ACCOUNTING, FINANCE & CONTROL

Written Test - Call V – 01st September 2021

QUESTION 1 – (3 POINTS)

The following data as of December 31st, 2020, refer to Foody Ltd, a company that produces and sells bakery and meal solutions (k€ = thousands €):

- Number of shares: 112,000 k
- Nominal value of shares: 1 €/share
- Market price of shares: 2 €/share
- Reserves: 800,000 k€
- Total Equity: 1,272,000 k€
- Income taxes: 60,000 k€
- Taxes paid: 80,000 k€
- Revenues: 3,850,000 k€
- Other income: 10,000 k€
- Cost of Goods Sold (COGS): 2,620,000 k€
- Selling and marketing expenses: 300,000 k€
- Administrative expenses: 350,000 k€

A portion of raw materials used for production activities in December 2020, that amounts to 100,000 k€, will be paid in January 2021.

You also know that at the beginning of the year, the number of shares outstanding was 100,000 k.

Data about financial income and financial interests are not reported, but they are NOT NULL.

Given the available data, which of the following statements is CORRECT:

A. Tax rate around 14%; Gross Profit = 1,230,000 k€
B. Tax rate around 14%; Gross Profit = 1,130,000 k€
C. Tax rate around 19%; Financial income – financial interests = 282,000 k€
D. Tax rate around 18%; Financial income – financial interests = 150,000 k€

SOLUTION

Net profit of the year = Equity - Reserves – Share capital = 1,272,000 k€ - 800,000 k€ - 112,000 k€ = 360,000 k€

EBT = Income taxes + net profit = 60,000 k€ + 360,000 k€ = 420,000 k€

Tax rate = 60,000 k€ / 420,000 k€ = 14%

Revenues - Cost of Goods Sold = Gross profit = 3,850,000 k€ - 2,620,000 k€ = 1,230,000 k€

A. Correct
B. Wrong the calculation of the gross profit: the 100,000 paid in 2021 are deducted from cost of sales.
C. Tax rate calculated over EBIT; Gross profit includes other income.
D. A is actually correct

QUESTION 2 – (3 POINTS)

BU_A and BU_B are two commercial units, without dedicated (i.e., direct) fixed costs.

BU_A has sales = 500 million and an EBIT margin computed before allocating corporate costs = 25%. BU_B has sales = 500 million and an EBIT margin computed before allocating corporate costs = 50%. Corporate costs are 200 million and their allocation is based on sales.

If the EBIT margin does not change and there is an increase of 100 million of the sales of BU_A, which one of the following statements is CORRECT?

A. EBIT of BU_A computed after corporate cost allocation = 150 M€
B. EBIT of BU_A computed after corporate cost allocation = 50 M€
C. EBIT of BU_A computed after corporate cost allocation = 40.9 M€ and EBIT of BU_B computed after corporate cost allocation = 150 M€
D. None of the other answers is correct

SOLUTION

If BU A and BU B have sales equal to 500 each, their EBIT (after CC allocation) is as follows:

BUA = EBIT (before CC allocation) = 500*0.25 =125 → EBIT (after CC allocation) = 125 – 100 = 25

BUB = EBIT (before CC allocation) = 500*0.5 = 250 → EBIT (after CC allocation) = 250 – 100 = 150

If BU A increases its sales of 100 each, the EBIT (after CC allocation) of the BUs is as follows:

Allocation basis = sales = 500 + 600 = 1,100 M€

Allocation coefficient = 200 M€ / 1,100 M€ = 0.18

CC_BU_A = 0.18 * 600 = 109.1 M€

CC_BU_B = 0.18 * 500 = 90.9 M€

BUA → EBIT (before CC allocation) = 600 * 25% = 150 → EBIT (after CC allocation) = 150 – 109.1 = 40.9

BUB → EBIT (before CC allocation) = 500 * 50% = 250→ EBIT (after CC allocation) = 250 – 90.9 = 159.1

QUESTION 3 – (4 POINTS)

STEEL is the largest Italian company on the tube market. The company is the second player in the European market and has a global presence thanks to the production of high-quality pipes.

STEEL is motivated to acquire 100% of BLACK Ltd. This company has been operating mainly in the Asian market for the last 10 years. From the financial documents of BLACK, you know that Revenues = 52.3 million €, EBITDA = 35.9 million €, Net Debt = 17.3 million €.

Looking at global market, there are two potential comparable companies for BLACK:

- BLUE operates globally, Equity Value = 1,728.6 million €, Enterprise Value = 2,600 million €, Revenues = 420.4 million €, EBITDA = 137,1 million €
- GREEN operates globally, Equity Value = 1,104.9 million €, Enterprise Value = 1,561 million €, Revenues = 866 million €, EBITDA = 108 million €

Looking at companies that produce mainly for the Asian market, there are three potential comparable companies for BLACK:

- YELLOW, Equity Value = 202.8 million €, Enterprise Value = 245.8 million €, Revenues = 57.7 million €, EBITDA = 39.2 million €
- RED, Equity Value = 180.1 million €, Enterprise Value = 194.2 million €, Revenues = 59.3 million €, EBITDA = 28.3 million €
- ORANGE, Equity Value = 177.9 million €, Enterprise Value = 194.1 million €, Revenues = 45.8 million €, EBITDA = 32.6 million €

Using the available data and making reasonable assumptions calculate how much STEEL should pay for the 100% of BLACK (round calculations at the second digit).

A. Around 211.02 million €
B. Around 187.61 million €
C. Around 228.34 million €
D. None of the other answers

SOLUTION

BLACK is a manufacturing company and assets-side multiple should be preferred to equity-side ones. Moreover, BLACK is a well-established company that has been operating for the last 10 years. In this view, the "EV over Revenues" multiple should be excluded. The "EV over EBITDA" multiple should be preferred.

There are not enough data about the previous acquisition made by STEEL.

The two global producers cannot be considered comparable companies because of their different coverage of the market and their different size. The three Asian companies are comparable to BLACK in terms of size and competitive location.

$(EV / EBITDA)_{yellow} = 245.8 / 39.2 = 6.27$

$(EV / EBITDA)_{red} = 194.2 / 28.3 = 6.86$

$(EV / EBITDA)_{orange} = 194.1 / 32.6 = 5.95$

Average (EV / EBITDA) = (6.27 + 6.86 + 5.95) / 3 = 6.36

$EV_{black} = 6.36 * 35.9 = 228.32$

The price of BLACK must be calculated on Equity Value

E_{black} = EV – Net Debt = 228.32 – 17.3 = 211.02

Answer B is wrong because EV is calculated using the "EV / revenues" multiple

Answer C is wrong because the price of control package is calculated on EV instead of E

QUESTION 4 – (2 POINTS)

Relative valuation is widely used by financial advisors who must determine the enterprise/equity value of a target company. The reasons are many. Which of the following statements is WRONG?

A. Relative valuation requires far fewer assumptions than methods based on Discounted Cash Flows
B. Relative valuation is easier to understand and to present to clients compared to methods based on Discounted Cash Flows
C. Relative valuation, being based on accounting-based indicators (e.g., EBIT, EBITDA, revenues, Net profit, etc.), calculates the past value of the company and not its present value
D. The calculation of Equity Value passing through asset-side multiples and equity-side multiples produces different values, and, in this view, the choice of the perspective is not trivial

SOLUTION

Answer C is wrong because relative valuation, like Discounted Cash Flows methods, produces an estimation of the present value and not of the historical (book) value

QUESTION 5 – (4 POINTS)

Company X is evaluating the marginal (i.e., differential) impact on the FCFF of the year 2022 due to an investment in automation that is characterized by the following data (concerning the year 2022):

- Initial Spending for technology (all expenses will occur in 2022 and will be fully capitalized) = 200,000 €
- The capitalized expenses will be depreciated over a period (lifetime) of ten years (flat-rate)
- Reduction of cost of personnel (fixed costs) = 40,000 €
- Reduction of other fixed costs = 10,000 €
- Increase in revenues (due to higher responsiveness) = + 120,000 €
- Variable manufacturing costs are 40% of revenues
- Average delay of payments of suppliers (DPO) = 4 months
- Average delay of payments by customers (DSO) = 3 months
- Purchases are equally spread over the 12 months
- Tax rate: 30%
- The company is expected to have positive EBT in the next years either with or without this investment

The delay in payments of suppliers refers only to suppliers of inputs which lead to variable costs. Cost of personnel and other fixed costs are paid with a negligible delay.

The increase in sales will lead to an increase in the final stock of raw materials (+ 15% in value) and of finished goods (+ 10% in value) vs initial values.

Initial value of the inventories:

- Raw materials: 50,000 €
- Finished goods: 90,000 €

Based on this information, the FCFF of 2022 would change of:

A. - 209,100 €
B. - 139,100 €
C. - 78,100 €
D. None of the other answers

SOLUTION

REV	120000
VAR COSTS	48000
PERS	40000
OTHER FIXED	10000
DEP	20000
EBIT	102000
NET EBIT	71400
DEP	20000
INV RM	7500
INV FG	9000
ACC REC	30000
ACC PAY	16000
	60900
CAPEX	200000
FCFF	-139100

a) Wrong (wrong sign in the computation of impact of personnel and fixed cost reduction)
b) Correct
c) Wrong (wrong sign of change in NOWC)

QUESTION 6 – (2 POINTS)

Which one of the following sentences about amortised bonds is CORRECT?

A. They are characterised by floating interests
B. They are always zero-coupon bonds
C. They are less risky for the bondholder than bullet ones
D. None of the other answers is correct

SOLUTION

a) wrong: floating interests are linked to the market index (or official (bank) discount rate or similar)
b) wrong: coupon/zero coupon have to do with interests, not with capital repayment
c) correct

QUESTION 7 – (4 POINTS)

Company BOVISA FC produces and sells its branded football jerseys, and it is drafting its operating budgets for the year 2022. You know the following information regarding the year 2021:

- Marketing & Selling expenses: 45,000 €
- Administrative and general expenses: 36,000 €
- Research and development expenses (not included in general expenses): 19,000 €
- Inventories of finished goods at the end of the year 2021: 4,000 units
- Total value of inventories of finished goods at the end of 2021: 240,000 €
- Inventories of raw materials at the end of the year 2021: 0 units

Regarding the year 2022, you also have the following data:

- Budgeted sales: 10,000 units
- Budgeted average cost of materials per unit: 20 €/u
- Annual salary of a plant worker: 33,000 €
- Annual salary of a supervisor: 45,000 €
- Depreciation costs of the equipment: 100,000 €
- Other fixed overheads (related to the plant): 40,000 €
- Other operating income: 0 €
- Target level of inventories of finished products at the end of the year 2022: 1,000 u
- Target level of inventories of raw materials at the end of the year 2022: 0 u
- Budgeted total period costs are estimated through the incremental approach, with an alpha = 10%

Finally, considering that:

- the production is fully held internally
- there are 5 operators and 1 supervisor in the production plant who are permanently hired with a fixed salary
- the company follows a FIFO approach for the inventories of finished goods

what is the minimum price of the jerseys that is needed to reach a budgeted ROS (EBIT Margin) = 22% for the year 2022?

A. Around 107.7 €/u
B. Around 115.4 €/u
C. Around 84.6 €/u
D. Around 98.7 €/u

SOLUTION

Budgeted production = Budgeted sales + Target ending level of finished goods – Beginning finished goods inventories = 10,000 + 1,000 – 4,000 = 7,000 units

Direct material budget = 20 €/u * 7,000 = 140,000 €

Manufacturing OVH budget = operators + supervisor + depreciation + other OVH = 5 * 33,000 + 1 * 45,000 + 100,000 + 40,000 = 350,000 €

Budgeted full production cost = direct material + manufacturing OVH = 140,000 + 350,000 = 490,000 €

Budgeted unitary production cost = full production cost / budgeted production = 490,000 / 7,000 = 70 €/u

Budgeted COGS = production sold * unitary production cost + cost of inventories sold = (7,000 – 1,000) * 70 + 240,000 = 660,000 €/u

Budgeted Period costs = Period costs of 2021 * (1 + alpha) = (45,000 + 36,000 + 19,000) * (1 + 10%) = 110,000€

EBIT = Revenues – COGS – Period Costs

EBIT = ROS * Revenues

ROS * (Revenues) = Revenues – COGS – Period Costs

Revenues (1 – ROS) = COGS + Period Costs

Revenues = price * 10,000 u = (COGS + Period Costs) / (1 - ROS)

Price = 98.7

QUESTION 8 – (2 POINTS)

Company A has a full actual cost policy for transfer pricing, but it is now deciding to move to full standard cost. The transfer pricing policy is used for all the transactions between the two subsidiaries of A: specifically, the upstream subsidiary A1 sells to the downstream subsidiary A2. Which one of the following sentences is CORRECT, considering that the production capacity of A1 is abundantly superior to the total demand (i.e., the internal demand of A2 and the external one)?

A. With the same quantity produced and sold by A1, moving to the full standard cost policy, the EBIT of subsidiary A2 will be always higher compared to the EBIT calculated with full actual cost policy.
B. With the same quantity produced and sold by A1, in the calculation of the total [€] transfer price to be charged to A2, total variable costs remain the same with both policies.
C. With the same quantity produced and sold by A1, in the calculation of the total [€] transfer price to be charged to A2, the quantity that should be multiplied by the unitary transfer price remains the same with both policies.
D. With the same quantity produced and sold by A1, adopting either the full standard cost or the full actual cost, the EBIT of the corporation will always remain the same.

Solution

Answer A is wrong, the shift of policy can lead to both an increase or a decrease. The shift of policy does not always lead to an increase of downstream BU's EBIT because EBIT does not only depend on the acquisition cost of materials from the upstream BU.

Answer B is wrong, the shift of policy can lead to a change in variable costs. Indeed, this shift of policy is introduced to reduce inefficiencies of upstream BU (and so also of the downstream one).

Answer C is correct because what changes in the shift of policy is only the unitary transfer price.

Answer D is wrong, the shift of policy can change the competitiveness of the buying BU and its EBIT – and in this light the EBIT of the Corporate

QUESTION 9 – (4 POINTS)

You have the following data extracted from the reclassified income statement and balance sheet of Company Gamma. Data refers to the 2020 fiscal year.

- Cash and cash equivalents: 6 k€
- Long Term financial debts: 120 k€
- Depreciation and Amortization: 4 k€
- EBIT: 30 k€
- Net financial expenses: 2 k€
- EBT: 29 k€
- Income taxes: 12 k€
- Profit and loss from discontinued operations: 0 k€
- Current financial activities: 0 k€

You also know the following financial ratios:

- D/E: 2.9, where D includes financial liabilities only
- ROE: 18%

Based on the available data, NFP / EBITDA is equal approximately to:

A. 7.88
B. 8.06
C. 3.47
D. 7.44

SOLUTION

Net income = EBT - taxes	17.00
ROE = Net income/ Equity --> **Equity** = Net income/ROE	94.44
D = financial liabilities (current + non current)	273.89
NFP = financial liabilities (current+ non current) - cash and cash equivalents	267.89
EBITDA = Operating results + D&A	34.00
NFP/EBITDA	**7.88**

A. Correct
B. Wrong since the value of cash and cash equivalent is not included in the calculation of NFP
C. Wrong since NFP has been considered equal to Long term debts
D. Wrong since net financial expenses have been included in the calculation of operating results

QUESTION 10 – (2 POINTS)

Which one of the following statements about productivity indicators is CORRECT?

A. Productivity indicators can be applied only in organizations where there is a manufacturing process, while they cannot be applied in service companies
B. Productivity indicators are quantified as absolute value when productivity is described in financial terms
C. Productivity indicators cannot be applied in multi-product companies because it is not possible to quantify the "output"
D. Productivity indicators can be applied in case of multiple inputs because it is possible to quantify the single production factor as well as a combination of different inputs

SOLUTION

a) Wrong because productivity indicators can be applied both in manufacturing and service companies
b) Wrong because productivity indicators are quantified as a ratio between input and output
c) Wrong because in multi-product companies, the output can be quantified with physical weights or monetary weights
d) Correct