SSEI
Sanjay Saraf Educational Institute Pvt. Ltd.
A positive NPV Training Center

CFA LEVEL 1

MARATHON SERIES

CORPORATE ISSUERS

Question 1:

An automobile manufacturer has a factory producing low-margin compact cars. The company is considering converting the factory to the production of luxury sedans, financed by borrowing the necessary funds. The company is also considering selling the factory. Using net present value (NPV) analysis, which of the following is least likely an incremental cash flow for investing in luxury sedan production?

A. Potential proceeds from selling the factory
B. Financing costs of funds borrowed to finance investment
C. Forgone profits on the compact cars no longer being produced

Solution:

B is correct.

Potential investment projects should be evaluated based on their incremental cash flows. Incremental refers to changes in cash flows that result from the decision to invest or not invest in a project. In this scenario, incremental cash flows should include:

Project cash flows: the costs of retooling the factory and operating cash flows from producing the luxury sedans;

Opportunity costs: cash flows forgone since the proceeds from selling the factory and operating cash flows from producing compact cars are not realized (Choices A and C); and

Externalities: the reduction in net revenues from other product lines if customers buy the new luxury sedans instead of other automobiles produced by the company.

Cash flows the company should not consider include:

Sunk costs: the funds previously spent to build and maintain the factory; and

Financing costs: the costs factored in when cash flows are discounted using an opportunity cost of capital.

Subtracting the interest expense from project cash flows amounts to double counting the financing costs.

Note:

Potential investment projects should be evaluated based on their incremental cash flows: the changes in cash flows that result from the decision to invest or not invest in a project. Cash flows that should be considered include project operating cash flows, opportunity costs, and externalities. Sunk costs and financing costs should be excluded.

Capital budgeting cash flow considerations		
Characterization	**Definition**	**Include**
Incremental cash flows	Cash flows resulting from decision to invest	Yes
Sunk costs	Funds spent previously	No
Opportunity costs	Returns from alternate use of investment funds or fixed assets	Yes
Externalities	Cash flow impacts on other company investments	Yes
Financing costs	Cost of capital to invest	No

Question 2:

A mining company sold 3,000 kilos of gold last year at a price of €45,000 per kilo and at a variable cost of €33,000 per kilo. The company had €150,000,000 in fixed operating costs and €60,000,000 in fixed financing costs. All else equal, in order to break even, the company must increase sales by an amount closest to:

A. 9,500 units.

B. 14,500 units.

C. 17,500 units.

Solution:

B is correct.

Total breakeven unit quantity

$$Q_{BE} = \frac{\text{Fixed operating costs} + \text{Fixed financing costs}}{\text{Unit price} - \text{Unit cost}} = \frac{F + C}{P - V}$$

The breakeven unit quantity (QBE) is the number of units that must be sold for a company's revenues to equal its total costs, resulting in a net income of zero. When this occurs, the company becomes profitable, having sold enough units for its total contribution margin to cover its fixed costs.

To determine QBE, a company's fixed operating costs (F) and fixed financing costs (C) are added together and then divided by the per-unit contribution margin, which is the unit price (P) (ie, per-unit revenue) minus the variable unit cost (V):

$$Q_{BE} = \frac{150{,}000{,}000 + 60{,}000{,}000}{45{,}000 - 33{,}000}$$

$$= \frac{210{,}000{,}000}{12{,}000}$$

$$= 17{,}500$$

The company will reach QBE when 17,500 kilos of gold have been sold. Last year, 3,000 kilos were sold, so the increase in sales must be 14,500 (17,500 − 3,000) for the company to break even.

Question 3:

An analyst estimates a project's cash flows as follows:

Year	0	1	2	3
Cash Flow	−4,000,000	800,000	1,500,000	2,700,000

The company funds its projects using 40% debt and 60% equity. Its cost of equity is 10%, and its after-tax cost of debt is 6%. The company plans to raise new, external capital to fund this project. Underwriting and other costs for raising new equity are 3% of the amount to be raised. Based on this information and using the recommended approach, the net present value of this project is *closest* to:

A. 91,720

B. 146,000

C. 62,250

Solution:

C is correct.

WACC	= 0.4×6 + 0.6×10 = 8.4%
Underwriting cost	= 4,000,000 × 60 × 3% = 72,000
Initial cash outflow(CF0)	= -4,072,000
CF1	= 8,00,000
CF2	= 1,500,000
CF3	= 2,700,000
I	= 8.4%
CPT NPV	= 62,250

Question 4:

An e-commerce company has recently partnered with several independent local retailers to offer customers the option to pick up their orders from these retailers. Which of the following is least likely to be affected by this partnership?

A. The e-commerce company's supply chain

B. The e-commerce company's value chain

C. The e-commerce company's value proposition

Solution:

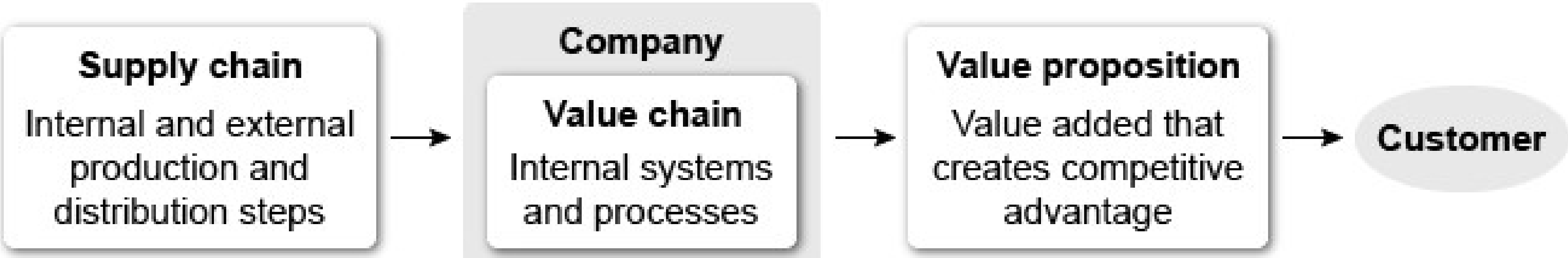
C is correct.

This question requires an understanding of the impact of a partnership with independent local retailers on an e-commerce company's value chain, supply chain, and value proposition.

A. The e-commerce company's supply chain is likely to be affected by this partnership as it involves a change in the delivery process. The company will need to coordinate with the retailers to ensure that the orders are delivered to the correct locations.

B. The e-commerce company's value chain is likely to be affected by this partnership as it involves changes to the internal systems and processes that support the company's operating and administrative activities. The company will need to integrate the retailers' systems and processes into its own to ensure seamless order fulfilment.

C. The e-commerce company's value proposition is least likely to be affected by this partnership. While the partnership may provide a more convenient delivery option for customers, it does not directly impact the value created by the company's competitive advantages such as product differentiation, customer service and support, and pricing.



Question 5:

A software company offers its product at a lower price to students and non-profit organizations, while charging a higher price to businesses. Which of the following best describes this pricing strategy?

A. Bundled pricing

B. Psychological pricing

C. Price discrimination

Solution:

C is correct.

The pricing strategy described in the scenario is an example of price discrimination. Price discrimination occurs when a company charges different prices for the same product or service to different customers or groups of customers. In this case, the software company is charging a lower price to students and non-profit organizations, who are likely to have less purchasing power, and a higher price to businesses, who are likely to have a higher willingness to pay. This is a common form of price discrimination, known as "group pricing."

(Choice A) Bundled pricing involves selling two or more products or services for a single price, which is usually lower than the sum of the individual prices. This pricing strategy is often used to encourage customers to buy more products or services.

(Choice B) Psychological pricing involves using pricing tactics to influence customers' perception of a product or service. For example, pricing a product at $9.99 instead of $10.00 is a form of psychological pricing, as customers may perceive the product to be significantly cheaper.

In summary, the pricing strategy described in the scenario is an example of price discrimination, which involves charging different prices to different groups of customers based on their willingness to pay.

Question 6:

ABC Company is a publicly listed firm in the retail industry that has been experiencing declining profits and increasing competition. The current management team is interested in taking the company private to have more control over strategic decision-making and reduce costs. Which of the following methods is most likely to be used to take ABC Company private?

A. Direct listing

B. SPAC acquisition

C. Management buyout

Solution:

C is correct.

The most appropriate answer is C) Management buyout.

As stated in the case study, ABC Company's current management team is interested in taking the company private. A management buyout is a method of taking a public company private where the buyer is the company's internal management team. This would give the management team greater control over strategic decision-making and allow them to focus on reducing costs and executing a turnaround.

Choice A, Direct listing, is a method of going public, not private. A direct listing is when a company goes public by listing its existing shares on a public exchange.

Choice B, SPAC acquisition, is a method of taking private companies public, not the other way around. A SPAC is a special purpose vehicle used solely for buying private companies and taking them public.

Overall, a management buyout is the most appropriate method for ABC Company's current management team to take the company private.

Question 7:

Company X is an e-commerce platform that offers a wide range of products and services from various sellers. Company X charges a commission on each transaction made through its platform. Company X also offers its own products, which are sold under its own brand name. What type of e-commerce business model best describes Company X?

A. Aggregator

B. Affiliate marketer

C. Marketplace business

Solution:

C is correct.

A marketplace business facilitates transactions between parties, where products or services are not marketed under the business's own brand. In this case, Company X offers products from various sellers and charges a commission on each transaction, which indicates that it operates as a marketplace business. Additionally, the fact that Company X offers its own products sold under its own brand name doesn't change its overall business model. Therefore, the correct answer is C, Marketplace business.

(Choice A) An aggregator markets services provided by other parties under its own brand. Therefore, if all transactions were sold under Company X's own brand, it would have been described as an aggregator.

(Choice B) An affiliate marketer generates leads and sales for its clients and earns a commission from the sales or leads generated. This model does not fit the description of Company X's business model.

E-commerce business models		
	Description	**Examples**
Affiliate marketer	Generates commissions by promoting and selling clients' products and services	Social influencers that specialize in promoting luxury brand clothing
Marketplace business	As a digital marketplace, facilitates transactions between numerous buyers and sellers	Amazon Marketplace, eBay
Aggregator	Under its own brand, markets services provided by other parties	Airbnb, Uber, Spotify, Turo

Question 8:

XYZ Corporation has recently been criticized for its lack of transparency and accountability in its corporate governance practices. As a potential investor in the company, which of the following statements are accurate regarding corporate governance?

I. The board of directors should be composed of a majority of independent directors to ensure unbiased decision-making.

II. The company should have a clear code of ethics and conduct that is communicated to all employees and stakeholders.

III. The CEO should have complete control over executive compensation to ensure alignment with company performance.

A. I & II.

B. II & III

C. I & III

Solution:

A is correct.

Corporate governance refers to the system of rules, practices, and processes by which a company is directed and controlled. It encompasses the relationships among a company's management, its board of directors, shareholders, and other stakeholders.

Statement I is accurate. A majority of independent directors on the board ensures unbiased decision-making and reduces the potential for conflicts of interest.

Statement II is accurate. A clear code of ethics and conduct communicates the company's values and expectations to all employees and stakeholders, promoting transparency and accountability.

Statement III is inaccurate. Executive compensation should be set by a committee of independent directors to avoid potential conflicts of interest.

Therefore, the correct answer is A, as statements I and II are accurate regarding corporate governance.

Question 9:

ABC Corp. has an audit committee comprising three members: a retired CEO, a professor of law, and a former CFO. Which of the following statements regarding the audit committee is least likely accurate?

A. Audit committee monitors the financial reporting process

B. All members of the audit committee should be financial experts.

C. The audit committee is responsible for recommending and compensating external auditors.

Solution:

B is correct.

An audit committee oversees and ensures the effectiveness of audit and control systems in a company by monitoring the financial reporting process. It is comprised of independent non-executive (external) directors. The functions of the audit committee include:

1. Ensuring that financial statements are ethically prepared and reflect the company's true financial position.
2. Ensuring that a company's internal audit function is independent and competent.
3. Recommending the appointment of external auditors and their remuneration.
4. Analyzing the reported audit reports and advising a company on the way forward.

While financial expertise is desirable, it is not a requirement for all members of the audit committee. However, all members of the audit committee should be independent to prevent any insider influence. Therefore, statement B is least likely accurate.

Statement A is accurate because Ensuring that financial statements are ethically prepared and reflect the company's true financial position is a key function of audit committee Statement C is accurate because the audit committee recommends the appointment of external auditors and proposes their compensation.

Question 10:

XYZ Ltd. is considering two mutually exclusive projects, A and B. Project A requires an initial investment of $100,000 and is expected to generate cash flows of $30,000 per year for five years. Project B requires an initial investment of $200,000 and is expected to generate cash flows of $60,000 per year for five years. The cost of capital is 8%.

Which of the following statements is most accurate regarding the projects?

A. Project A has a higher NPV than Project B.

B. Project B has a higher NPV than Project A.

C. The projects have the same NPV.

Solution:

B is correct.

To calculate the NPV of Project A:

NPV(A) = $-100{,}000 + 30{,}000/1.08 + 30{,}000/(1.08)^2 + 30{,}000/(1.08)^3 + 30{,}000/(1.08)^4 + 30{,}000/(1.08)^5$

NPV(A) = 19,781.30

To calculate the NPV of Project B:

NPV(B) = $-200{,}000 + 60{,}000/1.08 + 60{,}000/(1.08)^2 + 60{,}000/(1.08)^3 + 60{,}000/(1.08)^4 + 60{,}000/(1.08)^5$

NPV(B) = $39,562.60

Therefore, Project B has a higher NPV than Project A. Option B is the correct answer.

Question 11:

A company is looking to allocate capital to several potential projects. Which of the following steps is least likely a part of the capital allocation process?

A. Conducting due diligence on potential projects to assess their profitability.

B. Determining a firm-wide capital budget for the upcoming year.

C. Hiring a new team to manage the selected projects.

Solution:

C is correct.

The capital allocation process involves four key steps:

Idea generation: This step involves identifying potential projects that could generate cash flows for the company.

Investment analysis: In this step, the profitability of each potential project is analyzed by forecasting future cash flows.

Capital allocation planning: This step involves organizing the profitable proposals into a coherent whole that fits the company's overall strategies, taking into account the timing of each project.

Monitoring and post-audit: This final step involves comparing actual results to forecasted results and making any necessary adjustments to improve future investments.

Hiring a new team to manage selected projects is not a part of the capital allocation process, as it falls outside the scope of identifying, analyzing, and selecting potential projects. Therefore, option C is the least likely step of the capital allocation process.

Question 12:

A company has an equity beta of 1.5, a debt-to-equity ratio of 1/4, and marginal tax rate of 40%. The asset beta of the company is closest to:

A. 1.30.

B. 1.50.

C. 1.75.

Solution:

A is correct.

$$\beta_{asset} = \beta_{equity}\left[\frac{1}{1 + ((1-t)\frac{D}{E})}\right]$$

$$= 1.5\left[\frac{1}{1 + (0.6 \times 0.25)}\right]$$

$$= 1.5 \times 0.8696$$

$$= 1.3044$$

Note: We generally assume that a company's debt does not have market risk, so . It means that the returns on Debt do not vary with the returns on the market, which we generally assume to be true for most large companies.

B is incorrect. It equates the equity beta of 1.5 to the asset beta.

C is incorrect. It's the sum of the equity beta and the Debt: equity ratio

Question 13:

A company has been facing increasing competition in the market, which has led to a decrease in sales volume and a decrease in sales price. At the same time, the company has decided to invest in new technology to improve efficiency, which has increased its fixed costs. What is the most likely effect on the company's interest coverage ratios?

A. Increasing.

B. Decreasing.

C. Remaining unchanged.

Solution:

B is correct.

An increase in fixed costs increases operating risk, while a decrease in sales volume and sales price increase sales risk. The combination of higher operating risk and realized adverse sales risk would result in lower earnings before interest and taxes (EBIT) and cash flow from operations (CFO). Both EBIT and CFO are typically the numerator for interest coverage ratios. A lower numerator leads to a lower ratio, indicating that the company's EBIT or CFO covers interest expense fewer times. Therefore, the interest coverage ratios are most likely to decrease in this scenario.

Question 14:

Company ABC, at the urging of its majority shareholders, has been aggressively buying back shares, leading to a rise in share price and a significant increase in the company's debt-to-equity (D/E) ratio from 1 to 9 over the last three years. The board of directors of the company is primarily made up of executive members. Minority shareholders have also benefited from the increase in share price. In this scenario, which of the following relationships has the most potential for conflict?

A. Shareholders and managers/directors.

B. Shareholders versus creditor interests.

C. Minority shareholders versus controlling shareholders.

Solution:

B is correct.

Creditors' interests may be jeopardized when the company increases its borrowings to a level that increases default risk. The distribution of excessive dividends to shareholders in the form of share buybacks might also conflict with creditors' interests if it impairs the company's ability to pay interest and principal. In this case, the company's D/E ratio has increased to a high level, indicating a significant amount of debt. This high level of debt could potentially lead to default risk, which would negatively affect the interests of the company's creditors.

Option A is incorrect as shareholders and managers/directors typically have aligned interests as both parties aim to maximize shareholder value.

Option C is incorrect as controlling shareholders are typically the majority shareholders and have significant power to control the company's decisions. Minority shareholders may have a potential conflict of interest with controlling shareholders, but this conflict is not as significant as the conflict between shareholders and creditors in this scenario.

Question 15:

XYZ Company recently faced a controversy when the CEO was accused of using company resources for personal gain. In response, the company adopted the following definition of corporate governance: "Corporate governance is the system of internal controls and processes that ensures ethical behavior, accountability, transparency, and fairness in all company operations and relationships with its stakeholders, including shareholders, employees, customers, suppliers, and the wider community."This definition aligns most closely with:

A. stakeholder theory.

B. agency theory.

C. shareholder theory.

Solution:

A is correct.

Stakeholder theory emphasizes that a company has a responsibility not only to its shareholders but also to all of its stakeholders, including employees, customers, suppliers, and the community. The definition clearly indicates that the company is taking a broader view of corporate governance that goes beyond the interests of shareholders alone. It emphasizes ethical behavior, accountability, transparency, and fairness in all company operations, which are consistent with the principles of stakeholder theory. The reference to shareholders as one of the stakeholders in the definition does not necessarily mean that the company is following shareholder theory, as stakeholder theory acknowledges the importance of shareholder interests but does not prioritize them above all other stakeholders.

Question 16:

Company XYZ has had a constant balance sheet amount for net property, plant, and equipment (PPE) for the past 5 years. The capital allocation committee has approved projects over those 5 years, but the fixed capital investment net of depreciation has been $0. Which of the following types of projects has the company most likely exclusively invested in?

A. Replacement projects that maintain the existing size of the business.

B. Management pet projects that have no real economic value.

C. Regulatory, safety, and environmental projects that do not add to the size of the business.

Solution:

A is correct.

Replacement projects maintain the existing size of the business, and if fixed capital investment net of depreciation is $0, that means that fixed capital investment equals depreciation. If this occurs, net PPE would be the same amount each year as gross PPE would increase by the amount of the increase in accumulated depreciation. Both options B and C would most likely not display the same pattern in net PPE for 5 years.

Option B implies that management is investing in projects that do not add real economic value, which would lead to a decrease in net PPE over time.

Option C implies investments that do not add to the size of the business, but they would still increase gross PPE and therefore would not result in a constant net PPE.

Question 17:

An analyst gathers information on cash flows (in SGD) for three independent projects:

PROJECT A	PROJECT B	PROJECT C
-5000	-6000	-8000
-2000	2000	2000
250	3000	3000
800	3100	2500
1500	1000	5000
3600	700	-2100
2400	200	-2000

Which of these projects is most likely to have multiple IRRs?

A. PROJECT A

B. PROJECT B

C. PROJECT C

Solution:

C is correct.

"In a nonconventional cash flow pattern, the initial outflow is not followed by inflows only, but the cash flows can flip from positive to negative again (or even change signs several times)."

Projects with non-conventional cash flows are most likely to have more than one IRR.

Project C has an unconventional cash flow pattern. Thus, Project C is most likely to have multiple IRR problems.