INSTITUTE OF ACTUARIES OF INDIA

Subject CB1 – Business Finance

May 2024

INDICATIVE SOLUTION

Introduction

The indicative solution has been written by the Examiners with the aim of helping candidates. The solutions given are only indicative. It is realized that there could be other points as valid answers and examiner have given credit for any alternative approach or interpretation which they consider to be reasonable.

Solution. 1) D **[2]**
Solution. 2) C **[2]**
Solution. 3) C **[2]**
Solution. 4) C **[2]**
Solution. 5) B **[2]**
Solution. 6) D **[2]**
Solution. 7) C **[2]**
Solution. 8) C **[2]**
Solution. 9) A **[2]**
Solution. 10) B **[2]**
Solution. 11) D **[2]**
Solution. 12) A **[2]**
Solution. 13) D **[2]**
Solution. 14) A **[2]**
Solution. 15) C **[2]**
Solution. 16) A **[2]**
Solution. 17) B **[2]**
Solution. 18) D **[2]**
Solution. 19) C **[2]**
Solution. 20) C **[2]**

Solution. 21) **i)** NPV = -150 + 50/1.12 + 80/1.12^2 + 100/1.12^3 = 29.60 [2]
IRR = 21.92% [2]
[4]

ii) Advantages of NPV method over Internal Rate of Return

1. Under NPV method, set of interest rates can be used depending on the certainty of the cashflows, for IRR in contrast there is only one solution
2. While the average NPV of a range of scenarios can be found simply by summing the value multiplied by the probability of the scenario, this is not the case for the internal rate of return.
3. Nonsense results can be obtained if the initial capital is small, giving very high positive (or negative) solutions, two solutions or no solution at all
4. IRR equation can sometimes have multiple solutions, especially if there are net negative cashflows at some points during the operating life of the project or at completion. This has helped to make it less popular than the NPV as a measure of project worth.
5. NPV provides the actual cash/asset value of the project's profitability, making it easier to understand and compare with other projects.
6. NPV explicitly considers the discount rate and the time value of money, providing a more accurate measure of the project's profitability.
7. NPV is less sensitive to multiple rates of return or unconventional cash flow patterns compared to IRR, which can sometimes lead to ambiguous results.
8. NPV can handle projects with both conventional and unconventional cash flows, while IRR may encounter difficulties with non-standard cash flow patterns.

[2]

(Any 4-5 points)

[6]

Solution. 22)

Profit & Loss account	INR	INR	
Revenue		**300,000**	
Cost of sales			
Raw materials	50,000		[0.5]
Less increase in inventories	(10,000)		[0.5]
Wages and Salaries[2]	50,000		[0.5]
Depreciation[3]	107,000		[0.5]
Total		**(197,000)**	
Gross Profit		**103,000**	[0.5]
Expenses			
Rent		(25,000)	[0.5]
Misc		(2,000)	[0.5]
Total		(27,000)	
Operating profit		76,000	
Finance cost[4]		(27,000)	[0.5]
Profit before tax		49,000	
Tax at 15%		7,350	[0.5]
Profit for the year attributable to equity holders		**41,650**	[0.5]

Notes:
1. No dividends were paid to ordinary shareholders
2. Wages and salaries are assumed to vary directly with output and therefore are included in the cost of sales [0.5] [0.5]
3. (500,000 cost of old assets + 35,000 new purchase) * 20% = INR 107,000
4. 15% * 180,000 = INR 27,000

Statement of Financial position as at 31st March 2024

Assets	INR	INR	
Non-Current assets			
Cost[1]	535,000		[1]
Less Depreciation[2]	207,000		[1]
		328,000	
Current assets			
Inventories[3]		85,000	[1]
Trade receivables		12,500	[0.5]
Cash[4]		128,500	[1]
		226,000	
Total assets		**554,000**	[0.5]
Equity and Liabilities			
Ordinary share capital		200,000	[0.5]
Reserves[5]		**92,150**	[1]
Total equity		**292,150**	
Non-current liabilities			
15% Debenture loan		180,000	[0.5]
Current liabilities			
Trade payables[6]		74,500	[1]
Tax provision		7,350	[0.5]
Total liabilities		**261,850**	[0.5]
Total Equity and liabilities		**554,000**	[1]

Notes:
1. INR 500,000 carried forward, plus INR 35,000 purchased this year [0.5]
2. INR 100,000 from last year's statement of financial position plus INR 107,000 from this year's statement of profit or loss [0.5]
3. INR 75,000 from last year's statement of financial position plus INR 10,000 increase in inventories [0.5]
4. INR 15,000 from last year's statement of financial position plus INR 113,500 increase in cash [0.5]
5. INR 50,500 carried forward from last year's statement of financial position plus INR 41,650 from this year's profit [0.5]
6. INR 72,000 carried forward from last year, plus this year's increase of INR 2,500 [0.5]

correct format of P&L and Balance Sheet- 1 mark

[Max 20]

<u>Alternate solution where Trade Payables is considered as INR 7,200 instead of INR 72,000.</u>

No change in Profit & Loss statement.

Statement of Financial position as at 31st March 2024

Assets	**INR**	**INR**
Non-Current assets		
Cost[1]	535,000	
Less Depreciation[2]	207,000	
		328,000
Current assets		
Inventories[3]		85,000
Trade receivables[4]		12,500
Cash[5]		128,500
		226,000
Total assets		**554,000**
Equity and Liabilities		
Ordinary share capital		200,000
Reserves[6]		**92,150**
Total equity		**292,150**
Non-current liabilities		
15% Debenture loan		180,000
Current liabilities		
Trade payables[7]		9,700
Tax provision		7,350
Total liabilities		**197,050**
Total Equity and liabilities		**489,200**

Notes:
Notes 1 to 5 will remain same as above. There is a change in Notes – 6, which is as follows.
INR 7,200 carried forward from last year, plus this year's increase of INR 2,500
[Marking scheme same as earlier solution]

Solution. 23) Goodwill is defined as the amount paid in excess of the nominal value of the shares and reserves acquired. [1]

The nominal value of the shares and reserves in Apple Ltd is 100,000. Mango plc is going to buy 50% of the company's share capital and reserves. Therefore, the book value of the asset acquired is 50% of 100,000, i.e. 50,000. [1]

The share capital of Apple Ltd is made up of 4000 INR 10 shares. Mango plc will therefore buy 2000 shares. [1]

It will pay 20+(2*200) = 420 for every 5 shares it buys.
It will therefore pay: (2000/5)*420 = 168,000 [1]

The Goodwill is therefore: 168,000 – 50,000 = 118,000 [1]
[5]

Solution. 24) Possible motives include:

Synergy and cost savings

By combining their operations, the companies can eliminate duplicate functions and achieve economies of scale. This can lead to cost savings in areas such as administration, marketing, and infrastructure. [1]

Market expansion

The merger could enable the companies to broaden their market reach and customer base. This might be particularly attractive if the companies operate in complementary geographic regions or serve different customer segments. [1]

Enhanced Competitive position

Merging can strengthen the companies' competitive position within the industry. It may allow them to better compete with larger competitors or respond more effectively to changes and challenges in the market. [1]

Diversification of Products and services
The merger could facilitate diversification of the companies' product and service offerings. This can help reduce reliance on any single line of business and provide opportunities for cross-selling to existing and new customers [1]

Access to Talent expertise

Combining forces can bring together a pool of talented professionals and specialized expertise from both companies. This can enhance innovation, operational capabilities, and overall performance. [1]

Financial Benefits

[1]

A merger can result in improved financial performance through increased revenue, profitability, and shareholder value. This can be achieved through

factors such as enhanced pricing power, improved underwriting practices, and more efficient capital utilization.

Regulatory compliance

In some cases, regulatory requirements or changes in the regulatory environment may drive companies to merge in order to meet compliance standards more effectively or to navigate regulatory complexities more efficiently. [1]

Strategic alignment

The companies may have shared strategic goals or visions that can be better realized through a merger. This alignment of strategic objectives can create synergies and drive long-term value creation for stakeholders. [1]

[Any 5 Points which directly or indirectly refer the above motives/objectives]

[Max 5]

Solution. 25) ***How will listing help the company in this high growth phase***

1. Listing allows the company to sell new shares to a wide market and so to raise capital at the point of listing (the company can choose a method of obtaining a listing that raises capital) [1]
2. Listing will also make it easier to raise additional equity finance in future from an expanded shareholder base [1]
3. Listing will also make it easier to raise short and long-term debt finance in future, because lenders feel safer and happier about lending money to a listed company (since it has to meet the exchange's initial and on-going requirements). [1]
4. Listing on a stock exchange will give existing shareholders a convenient exit route, *e.g.* venture capitalists who supported the company in its early years and wish to realise their investment [1]
5. A listing makes the company's shares more marketable and more accurately and easily valued [1]
6. This increases the attraction of holding the shares, *e.g.* it enables shareholders to use the shares as backing for their own borrowing [1]
7. It enables the company to offer its shares to shareholders in a target company in a takeover bid. [1]
8. A listing will also make employee share participation and/or director share option schemes more attractive, which can improve employee retention [1]
9. Listing may improve the status of the company and increase public awareness of the company leading to increased sales. [1]

[Max 7]

Possible concerns of major shareholders

1. Any cost that the company incurs in obtaining a listing (both initial cost and on-going cost associated with meeting the continuing obligations) is likely to reduce the returns to its shareholders. Such costs may not be directly reflected in the share price [1]
2. As 25% of the shares must be in public hands, the existing shareholders may see their control over the company being reduced
3. Listing will make an unwelcome takeover harder to avoid [1]

4. These disadvantages are particularly relevant if the company is currently owned by a small number of people, i.e. if it is a family-owned business [1]

[1]

[Max 3]

Solution. 26)

1. Capital budgeting relates to a company's decisions as to which real assets to purchase and which projects to invest in (the investment decision) [1]
2. The capital budgeting decision is likely to fall under the remit of the Chief Financial Officer (CFO) but will also involve input from many other managers in different areas of the company [1]
3. Capital budgeting is of importance because:
    a. The choice of which project should be pursued is rarely obvious and the company is likely to face many alternative choices [1]
    b. Projects may be complex to assess and there is the risk that a sub-optimal choice of project is made [1]
    c. Projects are likely to involve significant financial investment, so an incorrect capital budgeting decision can have severe consequences for the company [1]
    d. The capital budgeting decisions will have a significant bearing on the direction and pace of a firm's growth. [1]

[Max 5]

Solution. 27) Non-compliance with ESG (Environmental, Social, and Governance) standards can lead to several issues for companies across various dimensions:

1. Reputational Risk: It is essential that the Company manages healthy and fair relationship with employees, supply chain, customers and the communities in which it operates. ESG non-compliance can tarnish a company's reputation. Stakeholders increasingly scrutinize companies' ethical and sustainable practices. Negative publicity stemming from environmental violations, labour controversies, or governance scandals can erode trust among customers, investors, employees, and the broader community. [1]
2. Financial Consequences: ESG criteria includes how a Company deals with issues such as Executive pay and Shareholder rights. Shareholder and investors, particularly those focused on sustainable investing, may divest from or avoid investing in non-compliant companies, leading to lower demand for their stocks and potential declines in market valuation. Additionally, companies may face higher borrowing costs or difficulties accessing capital as lenders and investors factor ESG performance into their investment decisions. [1]
3. Regulatory Scrutiny: Companies that fail to comply with these ESG related regulations may face fines, penalties, or legal action, adding further financial strain and reputational damage. Moreover, regulatory non-compliance can disrupt operations and hinder growth prospects. [1]
4. Operational Risks: ESG issues pose tangible operational risks for companies across their value chains. Environmental risks, such as pollution, resource depletion, or climate change-related impacts, can disrupt supply chains, trigger regulatory interventions, and result in costly remediation efforts. Social risks, including labour disputes, human rights violations, or community conflicts, can lead to production disruptions, project delays, or legal liabilities. Governance lapses, such as boardroom scandals or accounting irregularities, can undermine corporate integrity, destabilize management and erode investor confidence. [1]
5. Legal Liabilities: ESG non-compliance may expose companies to legal liabilities and litigation risks. Environmental violations can result in lawsuits, fines, or cleanup obligations, while social and governance failures may lead to employment-related lawsuits, class-action suits, or shareholder litigation. In conclusion, the implications of ESG non-compliance extend far beyond mere regulatory or ethical concerns. They encompass financial, operational, regulatory, and legal dimensions, all of which can significantly impact a company's performance, sustainability, long-term value for all stakeholders. [1]
6. There is now increasing pressure on companies in relation to ESG goals to report their performance in this area alongside or in addition to their annual financial reporting. Therefore, showing unfavourable results with respect to ESG can hamper a company's brand image.

[1]
[Max 5]

Solution. 28) **Benefits to the Issuer of Eurobonds:**

1. They represent a convenient method of raising large amounts of foreign currency denominated funds without having to enter overseas financial markets. [1]
2. It may be possible to raise funds at a lower rate of interest than is available on domestic currency funds. [1]

3. By accessing overseas financial markets, issuer can reduce dependencies on domestic investors and reduce their exposure to country specific risks. [1]
4. Eurobonds are unsecured loans subject to less regulation and are issued with either fixed or floating rates of interest. [1]

Risk to the Issuer of Eurobonds

1. There may be associated exchange rate risks if the funds raised are converted for use in domestic projects. [1]
2. Due to some of the factors such as political instability, economic uncertainties, it may be difficult for the issuer to obtain favorable credit ratings for their Eurobonds issuances. [1]
3. Compliance with various legal and regulatory framework of different countries can add complexity to issuance process, thus increasing the legal and administrative cost. [1]

[Maximum 2 marks for Benefits and 2 marks for Risks] **[Max 4]**