility centre and the "backbone" of the reporting system for responsibility centres is based on value drivers. In this view, answers A and B are wrong. Answer C is wrong because the value drivers reported as an example do not refer to a cost centre but a revenue centre.

QUESTION 6 (2 points)

Company Alpha has two business units: A and B. A is the upstream BU; it is the biggest BU of the company and sells 90% of its products to the market and 10% of its products to BU B. BU(B) is a small internal BU, that is strategic for the company from a reputational point of view because it allows the company to be present in the final market, have contacts with the final clients and monitor the market upcoming trends. However, BU(B) suffers for the competition of other companies that have a larger market share and can exploit scale economies.
BU A sells its products for 80€/u on the market. It has variable costs of 20 €/u and fixed costs of 30,000€/week.
BU B takes in input the product of BU A, assembles it with another component bought from an external supplier for 90€/u and sells its final product on the market. BU B has fixed costs of 120,000 €/week.
Based on the above data, which of the following statements is correct?

A. In this specific case, a market-based transfer price is the most suitable option for BU B
B. In this specific case, a cost-based transfer price, based on actual cost, is the most suitable option for BU B
C. If the company uses a cost-based TP based on standard cost, from a company perspective the minimum selling price of the final products of BU(B) should be of 170€/u
D. None of the other answers

Solution
A. Wrong: it cannot be said with the available data. Given the characteristics of BU B, that could be a strategic division, dual transfer prices would be the most suitable options for the downstream business unit.
B. Wrong: it cannot be said with the available data. Given the characteristics of BU B, that could be a strategic division, dual transfer prices would be the most suitable options for the downstream business unit.
C. Wrong: the minimum selling price has to consider the variable costs of the upstream BU and the variable cost of the downstream BU.
D. Correct

QUESTION 7 (2 points)

Select the correct statement with regards to intragroup balances and transactions during consolidation:

A. Intragroup balances and transactions must be eliminated
B. Intragroup balances and transactions must be eliminated only for non-controlling interest
C. Intragroup balances and transactions must be eliminated in proportion to the percentage of effective ownership
D. Intragroup balances and transactions do not have to be eliminated

SOLUTION

Consolidated financial statements:
A combine like items of assets, liabilities, equity, income, expenses and cash flows of the parent with those of its subsidiaries.
B offset (eliminate) the carrying amount of the parent's investment in each subsidiary and the parent's portion of equity of each subsidiary (IFRS 3 explains how to account for any related goodwill).
C eliminate in full intragroup assets and liabilities, equity, income, expenses and cash flows relating to transactions between entities of the group [IFRS 10.B86]

QUESTION 8 (2 points)
You are developing a financial plan for a corporation. Which of the following questions should be considered as you develop this plan?

I How much net working capital will be needed?
II Will additional fixed assets be required?
III Will dividends be paid to shareholders?
IV How much new debt must be obtained?

A. I and IV only
B. II and III only
C. I, III and IV only
D. All four

SOLUTION
The correct answer is that all four questions should be made to correctly develop the financial plan of a company.

QUESTION 9 (2 points)
Company Beta Ltd (which has both short and long-term debt) has just decided to lower the degree of financial leverage by repaying a few current bank debts. What happens to the average cost of debt of the remaining financial liabilities?

A. It decreases because the company is perceived as less risky by banks
B. It increases because long-term debt is always characterised by a higher interest rate (compared to short-term debt)
C. It increases because the banks will perceive the company as riskier because of the reduction of the amount of available cash due to the repayment of the debt
D. Nothing can be said without gathering more information about the interest rate of the different debts

Solution
The cost of bank debts is contractually defined. This means that when the company repays bank debts, the bank debt that will be maintained have already defined an interest rate. This means that nothing can be told about the average cost of debt of the maintained bank debts without knowing their contractually defined interest rate and their amounts as well as the contractually defined interest rate and amounts of the bank debts that have been repaid.