ACCOUNTING, FINANCE AND CONTROL

MULTIPLE CHOICE TEST

Call January 19th, 2024

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

NAME	
SURNAME	
STUDENT ID	

Available Time: 60 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 following, two very well-known strategies for approaching multiple-choice questions are reminded briefly. **Choose the Best Response, there is only one correct answer per question!**

Many options in a multiple-choice answer may have some truth to them. <u>You want to identify the *best* response from the *good* responses.</u> 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 read the question once again when selecting the *best* answer.

Mark only "Sure Things" first and 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, 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 about 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.

<u>There are no penalties for wrong answers</u>.

In the following questions:

- Consider that **1k€ = 1 thousand euros** and **1Mln€ = 1 million euros.**
- **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.**
- **Calculations in the exercises need to be rounded up to the second decimal place.**

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

QUESTION 1A (3 points)

ABC Ltd manufactures and sells a single item. It is November 2023; in the shoes of the Chief Financial Officer (CFO), you are dealing with the finalization of the budgeting process for the fiscal year 2024. Shareholders are waiting to know the budgeted value of ROE for 2024.

You know the following budgeting information for the fiscal year 2024:

- Cash Flow from Operating Activities = 1,250,000 €
- Corporate Tax Rate = 40%
- Current Ratio = 1.2
- DPO (calculated over 12 months) = 6 months
- Financial expenses – financial revenues = 700,000 €
- Financial Leverage (calculated on Third Part Liabilities) = 4
- Net Profit Margin (NPM) = 4.8%
- Purchases of raw materials and services = 5,000,000 €
- Revenues = 10,000,000 €
- ROI (EBIT / Invested Capital) = 20%

You also know that:

- Net profit from discontinued activities = 0
- There are no other financial income and expenses different from what is stated above
- The company applies the Just-In-Time (JIT) paradigm and works with zero inventories
- Payables are the only liability without an explicit interest rate

What is the budgeted value of the 2024 ROE?

A. Around 32%
B. Around 24%
C. Around 19%
D. None of the others is correct

SOLUTION

ROE = Net Income / Equity

NPM = Net Income / Revenues → Net Income = NPM * Revenues = 4.8% * 10,000,000 = 480,000 €

EBIT = Net Income + Taxes + (Financial expenses – financial revenues) = 1,500,000

ROI = EBIT / Invest Capital → Invest Capital = EBIT / ROI = 7,500,000 €

DPO = (Payables / Purchases) * 12 → Payables = DPO / 12 * Purchases = 6 / 12 * 5,000,000 = 2,500,000 €

Invest Capital = Total Assets – Liabilities without an explicit interest rate = Total Assets – Payables à Total Assets = Invest Capital + Payables = 7,500,000 + 2,500,000 € = 10,000,000 €

Total Assets = Equity + Liabilities

Being Liabilities / Equity = 4 à Total Assets = Equity + 4 * Equity = 5 * Equity → Equity = 2,000,000 €

ROE = 480,000 / 2,000,000 = 24%

A. Wrong. ROI is computed as EBIT / Total assets
B. Correct
C. Wrong. DPO is computed based on revenues instead of purchases
D. Wrong.

QUESTION 1B (3 points)

Considering again ABC Ltd, you are interested in simulating what might be the budgeted Return on Sales (or EBIT margin) in case the number of units sold would increase by 20% (with no change in the price per unit) AND period fixed costs would decrease by 30% compared to the current forecast. In addition to data made already available in the previous exercise, you have been able to collect the following data about the current forecast (i.e., these data do not consider the changes you want to simulate):

- Cost of variable raw materials consumed = 700,000 €
- Cost of assembling line workers = 1,200,000 €
- Cost of plant supervisors = 600,000 €
- Cost of energy used for manufacturing = 100,000 €
- Provisions to the salesforce = 2% of revenues
- Shipping fees = 800,000 €
- Gross profit margin = 40%
- Other operating revenues = 0 €

You also know that:

- Assembling line workers are paid based on the number of worked hours
- Other employees than assembling line workers have a fixed contract
- Shipping is managed by an external dealer that applies a fee of 8€ per unit
- Cost of energy used for manufacturing is directly related to the number of machine-hours

Assuming that all costs that are not specifically identified as variable are fixed, what is the expected value of Return on Sales (or EBIT margin) in the simulation scenario?

A. Around 29.2%
B. Around 27.9%
C. Around 29.9%
D. None of the others is correct

Solution

Return on Sales (or EBIT margin) is equal to EBIT divided by revenues. This means that you must calculate the budgeted values of EBIT and revenues in the simulation scenario. In the simulation scenario, two changes are analysed: (a) sales (i.e., units sold) will increase by 20%, and (b) fixed period costs will decrease by 30%.

The first change impacts both revenues and variable costs. Variable costs refer to raw materials, assembling line workers, energy for manufacturing, provisions for the salesforce, and shipping. In this view, it is useful to draft the Income Statement by Functions/Destination. This allows us to point out the Gross Profit, too.

Gross profit margin = Gross Profit / Revenues = 40% → Gross Profit = Revenues * 40% = 4,000,000 €.

Variable Production Costs (cost of raw materials + cost of assembling line workers + cost of energy) = 700,000 + 1,200,000 + 100,000 = 2,000,000 €

We also know that Gross Profit = Revenues – Variable Production Costs – Fixed Production Costs

This implies that Fixed Production Costs = Revenues – Variable Product Costs - Gross Profit

Fixed Production Costs = 10,000,000 – 2,000,000 - 4,000,000 = 4,000,000 €

Variable period costs = 800,000 € + 2% * 10,000,000 = 1,000,000 €

We also know that EBIT = Gross Profit – Variable Period Costs – Fixed Period Costs + Other Revenues

This implies that Fixed Period Costs = Gross Profit – Variable Period Costs + Other Revenues – EBIT

Fixed Period Costs = 4,000,000 – 1,000,000 + 0 – 1,500,000 = 1,500,000 €

The budgeted Income Statement by Functions/Destination till EBIT without changes is as follows:

Revenues	10,000,000 €
(-) Cost of variable raw materials	- 700,000 €
(-) Cost of assembling line workers	- 1,200,000 €
(-) Cost of energy for manufacturing	- 100,000 €
(-) Fixed Production costs	- 4,000,000 €
Gross Margin	4,000,000 €
(-) Shipping Costs	- 800,000 €
(-) Provisions for the salesforce	- 200,000 €
(-) Fixed Period costs	- 1,500,000 €
+ Other revenues	0 €
EBIT	1,500,000 €

It is now possible to calculate the budgeted Income Statement in the simulation scenario by applying the two changes.

	CURRENT SCENARIO	CHANGE	SIMULATION SCENARIO
Revenues	10,000,000 €	+20%	12,000,000 €
(-) Cost of variable raw materials	- 700,000 €	+20%	- 840,000 €
(-) Cost of assembling line workers	- 1,200,000 €	+20%	- 1,440,000 €
(-) Cost of energy for manufacturing	- 100,000 €	+20%	- 120,000 €
(-) Fixed Product costs	- 4,000,000 €	No changes	- 4,000,000 €
Gross Margin	4,000,000 €		5,600,000 €
(-) Shipping Costs	- 800,000 €	+20%	- 960,000 €
(-) Provisions for the salesforce	- 200,000 €	+20%	- 240,000 €
(-) Fixed Period costs	- 1,500,000 €	- 30%	- 1,050,000 €
+ Other revenues	0 €	No changes	0 €
EBIT	1,500,000 €		3,350,000 €

Budgeted Return on Sales (or EBIT margin) in the simulation scenario = 3,350,000 / 12,000,000 = 27.92%

A. Wrong. Shipping costs are considered as fixed costs.
B. Correct
C. Wrong. Handling line workers are considered as fixed cost.
D. Wrong.

QUESTION 2A (4 points)

In December 2023, you were asked to compute the Enterprise Value (EV) of Darkhill Ltd using the DCF (analytical) approach. You had the following information available about the estimated FCFF (data are in Mln €):

- FCFF (2024): 220 Mln€
- FCFF (2025): 250 Mln€
- FCFF (2026): 260 Mln€
- FCFF (2027): 280 Mln€
- FCFF (2028): 300 Mln€

FCFF was estimated to grow 3% per year after 2028 (over an infinite time horizon).

Moreover, you had the following information concerning 2024 financial statements:

- Asset Turnover Rate (ATR): 1.25
- Revenues: 1,000 Mln €
- Non-current assets (constituted by PPE): 500 Mln €
- Equity: 320 Mln €
- Non-financial Liabilities: 30% of Third Part Liabilities

You also know that:

- K_E (cost of shareholders' capital): 12%
- K_D (average cost of debt): 8%
- Tax rate: 30%

Based on the available information, what is the EV of the Company? For simplicity, assume that the WACC will remain constant over the years and use two digits in the calculations (also for percentages – e.g., 10.42%: keep 10.42% and not just 10%).

A. Around 4,571 Mln €
B. Around 5,075 Mln €
C. Around 3,747 Mln €
D. None of the other answers

Solution

The FCFF for the first five years (2023-2028) are already included in the text. For the computation of the WACC, we use accounting information regarding 2024. In particular, for the computation of Financial Liabilities, we must compute Total Assets (using data about Revenues and ATR):

Total Assets = Revenues/ATR = 1000/1,25 = 800 Mln

Then, since Equity = 320 Mln €, Total Liab = 800 – 320 = 480 Mln €.

And since Non-Financial Liabilities are 30 % of Total Liabilities → Financial Liabilities = 0.7 * 480 = 336 Mln €

Now we have all the data needed to compute WACC:

WACC = 320/ (320+336) * 0,12 + 336/ (320+336)*0.08*(1-0.3) = 8.72 %

Now we can proceed to calculate the value of TV:

TV (2028) = FCFF (2028) * (1 + g)/ (WACC – g) = 300 * (1+0.03)/ (0.0872 – 0.03) = 5,402.10 Mln €

So, EV:

EV = 220/ (1+0,0872) + 250/$(1+0,0872)^2$ + …. 5402.10/ $(1+0,0872)^5$ = 4,570.54 Mln €

Wrong answers:

A. Correct
B. Wrong. WACC is computed using Total Liabilities instead of Financial Liabilities
C. Wrong. WACC is computed without taking into account the tax shield effect
D. Wrong.

QUESTION 2B (2 points)

Still regarding DarkHill Ltd., you have the following additional information available:

EBITDA (2024)	440 Mln €
D&A (2024)	80 Mln €
Day Sales Outstanding - DSO (2024)	54.75 days (computed on 365 days)
Inventory Turnover Rate - ITR (2024)	8
Non-Current Assets (End of 2023)	480 Mln €
Revenues (2023)	880 Mln €

You also know that the DSO and Inventory Turnover Rate values have been computed using end-of-year balance sheet values, and their value – as ratios – will not change from 2023 to 2024.

Based on these data (plus all the information provided in the previous question), what is the expected Change in Account Payables (final – initial) used for the calculation of the FCFF in 2024?

A. + 21 Mln €
B. – 21 Mln €
C. – 59 Mln €
D. None of the other answers

Solution:

EBIT (2024) = EBITDA – D&A = 440 – 80 = 360 Mln €

Final Account Receivables (2024) = 1000* 54.75/365= 150 Mln €

Final Account Receivables (2023) = 880*54.75/365 = 132 Mln €

Final Inventories (2024) = Revenues (2024)/ITR = 1000/8 = 125 Mln €

Final Inventories (2023) = Revenues (2023)/ITR = 880/8 = 110 Mln €

Net Capex = 500 (from Question 2A) – 480 + 80 = 100 Mln €

So:

EBIT	360
-TAXES ON EBIT	-108
D&A	80
DELTA ACCOUNT RECEIV (INIT-FINAL)	-18
DELTA INVENTORIES (INIT-FINAL)	-15
DELTA ACCOUNT PAYABLES (FIN-INIT)	21
-NET CAPEX	-100
FCFF	220

Wrong answers:

A. Correct.
B. Wrong. Wrong sign is used in the calculation of the NOWC
C. Wrong. The calculation of Delta Capex does not consider D&A
D. Wrong.

Question 3A (2 points)

Alpha and Beta are two established companies that compete in the energy infrastructure sector. Both companies are private (not publicly traded). They have positive EBIT and significant growth perspectives.

The two companies are considerably investing in new technologies to improve their performance through smart meters and artificial intelligence while maintaining a stable cash generation, which is a fundamental element for both. Plants and equipment owned by the two companies are cutting-edge (and represent a high portion of non-current assets).

Based on the available information, which of the following statements about relative valuation is correct?

A. The Price/Earnings ratio (P/E ratio) is influenced by different amortization and depreciation policies.
B. Regardless of either an Equity-side or an Assets-side approach, having a positive EBIT for the two companies is not a significant factor when selecting the multiple to be used.
C. Regardless of the specific multiple used in the process of computing the Enterprise Value of each company, the resulting valuation would be equivalent.
D. None of the other answers is correct.

Solution

A. Correct. P/E is affected by different policies for depreciation and amortization because they would affect the value of Earnings.
B. Wrong. Having a negative EBIT will influence the selection of the multiple (e.g., EV/sales instead of EV/EBIT).
C. Wrong. Different multiples will lead to different EV.
D. Wrong.

Question 3B (4 points)

The following information about Alpha and Beta is available (data as of December 2023). You also know that the value of Alpha and Beta has been estimated through a Relative Valuation based on the EV/EBITDA multiple.

	Alpha	**Beta**
Equity Book Value	900 Mln€	700 Mln€
Cash and cash equivalent	1,200 Mln€	980 Mln€
FCFF	450 Mln€	500 Mln €
D / E	1.10	1.15
Equity Market Value	10,710 Mln€	9,625 Mln€
Net financial debt (Debt-Cash)	-210 Mln €	-175 Mln €
EBITDA margin (EBITDA/Revenues)	50%	50%

Comparable companies were selected among the ones listed below (A, B, C, D), which all compete in the same sector.

	Company A	**Company B**	**Company C**	**Company D**
BV Equity	1,200 Mln€	1,100 Mln €	1,300 Mln€	1,000 Mln€
Cash and cash equivalent	1,400 Mln€	1,300 Mln €	1,450 Mln€	1,550 Mln€
D / E	1.10	1.15	1.40	1.30
Earnings growth (2023 vs 2022)	120%	110%	5%	-5%
EBITDA	750 Mln€	500 Mln €	900 Mln€	-150 Mln€
Enterprise Value	15,000 Mln€	11,000 Mln€	45,000 Mln€	2,000 Mln€

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

A. In 2023, Alpha's sales were around 1,000 Mln €, Beta's sales were around 900 Mln€
B. In 2023, Alpha's sales were around 685 Mln €, Beta's sales were around 605 Mln€
C. In 2023, Alpha's sales were around 86 Mln €, Beta's sales were around 67 Mln€
D. None of the other answers is correct

Solution

To calculate sales, you need, first, to estimate EBITDA of Alpha and Beta.

EBITDA can be computed based on relative valuation.

EBITDAx = EVx / (EV/EBITDA) avg

Where EVx = Equity Value x + NFD x

To compute EV/EBITDA avg we need to properly select comparable companies

Selection of comparable companies

Company A and Company B are comparable to the two companies under analysis in terms of risk, cash flows, and growth potential.
Company C is not selected as comparable since it has a low growth rate and higher risk.
Company D cannot be selected because it is presenting negative growth and has negative EBITDA.

Computation of EV/EBITDA avg

EV/EBITDA A = 20
EV/EBITDA B = 22
EV/EBITDA avg = 21

Calculation of EV

EV Alpha = E+NFP = 10,500 mln€

EV Beta = 9,450 mln€

Calculation of EBITDA and sales

EBITDA x = EV x / (EV/EBITDA) avg

EBITDA Alpha = 500 mln€

EBITDA Beta = 450 mln€

Sales = EBITDA / EBITDA margin à Alpha's Sales = 1,000 mln€; Beta's Sales = 900 mln€

A. Correct
B. Wrong. A, B, and C are used as comparables
C. Wrong. BV equity instead of Equity is used to determine the EV
D. Wrong

QUESTION 4 (2 points)

Which of the following statements about corporate cost allocation is correct?

A. Adopting different allocation drivers within a proportional allocation method does not influence the EBIT margin of Business Units.
B. Partial allocation methods based on fees identify corporate units or functions whose capacity is not fully saturated.
C. Corporate cost allocation always necessitates identifying activities that utilize resources associated with the cost to be allocated.
D. None of the other answers.

Solution

A. Wrong. Proportional allocation impacts the EBIT margin of Business Units as it changes how costs are distributed across Business Units, affecting their profitability.
B. Correct.
C. Wrong. Corporate cost allocation does not necessarily require identifying activities for allocating costs to different Business Units. For instance, in the case of complete allocation, costs could be attributed to different Business Units based on sales or headcount without identifying the activities.
D. Wrong.

QUESTION 5 (2 points)

In the context of designing a reporting system for a Business Unit (BU), what does the principle of "specific responsibility" imply?

A. The ability to design a reporting system that accounts specifically for the revenues and costs generated by each Business Unit.
B. The ability to design a reporting system that includes a set of indicators that can be easily quantified.
C. The ability to design a reporting system that measures the impact of BU actions in the short term as well as in the long term.
D. None of the other answers is correct.

Solution

Specific responsibility in the reporting system at the BU level entails the capability to trace each BU's contribution to the enterprise value creation. This involves identifying accountability for specific operations managed by each Business Unit. The correct answer is D.

A. Correct. A Business Unit is responsible for both revenues and costs. Therefore, the system should consider the ability of the BU to generate both revenues and costs.
B. Wrong. The sentence describes the principle of "measurability", which entails the capability to design a system composed of indicators that can be properly measured.
C. Wrong. the sentence describes the principle of "long-term orientation", which entails the capability to design a system composed of indicators that quantify the impact of actions in the long-term
D. Wrong.

QUESTION 6 (2 points)

Spinoza is an Italian company that produces chocolate. Spinoza has two subsidiaries, one in Italy and one in France.

The French subsidiary uses a semi-finished good in some of its final products, which are produced and provided by the Italian subsidiary. This semi-finished good is a cocoa paste with Italian hazelnuts, which is then personalized by the French subsidiary according to the French taste to produce the finished goods.

The transfer price (TP) from the Italian to the French company is based on a full standard cost method plus a mark-up. Spinoza's subsidiaries are free to search for external providers and then decide whether to choose either an internal or an external deal. The full standard cost includes direct material, direct labor, and manufacturing overhead. Period costs are not included. The mark-up is 10% of the full standard cost.

The French subsidiary is assessing buying a new order of cocoa-hazelnut paste (WIP), and they have an internal offer from the Italian subsidiary, but they are also considering, as usual, another Italian company called READY. READY is trusty and reliable. Hence, there would be no differences in the provision in terms of quality, time, sustainability, and flexibility. Furthermore, there is no need to share some know-how, given that the product from READY, which has already been tested, is identical to the product offered by the Italian subsidiary.

These additional data are available for the two offers:

INTERNAL OFFER (Spinoza Italian subsidiary) standard values:

- Direct material: 6 €/kg
- Direct labour: 2 €/kg
- Manufacturing overheads: 4 €/kg.

Direct materials are bought by the Italian subsidiary on a just-in-time procedure, hence purchased only when the order is confirmed. Direct labour workers are permanently hired, and you can consider them as a fixed cost. All manufacturing overheads are fixed costs, except for variable energy (1€/kg).

EXTERNAL OFFER: 7.7€/kg

Which of the following statements is correct?

A. For both the French subsidiary and the parent company (SPINOZA), it is more convenient to go for the external offer of READY.
B. For both the French subsidiary and the parent company (SPINOZA), it is more convenient to go for the internal offer of READY.
C. For the French subsidiary, it is more convenient to go for the external offer of READY; for the parent company (SPINOZA), it is more convenient to go for the internal deal.
D. For both the French subsidiary and the parent company (SPINOZA), it is the same to go for the internal or the external offer.

Solution

The full standard cost is equal to 6+2+4 = 12€/kg, plus the 10% mark up, the TP is 12.12€/kg. Hence, the offer of 7.7€/kg is more convenient from the French subsidiary's perspective. However, under the parent company perspective, only avoidable costs must be considered in choosing the outsourcing or the internal solution: avoidable costs are only direct material and energy, for a total of 7€/kg hence:

A. Wrong. There are different perspectives
B. Wrong. There are different perspectives
C. Correct
D. Wrong. There are different perspectives.

Question 7 (2 points)

Which of the following statements concerning sustainability indicators is correct?

A. The EU regulatory framework requires all large companies and all listed companies (except listed microenterprises) to disclose information concerning risks and opportunities arising from environmental issues but not from governance and social issues.
B. Sustainability indicators cannot be expressed in economic terms because this undermines the principle of double materiality.
C. Sustainability indicators are measured according to shared information protocols that are univocally defined for all listed companies at a worldwide level, regardless of the specific market in which they are listed.
D. None of the other answers.

Solution

A. Wrong. The EU law requires all large companies and all listed companies (except listed micro-enterprises) to disclose information on what they see as the risks and opportunities arising from social, environmental, and governance issues and on the impact of their activities on people and the environment.
B. Wrong. Some sustainability indicators must be expressed in economic terms, for instance, to reflect the impact of some environmental and social risk on the company's financial statement, and this is coherent with the principles of double materiality.
C. Wrong. At present, there are many different reporting frameworks that do not define univocally the information protocol of sustainability indicators.
D. Correct.

QUESTION 8 (2 points)

Which of the following statements concerning financial planning is correct?

A. Considering the level of risk associated with different financial instruments, equity holders have priority over bondholders in case of default.
B. Factoring is a typical instrument of the debt market used for addressing long-term financial needs.
C. Bonds, leasing, and credit lines are all typical instruments of the debt market for addressing short-term financial needs.
D. None of the other answers

Solution

A. Wrong. Bondholders have priority over equity holders in case of default.
B. Wrong. Factoring is a typical instrument of the debt market for short-term horizons.
C. Wrong. Leasing and bonds are typical instruments of the debt market for long-term horizons.
D. Correct

QUESTION 9 (2 points)

Which of the following statements about consolidated financial statements is correct?

A. The main purpose of preparing a consolidated financial statement is to clearly represent the composition of assets and liabilities of each subsidiary that is part of a group.
B. The non-controlling interests represent the value of the portion of the investee that is not owned by the parent company.
C. The main purpose of preparing a consolidated financial statement is to compare the financial indicators of different subsidiaries in a more reliable way.
D. None of the other answers.

Solution

A. Wrong. The main purpose of preparing a consolidated financial statement is to clearly represent the composition of assets and liabilities and income of the group
B. Correct
C. Wrong. The main purpose of preparing a consolidated financial statement is to clearly represent the composition of assets and liabilities and income of the group
D. Wrong