FINAL EXAMINATION SET - 1

MODEL ANSWERS TERM – JUNE 2025

PAPER – 20A SYLLABUS 2022

# STRATEGIC PERFORMANCE MANAGEMENT AND BUSINESS VALUATION

**Time Allowed: 3 Hours** **Full Marks: 100**

**The figures in the margin on the right side indicate full marks.**

## SECTION – A (Compulsory)

**1. Choose the correct option:** **[15 x 2 = 30]**

**(a) (i) Where is the headquarters of the Basel committee on banking supervision (BCBS ) ?**

(A) New York,USA

(B) Geneva,Switzerland

(C) London,UK

(D) Basel, Switzerland

**(ii) What are the first signs of financial distress in a company?**

(A) Declining employee morale

(B) Increased production costs

(C) Loss of customers impacting cash flows

(D) Decreasing customer

**(iii) Six Sigma is a business-driven, multi-dimensional structured approach to**

(A) Reducing process variability

(B) Lowering Defects

(C) Improving Processes

(D) All of the above

**(iv) A firm's marginal revenue is defined as**

(A) The ratio of total revenue to total quantity produced

(B) The additional output produced by lowering price

(C) The additional revenue received due to technical innovation

(D) The additional revenue received when selling one more unit of output.

**(v) The price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.**

(A) Investment Value

(B) Fair Value

(C) Fair market value

(D) Equitable Value

**(vi) Which of the following acts gave birth to the Asset Reconstruction Company?**

(A) Banking regulation act 1949

(B) SEBI Act 1992

(C) Companies Act 2013

(D) SARFAESI Act 2002

**(vii) What is the IVS for Scope of Work?**
(A) IVS 100
(B) IVS 101
(C) IVS 200
(D) IVS 400

**(viii) No securitisation company or reconstruction company which has been granted a certificate of registration, shall carry on, any business other than that of securitisation or asset reconstruction without prior approval of the ____________.**
(A) Reserve Bank of India
(B) Central Government of India
(C) SARFAESI
(D) SEBI

**(ix) Assume that in a stock market, the CAPM is working. A company has presently beta of 0.84 and its going to finance its new project through debt. This would increase its Debt/Equity Ratio to 1.56 from the existing 1.26. Due to increased Debt/Equity Ratio, the company's beta would**
(A) Increase
(B) Decrease
(C) remain unchanged
(D) Nothing can be concluded

**(x) If purchase consideration is more than net assets of the transferor company, then difference will be shown as:**
(A) Goodwill account
(B) Capital reserve account
(C) General reserve account
(D) None of the above

**(b) Read the following scenario and answer the following questions:**

Supreme Toy Manufacturing Co. is a medium-sized manufacturing firm specializing in industrial equipment. It has been operating for 20 years and has built a strong reputation within its niche, serving clients across the automotive, construction, and aerospace industries. The company has two manufacturing plants: Plant A, which focuses on automotive components, and Plant B, which focuses on construction and aerospace components.
Despite consistent growth for a decade, Supreme Toy Manufacturing Co. has faced economic challenges in recent years due to rising raw material costs, increased labor expenses, and disruptions in the supply chain. The firm is under pressure to improve efficiency to maintain its competitive edge.

**Company Overview**
**Revenue from Operations: 50 million (2023)**
**Net Income: 3 million (2023)**
**Average Assets: 25 million (2023)**
**Employee Count: 200 (100 at each plant)**
**Gross Profit Margin: 20% (2023), a drop from 25% (2022)**
**Operating Margin: 10% (2023), a decrease from 15% (2022)**
**Return on Investment (ROI): 12% (2023), down from 18% (2022)**
**Production Lines: Plant A has 3 production lines (automotive components), and Plant B has 2 production lines (construction and aerospace components)**
**Downtime: Average of 10% across all production lines, with peaks of 15% during maintenance periods**
**Labor Costs: 20 million (2023), a 10% increase from 2022**
**Raw Material Costs: 15 million (2023), up by 15% from 2022 due to global supply chain disruptions**
**Answer the following questions based on the above scenario.**

**Choose the correct answer from the given four alternatives:**

**(xi) Given the data about raw material costs, overheads, and labour costs, which strategy would likely have the most significant impact on Supreme's operating margin?**
**(A) Reduce overheads through energy saving measures**
**(B) Increasing output per labor hour**
**(C) Lowering raw material costs by finding alternative suppliers**
**(D) Implementing price adjustments to align with industry standards.**

**(xii) If Supreme Manufacturing Co. were to invest in new machinery to improve productivity, which of the following would be the most likely outcome?.**
**(A) Decrease in downtime and increase in output per machine hour**
**(B) Increase in energy consumption and decrease in output per labor hour**
**(C) Increase in raw material waste and decrease in production costs**
**(D) Increase in operating margin with no change in net income**

**(xiii) Given Supreme Manufacturing Co's average downtime rate of 10% and its peaks of 15%, which strategy would be most effective in addressing productivity issues?**
**(A) Implementing predictive maintenance to reduce downtime**
**(B) Increasing labor hours to offset production delays**
**(C) Reducing the number of production lines to focus on core products**
**(D) Outsourcing part of the production to reduce labor costs**

**(xiv) Considering the trends in gross margin and operating margin, which of the following is the most plausible reasons for the company's declining profitability?**
**(A) Poor Customer relationship and shift in the loyal customer base**
**(B) Workers' unrest and poor productivity**

**(C) Strained relations with the supplices**
**(D) High maintenance cost due to outdated machinery**

**(xv) If equity multiplier is 2.5, ROE of Supreme Manufacturing Co. for 2023 is**
**(A) 30%**
**(B) 3%**
**(C) 0.3%**
**(D) 300%**

**Answer:**

| (i) | (ii) | (iii) | (iv) | (v) | (vi) | (vii) | (viii) | (ix) | (x) | (xi) | (xii) | (xiii) | (xiv) | (xv) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | c | d | d | b | d | b | a | c | a | c | a | a | d | a |

## SECTION – B

**(Answer any five questions out of seven questions given. Each question carries 14 Marks.)**

**[5x14=70]**

**2. (a) Explain three fundamental aspects of CRM to facilitate building relationship with customer. Describe the impact of CRM initiative on an organization, in terms of enhanced risk that it may face. [7]**

**(b) Describe the Principles of Lean Manufacturing and the 5 S's of Lean. [7]**

**Answer:**

**(a) Fundamental aspects of CRM and its impact on organization**:

CRM system, comprises following three fundamental aspects to facilitate building relationship with profitable customers –

Operative CRM takes care of individual transactions and is used by operational team. Interactions by customers are kept in the data base and are used later by the service, sales, and marketing team for operational decisions. Analytical CRM analyses the data created on the operational side of the CRM effort for evaluation and prediction of customer behaviour. Collaborative CRM ensures that information about customer must flow seamlessly throughout the supply chain, majorly distribution channel; in form of collaborative effort by all associated department of an organization to increase the quality of services provided to customers. Increase in utility at customer end will result in increased loyalty. Collaborative CRM comprises interactive technology like email, digital media to simplify the communications between customers and staff which would help in building relationships.

**A CRM initiative generally has some of the following impacts on an organization:**

1. Increased expectations from senior management to increase revenues reduce costs, increase market share and increase business flexibility may put tremendous pressure on the organization and may potentially compromise the internal control structure.

2. Increased complexity of managing multiple channels, technologies, customer relationships and customer definitions.

3. Vital and confidential customer information may be transmitted and shared across new networks,

systems and platforms

4. Significant changes to the organization, attitudes and beliefs, placing heavy reliance on the organization's employees for the successful adoption of the solution. These factors introduce many risks to the organization, for instance, the potential disruption of vital operations, violations to customer privacy and confidentiality, ineffective, inconsistent or inefficient processes, lack of internal business controls, poor customer service, incorrectly targeted sales and marketing efforts, non-acceptance of new systems and processes and security breaches. Effective risk management helps in minimizing CRM risks and softens the impact.

**(b)** Lean manufacturing, also known as lean production, refers to systemized reduction of time within the production cycle including response times of suppliers and customers. Lean, similar to just – in time (JIT), emphasizes reduction of inventory cost and wastage and increases productivity. The word, lean refers to a thin production system, which is almost devoid of wastes. It eliminates all such activities that do not add value to the finished product. The system is considered as lean because more and more can be achieved with less and less.

The term 'lean' was coined by John Krafcik in 1988 in his famous book The Machine that Changed the World. Further detailing was made by the author in the book Lean Thinking published in 199625. In his first book the author notes that Eiji Toyoda26, benefited from his discourse with Henry Ford27 in 1950, created an alternative philosophy to mass production, called the Toyota Production System (TPS). For the purpose Taiichi Ohno28 made enormous contribution and is considered as the father of the TPS. The TPS is the forbearer of lean production.

- **Five Principles of Lean Manufacturing**

  a) Value – Value is determined by what the customer considers to be important within a product or service, rather than what the individuals developing or delivering the product or service consider important.

  b) Value Stream – The set of business activities and steps involved in creating and delivering products and services to the customer; it is the connection of the steps together rather than considering each step in isolation.

  c) Flow – The degree to which there is smooth uninterrupted flow of activities that add value to the customer, rather than waste and inefficiency that impedes the flow through the value stream.

  d) Pull – The degree to which the value stream is only processing products and services for which there is a customer demand, rather than creating something and hoping someone wants it.

  e) Perfection – The continuous assessment of value stream performance to identify and improve the value created and delivered to the customer, rather than resisting changes that improve the process of creating and delivering customer value.

- **The 5 S's of Lean**

  Much of Lean manufacturing is applying "common sense" to manufacturing environments. In implementing Lean, the 5S quality tool, derived from five Japanese terms beginning with the letter "S", are used to create a workplace suited for visual control and lean production. 5 S's are frequently used to assist in the organization of manufacturing. The 5 S's are from Japanese and are:

  a) Seiri: To separate needed tools, parts, and instructions from unneeded materials and to remove the unneeded ones.

b) Seiton: To neatly arrange and identify parts and tools for ease of use.

c) Seiso: To conduct a clean-up campaign.

d) Seiketsu: To conduct seiri, seiton, and seiso daily to maintain a workplace in perfect condition.

e) Shitsuke: To form the habit of always following the first four S's.

**3. (a) A producer has the possibility of discriminating between two markets; market A and market B for a product where the demands, respectively, are**
**$Q_1 = 21 - 0.1P_1$ ------ (D)**
**$Q_2 = 50 - 0.4 P_2$ ------ (E)**
**Total cost = 2000+10Q where $Q = Q_1 + Q_2$.**
**Calculate the price that will producer charge in order to maximize profits**
**(a) with discrimination between markets and**
**(b) without discrimination?**
**Compare the profit differential between discrimination and non-discrimination. [7]**

**(b) Explain the interrelated components of an Enterprise Risk Management framework Advocated by Committee of Sponsoring Organization's (COSO). [7]**

**Answer:**

**(a)** Price and output determination with discrimination

To maximize profits under price discrimination, the producer will set prices so that,
MC = MR in each market.
Thus, MC= MR1 = MR2.
Given TC= 2000 +10Q, MC = d(2000+10Q)÷ dQ = 10 (this is same for both the markets) ------- (1)

In Market A, $Q_1 = 21 - 0.1P_1$
$P_1 = 210 - 10 Q_1$
$TR_1 = P_1 \times Q_1 = (210 - 10 Q_1) \times Q_1 = 210 Q_1 – 10 Q_1^2$
MR1 = d $(210Q_1 - 10Q_1^2) \div dQ_1 = 210 – 20$ Q1 --------------------------- (2)
In Market B,
= 125 - 2.5
$P_2 = 125 - 2.5 Q_2$
$TR_2 = P_2 \times Q_2 = 125 - 2.5$
$MR_2 = d (125Q_2 - 2.5Q_2^2) \div dQ_2 = 125 - 5Q2$ ----------------------------- (3)
Thus, MR1 =MR2 = MC
⇒ $210 – 20 Q_1 = 125 -5Q_2 = 10$ ------------------ (4)
Therefore, in Market A,
⇒ 210 – 20 Q1 = 10 -------------- (5) {from equation 4}
$Q_1$ =10 (from equation 5) and
$P_1 = (210 - 10 Q_1) = 210 – 10 \times 10 = 110$
$TR_1 = P_1 \times Q_1 = 10 \times 110 = 1100$
Therefore, in Market B,
$125 – 5 Q_2 = 10$ -------------- (6) {from equation 5}
$Q_2 = 23$ (from equation 6) and
$P_1 = (125 – 2.5 Q_2) = 125 – 2.5 \times 23 = 67.5$

$TR_2 = P_2 \times Q_2 = 67.5 \times 23 = 1552.5$

The discriminating producer charges a lower price ($P_2$= 67.5) in the market B where the demand is relatively more elastic and a higher price (P1 =110) in the market A where the demand is relatively less elastic. And his total profit is calculated below which is also the maximum under given condition.

$\pi = (TR1 + TR2) – TC$

TR1 and TR2 is calculated as 1100 and 1552.5 respectively. And calculation of total cost is given as

Given, TC = 2000+10Q where $Q = Q_1 + Q_2$

TC = 2000 + 10 × 33, [Q = 10 + 23 = 33]

TC = 2330

Therefore, profit ($\pi$) is given as

$\pi$ = (1100 + 1552.5) - 2330 = 322.5 --------------- (7)

Price and output determination without discrimination

If the producer does not discriminate, P1 = P2 and the two demand functions (D) and (E) may simply be aggregated.

Thus,

$Q = Q_1 + Q_2$ and

$\Rightarrow Q = Q_1 + Q_2 = (21 - 0.1P) + (50 - 0.4 P)$ [P = P1 = P2] (same price for both the markets).

$\Rightarrow Q = 71 - .5P$

$\Rightarrow P = 142 -2Q$

$TR = P \times Q = (142 -2Q) \times Q =$

$MR = d (142Q - 2Q^2) \div dQ = 142 - 4Q$

Setting MR = MC

142 - 4Q = 10 {MC= 10, refer to equation (1) above}

Therefore, Q = 33 and P = 142 -2Q = 142 – 2 × 33 = 76

Thus when the monopolist does not discriminate then the equilibrium is set at Q =33 and P =76 (for both the markets A and B). In that case,

TR = P × Q

33 × 76 = 2508

And TC = 2000 + 10 Q = 2000 × (10 × 33) = 2330. Therefore

$\pi$ = TR – TC = 2508 – 2330 = 178

From the above discussion it is clear that when no discrimination takes place, the price (P = 76) is between the relatively high price of the market A ($P_1$ =110) and the relatively low price of the market B ($P_2$ = 67.5) Notice, however, that the quantity sold remains the same: at P = 76, $Q_1$ = 13.419, $Q_2$ = 19.620, and Q = 33.

A comparison of the profit differential between discrimination and non-discrimination is presented below

Profit when the monopolist follows price discrimination between the two markets

$\pi$ = 322.5 ------------ (from equation 7)

Profit when the monopolist does not follow discrimination between the two markets

$\pi$ = 178 -------------------------(from equation 8) thus profit of the monopolist is higher when he follows price discrimination.

**(b) The components of ERM**

The components of ERM do not occur serially where one component affects only the next. Rather it is a multidirectional, iterative process in which component effects and influences other. The COSO Framework advocates eight interrelated components of an ERM which are:

- Internal Environment – this is the basis around which risk is viewed and addressed by an entity. The risk management philosophy which is based on the risk appetite, integrity and ethical values of the entity, and the environment in which they operate are aspects which design the internal environment.
- Objective Setting – Objectives must be set before management can identify potential events affecting their achievement. Effectively implemented ERM ensures that management has in place a process to set objectives and that the chosen objectives support and align with the entity's mission and are consistent with its risk appetite.
- Event Identification –Events that affect accomplishment of an entity's objectives are identified either as risks or opportunities. Opportunities, referred to as upside aspect of risk, are to be adjusted against the management's strategy or objective-setting processes.
- Risk Assessment – Risks are analyzed, considering likelihood of occurrence and magnitude of impact. This is the basis which is the determining factor of risk management.
- Risk Response – Management must select risk responses which are either avoiding, accepting, reducing, or sharing risk. For this purpose, the organization must develop set of actions to align risks with the entity's risk tolerances.
- Control Activities – Policies and procedures are established and implemented to help ensure risk responses are effectively carried out.
- Information and Communication – Relevant information is identified, captured, and communicated in a structured form and within a timeframe that enable people to carry out their responsibilities. An important aspect of this component is effective communication which transpires in a broader sense, flowing down, across, and up the entity.
- Monitoring – The entirety of ERM is monitored and modifications made as necessary. Monitoring is accomplished through ongoing management activities.

**4. (a) Mrs. EuCheu is an investor who has decided to invest her money in the business of either Retailer A and Retailer B. She researches their financial numbers and finds that the ROE for the both the Retailers are same at 45%. Thus she decides to look further and finds the following data; Retailer A's profit margin is 30%, asset turnover is 0.50, and equity multiplier is 3. Retailer B's Profit Margin of 15%; Asset Turnover is 3; and Equity Multiplier is 1.**
**She is confused as both the company's profitability is same when measured in terms of ROE. Critically assess the situation and advice Mrs. Euchen. [7]**

**(b) Fairy Tale Co. Ltd. has applied for a loan at Maharashtra Credit Bank. Sri Arun Pilgaonkar, the credit analyst of the bank is apprehensive of manipulations in operations as he fears that earnings manipulation is the most distinctive aspect of financial distress. He desires to calculate the Beneish M Score as this according to him is the best model to predict the degree of earnings manipulation.**
**For this purpose, he furnishes the eight indices as stipulated by the said model:**

| Index | Score |
|---|---|
| DSRI | 0.500 |
| GMI | 1.210 |
| AQI | 0.810 |
| SGI | 1.250 |
| DEPI | 0.904 |
| SGAI | 0.730 |

| | |
|---|---|
| **LVGI** | **0.400** |
| **TATA** | **0.005** |

**Required:**
**Calculate Beneish M-score of the company and advise Sri Pilgaonkar whether the company is susceptible to earnings manipulation.**
**[Note: Restrict your calculations up to three decimal places]** **[7]**

**Answer:**

**(a)** These are the following observations:

- First break down the ROE to identify the meaning and value of the different variables in this problem.
- In order to compare the profitability of Retailer A (ROE = 45%) with that of Retailer B (ROE = 45%) ,use the DuPont Framework which states that

  **DuPont ROE = Margin on Sales × Asset Turnover × Equity Multiplier**

  **⇒ DuPont ROE = (**Net Profit/ Sales) x (Sales/ Total Asset) x (Total Asset/ Shareholders' Equity)

  **In case of Retailer A**

  DuPont Return on Equity (ROE) [45%] = Margin on Sales (30%) × Asset Turnover (0.50) × Equity Multiplier (3)

  **In case of Retailer B**

  DuPont Return on Equity (ROE) [45%] = Margin on Sales (15%) × Asset Turnover (3) × Equity Multiplier (1)
- On the basis of the above analysis, it should be advised to Mrs EuCheu that;

  **A)** Retailer A's business is more profitable in terms of rupee return generated against sales.

  **B)** Regarding utilisation of assets at disposal, retailer B is better as its asset turnover is three against 0.50 of retailer A. This implies that management of retailer B is able to utilise more return against the assets at its disposal.

  **C)** The equity multiplier of retailer B is one (shareholders' equity equals total assets) implying that it is an all equity firm. Thus it may be inferred that the financial risk perception is nil. Whereas, the equity multiplier of retailer A is three, implying that the total assets (debt + shareholders' equity) is three times the shareholders' equity. And a portion of financing total asset is debt financing implying some amount of financial risk.

The analysis presented through the 3 component DuPont analysis may not suffice the financial information need of Mrs EuCheu, but provides her with analytical information about the financial health of the two retailers.

**(b) Beneish M-Score:**

| Index | Individual Score | Coefficient | Composite Score |
|---|---|---|---|
| DSRI | 0.500 | 0.920 | 0.460 |
| GMI | 1.210 | 0.528 | 0.639 |
| AQI | 0.810 | 0.404 | 0.327 |
| SGI | 1.250 | 0.892 | 1.115 |
| DEPI | 0.904 | 0.115 | 0.104 |
| SGAI | 0.730 | -0.172 | -0.126 |
| LVGI | 0.400 | -0.327 | -0.131 |

| | | | |
|---|---|---|---|
| TATA | 0.005 | 4.679 | 0.023 |
| TOTAL | | | 2.411 |
| | | | -4.840 |
| Beneish M-Score | | | -2.429 |

**Advice:**

As per Beneish M model, if the score is less than the cut off score (-2.22) then the company is not manipulating the earnings and if the score is greater than the cut off score then it advocates that company may be manipulating its earnings.

In the case of Fairy Tale Company, the Beneish M score is calculated as -2.429 which is less than the cut off M score of -2.22. This suggests that the company is not manipulating its earnings.

**5. (a) Smart Ltd. is deciding whether to pay out ₹4,00,000 in excess cash in the form of an extra dividend or go in for a share repurchase. Current earnings are ₹2 per share and the stock sells for ₹20. The market value balance sheet currently is as follows:**

**Balance sheet**

| Liabilities | Amount (₹) | Assets | Amount (₹) |
|---|---|---|---|
| Equity | 1700 | Assets rather than cash | 1900 |
| Debt | 600 | Cash | 400 |
| | 2300 | | 2300 |

**Calculate:**

**a. The two alternatives in terms of the effect on the price per share of the stock, the EPS and the P/E ratio.**

**b. Which alternative is a better decision for the company? Why?** **[7]**

**(b) The following information is given for three companies that are identical except for their capital structure:**

| | Orange | Red | Blue |
|---|---|---|---|
| Total Invested Capital | 1,00,000 | 1,00,000 | 1,00,000 |
| Debt/Assets Ratio | 0.8 | 0.5 | 0.2 |
| Shares Outstanding | 6,100 | 8,300 | 10,000 |
| Pre Tax Cost of Debt | 16% | 13% | 15% |
| Cost of Equity | 26% | 22% | 20% |
| Operating Income (EBIT) | 25,000 | 25,000 | 25,000 |
| Net Income | 8,970 | 12,350 | 14,950 |

**The tax is uniform 35% in all cases.**

**Calculate:**

**(i) Calculate the weighted average cost of capital for each company.**
**(ii) Calculate the Economic Value Added (EVA) for each company.**
**(iii) Calculate which company would be considered for best investment, Based on the EVA? Give reasons.**
**(iv) Calculate the price for the share of each company, If the industry P/E ratio is 11 times.**
**(v) Calculate the estimated market capitalization for each of the Companies.** **[7]**

**Answer:**

**(a)** **a. Assumption:** The P/E of the stock remains the same under both the alternatives.

**Alternative I**

Pay ₹ 400 thousand in the form of dividend

Number of shares = 1700/10 = ₹170 thousand

Dividend per share = 400/170 = ₹ 2.35 per share

As P/E is constant, the share price depends only on earning power of the company and suppose earnings are going to remain at ₹2 per share, then the price will remain at ₹20 per share.

**Alternative II**

Repurchase 400 thousand worth of shares

Number of shares repurchased = 400/20 = 20 thousand shares

Shares remaining = 85 – 20 = 65 thousand shares

Changed EPS = 2 × 85/65
= ₹ 2.62

Revised price = 2.62 × 20/2
= ₹ 26.15

**b.** Alternative II is better as the price of the share increases to ₹ 26.15 from ₹ 20

**(b)**

| (i) | | **Orange** | **Red** | **Blue** |
|---|---|---|---|---|
| | W/d (Debt/Assets Ratio) | 0.8 | 0.5 | 0.2 |
| | Kd (Cost of Debt) (%)(after tax) | 10.4 | 8.45 | 9.75 |
| | We (Weight of Equity) | 0.2 | 0.5 | 0.8 |
| | Ke (Cost of Equity) % | 26 | 22 | 20 |
| | WACC (Weighted Avg. cost of Capital)% | 13.52 | 15.225 | 17.95 |
| (ii) | Invested Capital | 1,00,000 | 1,00,000 | 1,00,000 |
| | EBIT | 25,000 | 25,000 | 25,000 |
| | NOPAT | 16,250 | 16,250 | 16,250 |

| | | | | |
|---|---|---|---|---|
| | EVA (Economic Value Added) | 2,730 | 1,025 | -1,700 |
| | (NOPAT- WACC x Invested Capital) | | | |
| | Best Company | Orange | | |
| (iii) | Orange company would be considered for best investment since the EVA/Performance metric of the Company is highest and its weighted Average cost of capital is the lowest. | | | |
| | | Orange | Red | Blue |
| (iv) | Shares (Nos.) | 6,100 | 8,300 | 10,000 |
| | Net Income | 8,970 | 12,350 | 14,950 |
| | EPS | 1.47 | 1.49 | 1.50 |
| | Price (P/E = 11) | 16.17 | 16.39 | 16.50 |
| (v) | Market Capitalization (No. of shares x price) | 98,637 | 1,36,037 | 1,65,000 |

**6. (a) Carwin Tracom Ltd. furnishes the following particulars about their investment in shares of Rose Commodities Ltd. for the year 2024-25:**

| | | |
|---|---|---|
| **Balance of shares held on 1st April 2024** | **2,62,000** | **(10,000 shares of ₹10 each)** |
| **Purchased 2,000 shares on 1st July 2024** | **60000** | |
| **Sold 500 shares on 1st August 2024 @ ₹35 per share cum dividend** | **17500** | |
| **Carwin Tracom Ltd. declared final dividend for 2023-24 on 1st September 2024. Received 1:5 bonus shares on 1st February, 2025.** | **20%** | |

**Brokerage for each transaction is 2%. Calculate the cost of shares held by Carwin Tracom Ltd. as on 31st March 2025.** **[7]**

**(b) Calculate the Economic Value added from the following data:**

| **Particulars** | **(₹ in lakhs) Year: 2024** |
|---|---|
| **Average Debt** | **50** |
| **Average Equity** | **2766** |

| | |
|---|---|
| **Cost of Debt %** | **7.72** |
| **Cost of Equity %** | **16.70** |
| **Weighted average cost of capital (%)** | **16.54** |
| **Profit after tax before exceptional items** | **1541** |
| **Interest after taxes** | **5** |

**[7]**

**Answer:**

**(a)**

**Statement of cost**

| **Particulars** | **Amount (₹)** | **Amount (₹)** |
|---|---|---|
| Balance (10000 shares) | | 2,62,000 |
| Particulars | Amount (₹) | Amount (₹) |
| Purchased (2000 shares): | | |
| Cost (cum-div) | 60,000 | |
| Add brokerage | 1,200 | |
| | 61,200 | |
| Less: Dividend for 2023-24 | 4,000 | |
| | | 57200 |
| Sold (500 shares cum div) | | |
| Sale proceeds | 17,500 | |
| Less: brokerage 2% | 350 | |
| | 17,150 | |
| Less: Dividend for 2023-24 | 1,000 | |
| Cost of sales (500 × 319200 / 12,000) | | (13300) |
| Bonus shares (1:5) i.e. (11,500 × 1/5) | | Nil |
| Cost of Investment | | 3,05,900 |

Cost of investment a ₹3,05,900

Cost of sales is computed on average cost basis.

Bonus shares are free and hence nothing is shown in amount column.

| | ₹ |
|---|---|
| Dividend received from Samay Ltd. (11500 × 10) × 20% | 23,000 |
| Less: Dividend deducted from cost of investment | 4,000 |
| | 19,000 |

| | |
|---|---|
| Add: Dividend included in sales proceeds of 500 shares (received by the new buyer) | 1,000 |
| Dividend received to be shown in Profit & Loss A/c | 20,000 |
| Profit on sale of investment: | |
| Sale proceeds of 500 shares (net of brokerage) | 17,150 |
| Less: Dividend included above (to be considered as income) | 1000 |
| Less: cost of sales (on average cost basis) | 13300 |
| Profit on sales | 2850 |

(b) **EVA Calculation:**

**(₹ in lakhs)**

| | |
|---|---|
| 1. Average debts | 50 |
| 2. Average Equity | 2766 |
| 3. Average capital (1 + 2) | 2816 |
| 4. Cost of debt, post-tax % | 7.72 |
| 5. Cost of Equity% | 16.70 |
| 6. Weighted Avg. cost of Capital% | 16.54 |
| 7. COCE (3) × (6) | 466 |
| 8. Profit after tax before exceptional items | 1541 |
| 9. Add. Int. after taxes | 5 |
| 10. Net operating profits after taxes | 1546 |
| 11. COCE | 466 |
| 12. EVA (10 – 11) | 1080 |

**7. (a) ABC Ltd. run and managed by an efficient team that insists on reinvesting 60% of its earnings in projects that provide an ROE (return of equity) of 10%, despite the fact that the firm's capitalization rate (K) is 15%. The firm's current year's earning is ₹ 10 per share.**
**Calculate at what price the stock of ABC Ltd. Sell. Advise, what will be the present value of growth opportunities. Suggest why such a firm would be a takeover target. [7]**

**(b) Tarun Ltd. is considering the takeover of Arun Ltd. and Barun Ltd. The financial data for the three companies are as follows:**

| | Tarun Ltd. | Arun Ltd. | Barun Ltd. |
|---|---|---|---|
| **Equity Share Capital of ₹ 10 each (₹ million)** | **450** | **180** | **90** |

| | | | |
|---|---|---|---|
| **Earnings (₹ millions)** | **90** | **18** | **18** |
| **Market Price of each share (₹)** | **60** | **37** | **46** |

**(i) Critically assess the situation and advice, will you recommend the merger of either/both of the companies?**

**(ii) Evaluate independently and justify your answer.** **[7]**

**Answer:**

**(a)** Dividend growth rate G = ROE × b

Where, b = 1 – pay-out ratio

G = 10% × 0.60 = 6%

Stock price of ABC Ltd = (10 x 0.4)/(0.15 - 0.06) = 4/0.09 = ₹44.44

Present value of growth opportunities (PVGO)

= market price per share – No growth value per share

= ₹ 44.44 –(10/0.15)

= ₹ 44.44 – 66.66

= ₹ -22.22 i.e., negative PVGO

Reasons for takeover target – Negative PVGO implies that the net present value of the firm's projects is negative; the rate of return on those assets is less than the opportunity cost of capital. Such a firm would be subject to takeover target because another firm could buy the firm for the market price of INR 44.44 per share and increase the value of the firm by changing its investment policy. For example, if the new management simply paid out all earning as dividend, the value of the firm would increase up to its no growth value of ₹ 66.66.

**(b) (i) & (ii) Calculation of P/E Ratio**

| Particulars | Tarun Ltd. | Arun Ltd. | Barun Ltd. |
|---|---|---|---|
| No. of Equity Shares (in million) | 45 | 18 | 9 |
| Earnings (D millions) | 90 | 18 | 18 |
| EPS (D) | 2 | 1 | 2 |
| Market Price of each share (D) | 60 | 37 | 46 |
| P/E Ratio | 30 | 37 | 23 |

**Analysis of EPS of Tarun Ltd. after acquisition of Arun Ltd. & Barun Ltd.**

| Particulars | Tarun Ltd. | Arun Ltd. | Barun Ltd. |
|---|---|---|---|
| Exchange ratio in Tarun Ltd. | | 1.23 | 0.77 |
| Value of Shares (D million) | 2700 | 666 | 414 |
| No. of Tarun Ltd. shares to be given (million) | | 666/60=11.10 | 414/60 =6.9 |
| Total Earnings after acquisition (D million) for both options | | 108 | 108 |
| Total No. of Shares (million) | | 56.10 | 51.9 |
| E.P.S. (D) | | 1.93 | 2.08 |

**Recommendation & Justification:**

Yes, the Merger with only Barun Ltd. will be recommended to increase the value to the Shareholders of Tarun Ltd.

Since after merger of Tarun Ltd. with Barun Ltd, combined EPS is higher than the earlier pre-merger EPS of Tarun Ltd. on the other hand, after merger of Tarun Ltd. with Arun Ltd., combined EPS is lower than the earlier pre-merger EPS of Tarun Ltd. the merger with only Barun Ltd. is suggested.

**8. (a) Illustrate a common size statement and also interprets the result, from the following income Income Statement for the year ended 31st March**

| | 2024 | 2025 |
|---|---|---|
| Net Sales | 10,50,000 | 13,50,000 |
| Less : - Cost of goods sold | 5,70,000 | 6,45,000 |
| Gross Profit | 4,80,000 | 7,05,000 |
| Less :- Other operating expenses | 1,50,000 | 2,16,000 |
| Operating profit | 3,30,000 | 4,89,000 |
| Less :- Interest on long term debt | 60,000 | 51,000 |
| Profit before tax | 2,70,000 | 4,38,000 |

**[7]**

**(b) Vikas Ltd. wishes to acquire Nikas Ltd., a small company with good growth prospects, The relevant information for both companies is as follows:**

| Company | Equity shares Outstanding | Share price (₹) | EAT (₹) | EPS (₹) |
|---|---|---|---|---|
| Vikas Ltd. | 10,00,000 | 25 | 20,00,000 | 2 |
| Nikas Ltd. | 1,00,000 | 10 | 2,00,000 | 2 |

**Vikas Ltd. is considering three different acquisition plans viz.,**

**(i) Pay 12.5 per share for each share of Nikas Ltd.**

**(ii) Exchange 25 cash and one share of Vikas Ltd for every four shares of Nikas Ltd.**

**(iii) Exchange one share for every two shares of Nikas Ltd.**

**(a) Calculate the Vikas's Earning per share (EPS) under each of the three plans?**

**(b) Calculate the share prices of Vikas Ltd. under each of the three plans, if its current price earnings ratio remains unchanged?**

**(c) Evaluate a strategy for Vikas Ltd to take over Nikas Ltd so that post merger Vikas Ltd gets the best market valuation.** **[7]**

**Answer:**

**(a) Comparative Common Size Statement for the year ended 31st March**

| | 2024 | 2025 |
|---|---|---|
| Net Sales | 100% | 100% |
| Less: Cost of goods sold<br>(Cost of goods sold/ Net Sales) ×100 | 54.3% | 47.8% |
| Gross Profit<br>(Gross profit/ Net Sales) ×100 | 45.7% | 52.2% |
| Less: Other operating expenses<br>(Other operating expenses / Net Sales) ×100 | 14.3% | 16% |
| Operating profit (Operating profit / Net Sales) ×100 | 31.4% | 36.2% |
| Less : Interest on long term debt<br>(Interest/ Net Sales) ×100 | 5.7% | 3.8% |
| Profit before tax (PBT)<br>(PBT/ Net Sales) ×100 | 25.7% | 32.4% |

**Comment:**

(i) The PBT to net sales has increased from 25.7% in the year 2023-24 to 32.4% in the year 2024- 25. It indicates that the profit earning capacity of the company has improved during the study period. This improvement in the profitability of the company has been mainly due to significant reduction in the cost of goods sold of the company. It may occur due to fall down of input market or may occur due to improvement in the efficiency of the company. As other operating expenses has higher in 2024-25 so, it is clear that company has been operated with tight supervision, tight inventory control for reduction of COGS (Cost of Goods Sold).

(ii) The interest on long term debt to net sales has declined from 5.7% in the 2023-24 to 3.8% in 2024-25. It implies that the financial burden of the company has reduced significantly during the study period. Higher operating profit or fund from operation has been utilised for repayment of long term debt, so that the financial risk associated with the company has declined significantly during the study period.

**(b) EPS and Market price per share (MPS) under 3 different acquisition plans**

| | Plan 1 | Plan 2 | Plan 3 |
|---|---|---|---|
| EPS | 2.2 | 2.146 | 2.095 |
| Market Price per share | 27.5 | 26.83 | 26.19 |

The strategy should to persuade shareholders of Nikas Ltd to accept Plan 1 that is Vikas Ltd to pay ₹12.50 per share for each share of Nikas Ltd. This Plan 1 should be followed because it gives the highest market price of share post-merger, from the point of view of Vikas Ltd.

The points for persuasion of shareholders of Nikas Ltd are:

(a) Plan 1 provides highest cash payout of ₹12.50 per share of Nikas Ltd (Plan 2 is ₹6.25 per share and Plan 3 is nil)

(b) Shareholders of Nikas Ltd are free to invest their monies in their own ventures and will not have to be minority shareholders in another company.

(c) From perspective of Vikas Ltd too it gets full control of the merged company, hence Plan 1 is better for both parties.