Chapter 9

Valuation in Mergers and Acquisitions

1. INTRODUCTION

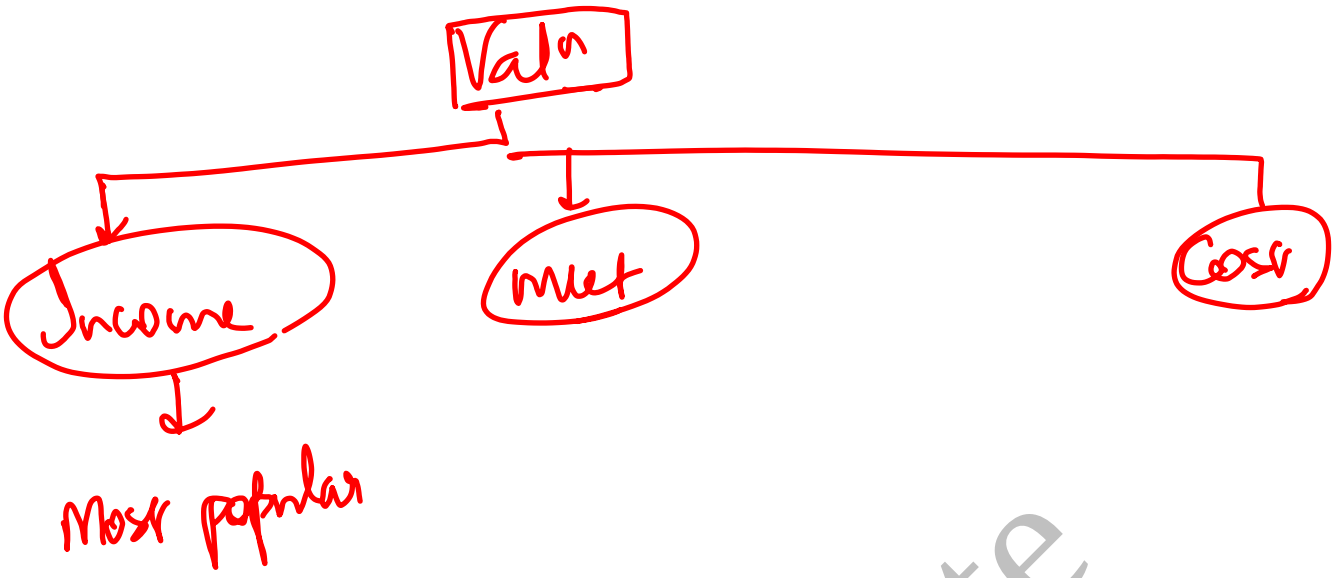
Companies often 'restructure' their business in their quest for efficiency and competitiveness. To achieve their ambitious business goals, organisations may restructure the business organically (Internal) or inorganically (External). Organic activities include aggressive marketing, geographical expansion, and new product development. Inorganic Restructuring may be done in the form of Mergers and Acquisitions.

They are often considered to be faster means of achieving the desired goals.

MERGERS

Mergers (also known as Amalgamation) two or more companies (amalgamating or transferor companies) choose to merge into a single company (amalgamated or transferee company). In a merger, the company being bought is absorbed into the other, so it ceases to exist as a separate entity once the merger is complete.

- **Horizontal merger:** When merger is between two companies that are into the same products or services, it is called a horizontal merger. For example, in 2017, Vodafone India and Idea Cellular merged to form Vodafone Idea (Vi). It was a horizontal merger amongst the two biggest players in the telecom industry. This merger deal was worth USD 23 billion.
- **Vertical merger:** In a vertical merger, the companies are in different points in the value chain. For example, in 2006, Walt Disney acquired Pixar Animation Studios for USD 7.4 billion. Pixar was an innovative animation studio and had talented people. Walt Disney was a mass media and entertainment company. By 'acquiring' Pixar, Walt Disney got access to high quality content which is essential for any mass-media company. A vertical merger may be done between a supplier and customer.
- **Forward integration:** If the acquirer moves up the value chain towards the ultimate consumer it is called Forward Integration (e.g., an ice cream manufacturer acquires restaurants where it can serve ice cream).
- **Backward integration:** If the acquirer moves down the value chain towards raw materials (e.g., of the ice cream manufacturer acquires a dairy farm to have better access to milk).
- **Conglomerate merger:** A conglomerate or diagonal merger is one where the merging companies are neither into the same products or services, nor in the same business. It may be part of the diversification strategy of the company.



Importance of Valn

1. Traditional Business => Sales ✓, Cost ✓, Pft ✓ → Real Est, Gold, Inv, Vacation

2. Large Enterprises => Swiggy / Zomato / Jio

Sales ✓
Cost (v)
Pft ??

Other variables → Next 10 yr: 1 2 3 4 - - -

FV

Yr	Pft	Valn	Marketing	No. of Shares	Cell
1	✓	✓ (Notional)	✓ (Actual)	✓	✓

2 ✓ ✓

3 ✓ ✓

Valuation in Merger & Acquisition

Yr | Pft | No. of Cust | No. of Trans | Value/Sh

✓ ✓ ✓ ✓ ✓

Pft ↑

No. of Cust ↑

No of Trans ↑

Organic Expansion

- Mktg
- Product Mix/Variations
- Pricing
- Technology

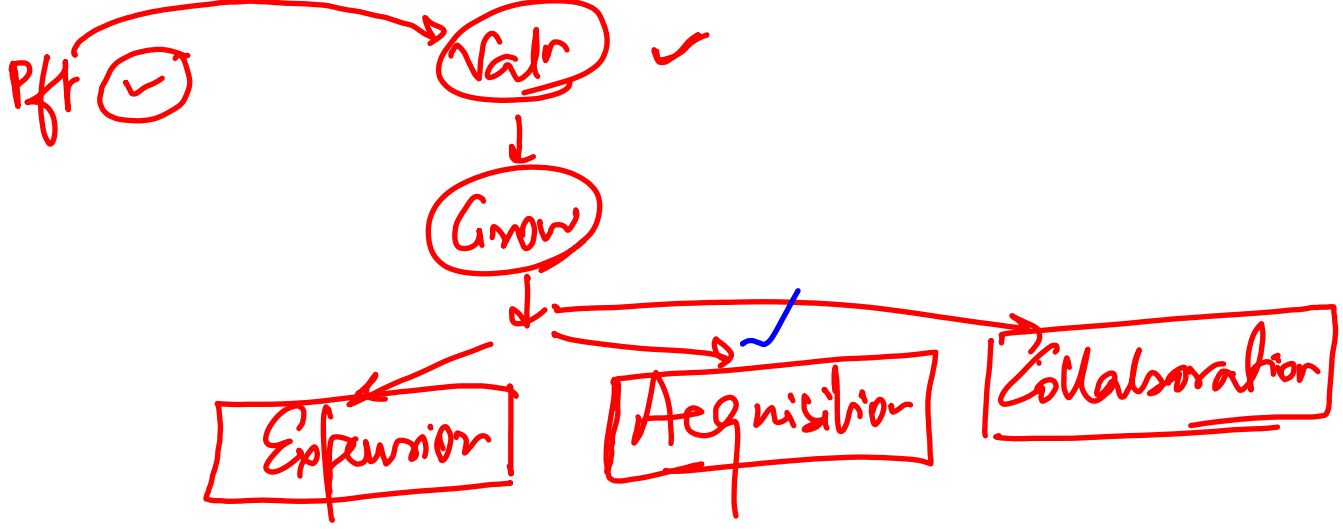
- Time taking = 2yr
- Costly = 100 cr.

Inorganic

Buy / Acquire / Merger with another Co

- Readymade (fast)
- Costly = 100 + Extra

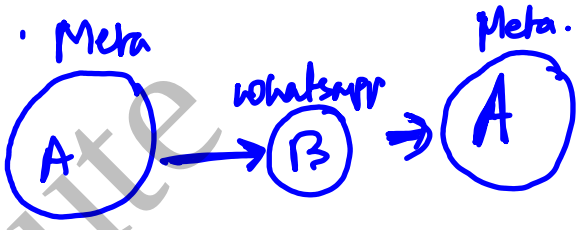
IP



---

1. Types of Mergers

(a) Acquisition or Takeover =>



(b) Horizontal merger => Acquiring same business

(c) Vertical Merger => Acquiring Supplier / Customer

- Forward Integn => Customer (Ice cream Co. acq Restaurant)
- Backward Integn => Supplier. (Ice cream co. acq dairy farm)

(d) Conglomerate merger

- diversified group of companies

[Tata Sons]

(e) Hostile Merger ⇒ Target Co. are not willing to merge, still the acquiring Co. strategises to merge. by way of :-

(i) Tender offer

(ii) Proxy fight (Porsche vs Volkswagen)

Defensive Strategies — by target Co. to save itself from hostile takeover

(a) Poison Pills ⇒ Issue stock options to connected/loyal Cos. or people

(b) Poison Put ⇒ Target Co. gives bondholders a right to sell their bonds at a pre specified price in the event of takeover.

(c) Share Repurchase ⇒ Target Co. starts buying own shares from the mkt

(d) Crown Jewel ⇒ Selling off the most attractive asset by the Target Co., to make itself unattractive.

(e) White Knight ⇒ Getting acquired by a friendly Co.

2. Motives of Merger

- Growth
- Creation of Synergy ⇒ 1 + 1 => 2 (Extra = Synergy)
  - Increased Mkt Power
  - Acquiring Unique Capabilities & Resources
  - Diversification
  - Valuation Increase

3. Types of Acquisition

Strategic
↓
Vertical | Horizontal
↓
intention is to own the Co.
↓
fb + whatsapp + Instagram

Financial
↓
only for investments
↓
improved governance, mgmt change, mentoring
↓
more common in pvt acquisition

4. Types of Deal or offer

- Cash Deal
  - ↓ Settlement in Cash
- Stock Deal
  - ↓ settlement by shares of acquiring co.
  - ↓ based on Exch Ratio
- Hybrid Deal
  - ↓ Cash + Stock

Old Promoter → permanently remove → Cash Deal

5. Terms

1. Acquiring Co. – the one that acquires
   – will pay the consideration
2. Target Co. – the one that gets acquired
   – will receive the consideration
3. Acquisition Price – Price paid to the target Co. for its shares

4. Exch Ratio ⇒ No. of shares to be recd by the target Co. for its 1 share.

⇒ $\frac{\text{Target Co. Value}}{\text{Acq Co. Value}}$ [EPS or MPS or given]

Target Co. EPS = 5

Acq Co. EPS = 8

∴ Exch ratio = 5/8 = 0.625

for 1 sh of target Co., 0.625 shares of Acq Co. will be provided.

5. Intrinsic Value ⇒ Income App: PV of CF

Cost App = Net Bv/sh

Mkt App = Price multiples

6. Purchase Price ⇒ Price accepted by target Co. (any negotiated price)

7. Market Price ⇒ Intrinsic Value ± premium

8. Value Gap => IV - P.P

9. Synergy Value => PV of addl benefits

10. Deal Price => The price that Target Co. would be willing to accept.

= Intrinsic Price + Acquisition Premium

Intrinsic Price => Inc App: PV of CF
Cost App: Net BV (at rep cost of assets)
Market App: Price multiple based

E.g. PE Multiple

Avg PE of Comparative Cos. × Expected EPS of Target Co.

If expected not available, take actual

Acquisition Premium ⇒ Avg premium of Comparable Cos.

$$\text{Premium \%} = \frac{\text{Deal Price} - \text{MPS}}{\text{MPS}}$$

Try Q1

ACQUISITION

When both the acquiring and acquired companies still exist as separate entities at the end of the transaction. The company making the purchase is known as the acquiring company or acquirer. The company that is bought is known as the target company or target. Some of the examples of acquisitions:

- In 2018, Walmart acquired 77 percent stake in Flipkart India for USD 16 billion.
- In 2013 Facebook acquired WhatsApp for USD 19 billion.
- In 2008, Tata Motors acquired the Jaguar Land Rover businesses from Ford Motor Company for a net consideration of USD 2.3 billion, in an all-cash transaction.
- Think & Learn Pvt Ltd (Byju's) acquired several companies such as Aakash Educational Services Ltd (Aakash Institute), Great Learning, Epic, Tynker, Scholr, Toppr, Gradeup, Hashlearn, Whodat, GeoGebra, WhitehatJr among others in 2021 alone in its pursuit to grow exponentially in EdTech space.

The company which is being acquired is known as the Target or Acquired company and the company that buys the other company is known as the Acquirer.

MOTIVES FOR MERGERS AND ACQUISITIONS

There are various motives for external restructuring.

- **Growth:** An ambitious company may be able to grow faster with mergers and acquisitions than with its own internal capabilities. Usually, external growth makes more sense if the target possesses the competencies and resources necessary to capitalize on emerging opportunities.
- **Creation of synergy:** Synergies are realized when the value of the combined entity that is formed because of the merger exceeds the value of the simple sum of its parts. These synergies can be in the form of Cost Synergies or Revenue Synergies. The synergy can also be expressed as the present value of any performance improvements to be achieved after the acquisition, which will show up as improved cash flows for the target's business or the acquirer's business.
- **Increasing market power:** By acquiring a competitor, a company can increase its pricing power in an industry that has a small number of firms. Vertical integration may give the acquirer greater market power if it allows the acquirer to gain control over a critical production input by merging with a dominant supplier.
- **Acquiring unique capabilities and resources:** Mergers or acquisitions may also be undertaken as an alternative to developing capabilities internally such as R&D capabilities, effective marketing, and talent.
- **Diversification:** Companies may engage in mergers and acquisitions activity to diversify their businesses.

2. ACQUISITION PRICING

In case or Mergers or Acquisitions, the acquirer needs to pay an amount to acquire the target. The shareholders of the target company get the compensation for dispensing with their shares in the target against cash or shares of Acquirer. The acquisition price is the price that is paid by the acquiring company for each of the target company's shares. The acquirer may offer a price which may or may not be accepted by the shareholders of the target. The final price is usually based upon negotiations between the acquiring company and the target company shareholders.

The acquirer can pay for the merger with cash, securities, or some combination of the two. In a cash offering, the cash might come from the acquiring company's existing assets or from a debt issue. In the most general case of a securities offering, the target shareholders receive shares of the acquirer's shares as compensation. In a stock offering, the exchange ratio determines the number of shares that shareholders in the target company receive in exchange for each of their shares in the target company. Each shareholder of the target company receives new shares based on the number of Target's shares he or she owns multiplied by the exchange ratio.

In a hostile acquisition, the target company's management does not want to be acquired. The acquirer offers a price higher than the target company's market price prior to the acquisition and invites shareholders in the target firm to tender their shares for the price. The difference between the acquisition price and the market price prior to the acquisition is called the acquisition premium. From an accounting perspective, this acquisition premium is treated as Goodwill in the books of the acquirer. That the price that is paid over and above the fair value of the target company being acquired. From a Corporate Finance perspective, the acquirer must justify this premium through synergies that they will get after the acquisition.

VALUE CREATION

Acquisitions create value when the cash flows of the combined companies are greater than the sum of their individual values. If the acquirer doesn't pay too much for the acquisition, some of that value will accrue to the acquirer's shareholders. The value created for an acquirer's shareholders equals the difference between the value received by the acquirer and the price paid (Purchase Consideration) by the acquirer:

Value Created for Acquirer	=	Value Received	Less	Price paid for acquisition
Value Created for Acquirer	=	(Standalone Value of Target + Value of Performance Improvements)	Less	(Market Value of Target + Acquisition Premium)

Intrinsic value	**Market value**	**Purchase Value** Value Gap (value to target shareholders)	**Synergy Value** (value to acquirer shareholders)

Value Gap & Synergy Value

In today's market, the purchase price of an acquisition will nearly always be higher than the intrinsic value of the target company. An acquirer needs to be sure that there are enough cost savings and revenue generators - synergy value - to justify the premium so that the target company's shareholders don't get all the value that the deal creates.

Intrinsic Value: the most basic value of the company its intrinsic value is based principally on the net present value of expected future cash flows completely independent of any acquisition. This assumes the company continues under current management with whatever revenue growth and performance improvements have already been anticipated by the market.

Market value: On top of the intrinsic value the market may add a premium to reflect the likelihood that an offer of the company will be made. Alternatively, a higher offer may be tendered than one currently on the table. Market value commonly called current market capitalization is the same as the share price. It reflects the market participants is valuation of the company.

Purchase price: This is considered as the anticipated take out value. It's the price that a bidder anticipates having to pay to be accepted by the target shareholders.

Synergy value: The net present value of the cashflows that will result from improvements made when the companies are combined. These are improvements made when the companies are combined. These are improvements above and beyond those the market already anticipates each company would make if the acquisition didn't occur, since those are already incorporated into the intrinsic value of each company.

Value gap: The difference between intrinsic value and the purchase price

2.1 Analysing Premium offered to Target Stockholders

A "purchase premium" in the context of mergers and acquisitions refers to the excess that an acquirer pays over the market trading value of the target company's shares being acquired. "Premiums Paid Analysis" is the name of a common investment banking analysis that reviews comparable transactions and averages the premiums paid for those transactions. Looking at historical premiums when negotiating the acquisition of a public company is a key part of framing the purchase price range. Additionally, the target company's management analyses historical premiums paid on comparable transactions to demonstrate to their shareholders that they have done their duty of maximizing value to shareholders.

Premiums tend to be higher in strategic deals (one company acquiring another company) as opposed to financial deals (a private equity firm acquiring a company). That's because a strategic acquirer often gains cost savings (synergies) from the newly combined company that increases how much it can afford to pay. **Example**, When Microsoft acquired LinkedIn on June 13, 2016, it paid USD 196 per share, representing a 49.5% premium over LinkedIn's closing share price of USD 131.08 per share the day prior to the deal announcement.

ESTIMATING ACQUISITION PREMIUM

The acquisition premium represents the amount (per share) above the current market price that shareholders would accept to approve the merger transaction (give up ownership of the target to the acquirer). The takeover premium is usually expressed as a percentage of the stock price and is calculated as:

Target Shareholders' Gain = Deal price – Premerger Market Price of Target

$$\textbf{Acquisition Premium (\%)} = \frac{\text{(Deal price} - \text{Premerger price of Target)}}{\text{Premerger price of target}}$$

Acquisition premiums paid in recent acquisitions of similar companies (as the target) are used to estimate the acquisition premium.

2.2 Analysing Value of the Target to the Acquirer

The reason that any acquirer would be willing to pay a takeover price more than the target's market value is because it believes that the benefits (e.g., improved sales or reduced costs) it would derive from the merger exceed the premium paid for the target. All other factors remaining the same, synergies increase the acquirer's gain from the merger, while the takeover premium paid to target shareholders offsets any gains to the acquirer.

Acquirer's gain = Synergies – Premium

= S - (P T – VT)

S = Synergies created by the transaction

PT = Price paid for the target or the Deal price

VT = Pre-merger value of the target or the Pre-merger price of target

When evaluating a merger offer, the minimum bid that target shareholders would accept is the pre-merger market value of the target company, while the maximum amount that any acquirer would be willing to pay is the pre-merger value of the target plus the value of potential synergies. Thus, the bidding prices normally lie between these two amounts. This also implies that analysis of a merger not only depends on the assessment of pre-merger target value, but also assessments of estimated synergies.

Value of Acquirer (pre-merger)	
Add: Value of Target (pre-merger)	
Add: Synergy created by the merger	
Less: Cash paid to target shareholders	
Value of Combined Entity (post-merger)	

Acquirers usually prefer to include stock in the consideration paid to target shareholders because it effects the distribution of the risk and rewards of a merger between the acquirer and

the target. The choice of payment method depends on estimated synergies and relative value of the acquirer's shares.

If the acquirer is confident about its estimates of the target's value, the more it would prefer to pay in cash and the more the target would prefer to receive stock. Based on various empirical studies, in the short term, merger transactions generally benefit target company shareholders. Since the acquirer's almost always tend to give a premium to the target and there is a dilution in the acquirer's existing shareholding due to issue of shares or pay-out of cash, acquirers' share price tends to go down on the announcement of a merger or an acquisition. Further, both the acquirer and the target tend to see higher stock returns under a cash acquisition as opposed to a stock acquisition.

ACCRETION / DILUTION ANALYSIS

Accretion (Dilution) analysis measures the effects of a transaction on a potential acquirer's earnings assuming a given financing structure. As part of this analysis, we compare the acquirer's post-merger earnings per share (EPS) for the transaction with its pre-merger EPS on a stand-alone basis. If the combined EPS is lower than the acquirer standalone EPS the transaction is set to be dilutive, conversely if the EPS is higher, the transaction is said to be accretive. A Rule of thumb for 100% stock transactions is that when an acquirer purchases a target with a lower P/E , the acquisition is accretive. When a company pays a lower multiple for the target's earnings than the multiple at which its own earnings trade the transaction is de-facto accretive conversely transactions where an acquired purchases higher P/E target are dilutive. Acquirers usually target accretive transactions as they create value for their shareholders.

2.3 Earnings Multiples

The multiples based valuation is an application of the market approach of valuation. The market approach is based on the principle of substitution which states that "one will pay no more for an item than the cost of acquiring an equally desirable substitute." Thus, with the market approach value is determined based on prices that have been paid for similar items in the relevant marketplace. Expert judgement is needed for interpretation of what companies are similar and what markets are relevant. The market approach relevant to valuation for mergers and acquisitions includes two primary methods, (a) the M&A transaction and (b) the guideline public company. They result from different kinds of transactions and yield different types of value.

Transaction multiples method

The transaction method looks at the prices paid typically by public companies to acquire a controlling interest in a business. The buyers in these transactions are publicly traded companies because closely held businesses usually do not reveal financial information when they make acquisitions. These transactions are often strategic where the buyer is usually acquiring a company in the same or similar industry in which it currently operates to achieve various synergies or other integrative benefits. Thus, the price paid most reflects investment value to that specific buyer rather than fair value which assumes a financial buyer.

Guideline publicly traded multiples

It should be clearly understood that the transaction multiples are very different from the market multiples that are available from the stock markets stop the stock market multiples represents the volume from minority shareholders perspective. Whereas the transaction multiples represent transactions from controlling perspective.

Price – Earnings Multiple

The valuation here is based on the following relationship:

Price per share = EPS × P/E Ratio

Earnings per Share (EPS) is projected for the company being valued.

In the case of unlisted companies, Price to Earnings Ratio (P/E Ratio) of the peer group is considered. Peer group would be other listed companies from the same sector of a similar size.

Where more than one such company exists in the peer group, then a weighted average is used. Suitable adjustments are made to the ratio to reflect specific areas where the company is different from the peer group.

Example 1: If the company's EPS is projected to be ₹ 6, and peer group P/E Ratio is 12 times, then the shares of the company will be valued at ₹ 6 × 12 i.e. ₹ 72 per share.

If the company has issued 10 Million shares, then the valuation of the company would be ₹72 × 10 Million i.e., ₹720 Million.

EV-EBIDTA Multiple

Earnings are affected by factors such as:

- Financing mix of debt and equity
- Accounting policies regarding depreciation and amortisation
- Tax planning

These factors are not so closely linked to the actual operations of the company. An alternate approach to valuation uses Earnings before Interest, Depreciation, Tax and Amortisation (EBIDTA). It is based on the following relationship:

Value of the company = EBIDTA × EV-EBIDTA Multiple

EBIDTA is projected for the company being valued. As with P/E Ratio, EBIDTA multiple for the peer group can be used, when the company is not listed.

Example 2: if the company's EBIDTA is projected at ₹50 Million, and the peer group EBIDTA multiple is 20 times, then the company will be valued at ₹50 Million × 20 i.e. ₹1,000 Million.

Enterprise Value

This is calculated as the market value of equity and debt of the company, less cash/ bank and the value of investments in the company's portfolio.

If a company's shares are valued at ₹50 per share, and it has issued 10 Million shares, then the market value of the company's shares (also referred to as 'market capitalisation') would be ₹50 × 10 Million i.e. ₹500 Million.

Example 3: the market value of the debt that the company has taken is ₹10 Million, and the company has an investment portfolio worth ₹ 5 Million. The company also has ₹ 2 Million in the form of cash.

Enterprise Value can be calculated as ₹500 + ₹10 – ₹5 – ₹2 i.e., ₹503 mn.

Price to Book Value

The valuation is based on the following relationship:

Price per share = Book Value per share × Price to Book Value Ratio

The book value per share of the company is considered. Price to Book Value Ratio of the peer group is used for unlisted companies.

Example 4: If the book value per share of the company is ₹ 22, and Price to Book Value ratio of the peer group is 1.5, then each share of the company is valued at ₹ 22 × 1.5 i.e., ₹ 33.

Price to Sales Multiple

This method links valuation to the sales turnover of the company. The relationship used is as follows:

Value = Sales Turnover × Price / Sales Multiple

Example 5: the sales turnover of a company is ₹ 150 million. The peer group sales turnover is ₹ 600 million, and peer group market capitalisation is ₹ 1,800 million. The peer group sales multiple is thus ₹1,800 million / ₹600 million i.e., 3 times

Accordingly, the company will be valued at ₹ 150 million × 3 i.e., ₹ 450 million.

Choosing the right comparable companies

To use earnings multiples properly, we must assess the accounting statements to make sure we are comparing companies on an apples-to-apples basis.

2.4 Discounted Abnormal Earnings or Cash Flows

Valuers must check for operating and normal financial statements while performing financial due diligence and normalise the financial statements before arriving at the valuation. These adjustments are required for both the Target and Acquiring company in case of Stock based mergers and acquisition. Adjustments to a target's financial statements, commonly referred to as normalization adjustments convert the reported accounting information to amounts that show the true economic performance, financial position and cash flow after company.

Differences between amounts shown on the financial statement and the market values most commonly result from one or more of these causes

- Non-operating income and expenses that are non recuring in nature and may not flow through in future periods. Thus, these should be removed from the Profit & Loss Statement while evaluating value.
- Discretionary expenses to minimise taxes including excess compensation, perquisites, rent or above market payments made to owners or other related parties.
- Adjustment required to change the basis of accounting, including conversion from cash to accrual or from one inventory or depreciation method to another.
- Differences between the market value of assets and the amounts at which they are carried on the companies books.

For smaller companies these normalization adjustments may have a greater impact than for midsize or larger companies. Adjustments can be made to both the profit and loss statement and the balance sheet or one can be adjusted without a corresponding change to the other. For example, nonrecurring gain or loss can be removed from the Profit & Loss Statement without any required adjustment to the balance sheet.

Valuers should assess whether the controlling shareholders of the target company have made discretionary adjustments that might impact the controlling shareholders more. These may include the compensation paid to the promoters, properties of the promoters rented by the firm loans taken from or given to the related parties at rates of interest which are not in line with the market rate of interest.

In case of the balance sheet, the most important adjustments are the ones which require changing the book value of the assets to their market values. Often the contingent liabilities may not be recorded in the balance sheet whereas there may be reasonable possibility of those accruing to the firm. In such cases, the contingent liabilities must also be identified into the balance sheet as liabilities. It is common for companies to not record internally generated intangible such as brand value in the balance sheet. The acquirer must recognise the brand value of the acquired intangibles while preparing the financial statements of the target company.

VALUING THE ASSETS

When the financial statements are prepared using the historical cost accounting a few notes may be relevant.

Tangible assets: It is always wise to have lands and buildings revalued. Items such as plant and machinery, motor vehicles furniture and fixtures that are shown at their book values rather than current cost may require to be revalued. Depreciation rates employed during the period of review must also be reviewed to ensure that the PP&E produce either a value in use for operating assets or the value in exchange if the assets are surplus to the requirements.

Investments: Listed shares and securities should be valued at their market price for the year but unlisted shares must be subject of a secondary valuation using methods similar to those in the main valuation. It is also important to distinguish between investments that are necessary for earnings capacity of the business such as trade investments and investment in subsidiaries, which are long term holdings and those investments that are really spare cash items.

Current assets: If inventory and debtor turnover ratios are rapid there balance sheet values may be taken without extensive revision. However some adjustment to current cost may become apparent when the trading results are reviewed, relating to historical cost methods of stock valuation and provision for bad debts.

Intangible assets: Intangible assets me or may not be recognised in the financial statements. As per accounting regulations internally generated intangible such as brands and trademarks may not be recognised in the financial statements of the target company. However accounting regulations do allow the acquirer to recognise the identifiable intangible assets while preparing the combined financial statements after the acquisition. These intangible assets certainly form the part of the negotiation while fixing the acquisition price for the target. Usually valuers are appointed to identify the intangible assets which may not be recorded in the financial statements of the target company or even to re-evaluate the value of the intangibles that are already recorded in the financial statements.

2.5 Acquisitions by Private Equity and Venture Capitalists

Acquisitions are often classified into two types.

(a) Strategic Acquisitions and

(b) Financial Acquisitions.

Strategic acquisitions are those where an acquirer intends to run the company themselves. There are significant changes in the way the company operates. The acquirer aims at deriving operational synergies through management integration, product changes, operational changes and more. The target company sees this as an interference in their operations.

Financial Acquisitions are often done by Private Equities, Venture Capitalists and portfolio companies who acquirer a company purely for their value and normally do not make significant operational changes. Target companies who have high potential but are short of funds normally welcome such acquisitions.

The best private-equity firms don't just recapitalize companies with debt; they improve the companies' performance through improved governance. A McKinsey study of 60 successful investments by 11 leading private-equity firms found that in almost two-thirds of the transactions, the primary source of new value was improvement in the operating performance of the company, relative to peers, through fruitful interaction between the owners and the management team. The use of financial leverage and clever timing of investments, often cited as private-equity firms' most important sources of success, were not as important as improved governance. Private-equity firms don't have the time or skills to run their portfolio companies from day to day, but the higher-performing private-equity firms do govern these companies very differently from the way exchange-listed companies are governed. This is a key source of their outperformance. Typically, the private-equity firms introduce a stronger performance culture and make quick management changes when necessary. They encourage managers to abandon any sacred cows, and they give managers leeway to focus on a longer horizon, say five years, rather than the typical one-year horizon for a listed company. Private-equity firms spend most of their time on strategy and performance management, rather than compliance and risk avoidance.

3. ACQUISITION OUTCOME

IMPACT ON SHARE PRICE

The shareholders of a company benefit from a deal if (and only if) the value of their shares increases. The increase may occur immediately, or it may be delayed. Normally the immediate response to the announcement of a merger or acquisition is usually a downward blip in the buyer's stock price but if the deal creates value then as its success is revealed the buyers stock price will appreciate at rate higher than its expected rate of return (the market's risk adjusted for the stock's beta). These cumulative abnormal returns or CAR will continue until the stock reaches a new equilibrium that reflects the value created by the deal. Thereafter, the stock will appreciate at its normal common risk adjusted rate of return subject to noise and new information.

FRIENDLY MERGERS

Generally, the acquirer approaches the target's management directly unless it has reason to believe that the target will not welcome the merger. If both companies are open to the idea, the companies enter into merger discussions. Key discussion points at this stage include the amount of consideration that target shareholders will receive, terms of the transaction, and post-merger management structure.

Prior to reaching a formal agreement, both parties conduct due diligence (financial due diligence, legal due diligence, etc.) where accounts and other financial records are examined to ensure the accuracy of representations made by either party during negotiations (e.g., the acquirer might want to confirm that the target's assets are actually worth the amount claimed by the target). Any issues that arise at this stage may have a direct bearing on the price and/or terms of the deal. The target may also conduct due diligence on the acquirer to ensure financial soundness and ability to meet merger payment terms.

Upon completion of due diligence and negotiations, the parties sign a definitive merger agreement, which is a contract that contains terms and conditions, warranties or representations, covenants, termination procedures and remedies, and other miscellaneous clauses.

Typically, merger discussions and negotiations are kept confidential until the definitive merger agreement has been signed. Once it has been signed, the transaction is announced to the public through a joint press release by both companies. Usually, shareholders' approval is required (for target shareholders to approve a stock transaction, or acquirer shareholders to approve the issuance of a substantial amount of shares to finance a stock offering) shareholders are provided with a proxy statement that contains all material facts. Once all required approvals have been obtained (from shareholders, regulatory bodies, etc.), legal advisors file documentation as specified by the regulator (Ministry of Corporate Affairs, SEBI – if any of the companies are listed) and then the transaction is deemed complete. Agreed-upon consideration is paid to target shareholders, and the companies are officially and legally combined.

HOSTILE MERGERS

When the target's management or Board of Directors are not receptive to the idea of a merger, the acquirer may take the deal directly to the target's shareholders through a tender offer or a proxy fight.

In a tender offer:

- The acquirer invites target shareholders individually to submit their shares for a payment.
- The payment can be in the form of cash, shares of the acquirer, other securities, or a combination of cash and securities.

In a proxy fight:

- The acquirer approaches target shareholders to vote for an acquirer-nominated board of directors which, if elected, is then able to replace the target's management, and turn the transaction into a friendly merger.
- Proxy solicitation is approved by regulators and then proxies are mailed directly to target shareholders.

TAKEOVERS

When faced with a hostile tender (takeover) offer, the target's board of directors can

(i) sell the company, either to the bidder or a third party or

(ii) try to remain independent.

The determination of the target to resist overtures from the acquirer depends on

(i) the strength of the company's takeover defences,

(ii) management's resolve to remain independent, and

(iii) the premium above the target's market price offered by the acquirer.

The target may use defensive measures to delay, negotiate a better deal for its shareholders, or try to keep the company independent. Takeover defences can be classified as pre-offer defences and post-offer defences.'

- **Poison pills** grant a company the right to issue stock options to existing shareholders enabling them to purchase additional shares of stock at significantly discounted prices. They effectively make it very expensive for the acquirer to take over the target without approval of the target's board of directors.

  There are two types of poison pills:

  (i) A "flip-in" allows existing shareholders (except the acquirer) to buy more shares of the target at a discount.

  (ii) A "flip-over" allows stockholders to buy the acquirer's shares at a discounted price after the merger.

- **Poison puts** give target company bondholders the right to sell their bonds back to the target at a pre-specified redemption price (typically par value or above) in the event of

a takeover. This means that if the acquirer takes over the target, it would need to raise a substantial amount of cash to refinance the target's debt.

- **Share repurchase:** The target may repurchase its shares from shareholders. This can increase the cost of a takeover for the acquirer by increasing the stock's price, or by causing the acquirer to increase its bid to remain competitive with the target's offer for its own shares. If financed by issuing debt, share repurchases can increase the target's leverage ("leveraged recapitalisation"), which makes it less attractive as a takeover target.
- **"Crown jewel" defence:** The target sells off a valuable asset or a division to make the firm less attractive to the would-be acquirer. However, if the sale is initiated after a hostile bid, there is a chance that courts would deem the sale illegal.
- **White knight defence:** The target encourages a third firm (that is more acceptable to target company management) to acquire the target company. The entrance of a white knight may ignite a bidding war for the target, which may result in improved terms being offered to target shareholders. It may also result in the eventual acquirer suffering a winner's curse (overpaying for the company).

TARGET MANAGEMENT ENTRENCHMENT

Managerial entrenchment can be defined as an action, such as investing corporate funds, that is made by a manager in order to boost his or her perceived value as an employee, rather than to benefit the company financially or otherwise.

Managers may sometimes hold little equity and shareholders are too dispersed to take action against non-value maximization behaviour. So it is possible that the acquirer will lay off the target's management after acquisition. Giving ownership to a manager within a company may translate into greater voting power which makes the manager's workplace more secure. Hence, they gain protection against takeover threats and the current managerial market.

Examples of entrenchment strategies

There are a variety of entrenchment practices that managers may employ.

- **Poison pills** – as discussed above, a poison pill gives current shareholders the right to purchase additional shares of the company at extremely attractive prices which causes dilution and effectively increases the cost to the potential acquirer.
- **Restricted Voting rights** – it is common to issue shares of differential voting rights so that control can be retained with some key promoters even if the shares are transferred. In some cases, equity ownership above a certain threshold (e.g. 15%) triggers a loss of voting rights and required board approval. This forces the bidder to negotiate with the board directly.
- **Golden parachutes** are compensation arrangements between the target and its senior management where the managers get lucrative cash payouts if they leave the target company after a merger. These contracts given to key executives and can be used as a type of anti-takeover measure taken by a firm to discourage an unwanted takeover attempt.

3.1 Anti-trust and Security Issues

Historically, regulators used market share as a measure of market power to determine whether there were antitrust violations among competitors in an industry. This was done using a simple measure of industry concentration along with market share information. Companies contemplating a merger could determine in advance whether they would be in violation if they were to merge. The approach is transparent and predictable but is deemed too simplistic and rigid.

The **Herfindahl-Hirschman Index (HHI)** is considered to be a better measure of assessing market concentration. The HHI measure sums the squares of each company's market share (based on sales) in the industry. Not only is it easy to calculate and interpret, but the HHI is also more effective at modelling market concentration.

$$HHI = \sum_{i}^{N} \left(\frac{\text{Sales of firm i}}{\text{Total sales of the market}} \times 100 \right)^2$$

Students should recall that Sales of the firm / Total Sales = market share

HHIs are calculated based on post-merger market shares.

- An HHI of less than 1,000 suggests that the market is not concentrated.
- An HHI between 1,000 and 1,800 suggests that the market is moderately concentrated.
- An HHI above 1,800 suggests that the market is highly concentrated.

In India, Competition Commission of India regulates the industry concentration to protect consumers' interests.

3.2 Post Transactions Value incorporating effect of intended synergies

Analysis of M&A Transactions involves identification of economic gains from the transaction. If the combined entity is more than the sum of its parts, the transaction is said to have created synergies. The difference between the combined value and the sum of the parts of individual companies is usually attributed to synergy.

Combined Value = Value of Acquirer + Standalone value of the target + Synergy

Since in many cases, the acquirer ends up paying a premium over the standalone fair value of the company, the synergy may not occur unless the premium paid is recovered. Further, there re costs of integration as well.

Therefore, the **Net Gain = Value of synergy - premium paid – Cost of integration**

While assessing synergies, operating improvements are a big source of value creation. Better post-merger integration could lead to abnormal returns even when the acquired company is in unrelated business. Managerial talent is an important instrument in creating value by cutting down costs, improving revenues and improving margins. Many executive compensation is

tied to the performance in the post-merger. Providing equity stake in the company induces executives to think and behave like shareholders.

VALUING CONTROL:

The safest way to value a target firm is in steps starting with the status quo valuation of the firm and following up with a value for control. We start our valuation of the target firm by estimating the firm value with existing investment, financing and dividend policies. This valuation, which we turn the status quo valuation provides a base from which we can estimate control and synergy premiums.

Many hostile takeovers are justified based on the existence of a market for corporate control. Investors and firms are willing to pay large premiums over the market price to control the management of firms, especially those that they perceive to be poorly run. This section explores the determinants of the value of corporate control and attempts to value it in the context of an acquisition in general the value of control will be much higher for a poorly managed firm that operates at below-optimum capacity than for a well-managed firm. The value of controlling a firm comes from changes made to existing management policy that can increase the firm value. Assets can be acquired or liquidated the financing mix can be changed the dividend policy re-evaluated and the firm restructured to maximise value. The value of the control can be written as:

Value of Control = Value of the firm $_{\text{(optimally managed)}}$ **– Value of the firm** $_{\text{(with current management)}}$

VALUING SYNERGY:

As discussed earlier, synergies may be obtained in various forms in case of mergers and acquisitions. However, some experts believe that synergy may not be valued. One school of thought argues that synergy is too nebulous to be valued and that any systematic attempt to do so requires so many assumptions that it is pointless. If this is true a firm should not be willing to pay large premiums for synergy if it cannot attach a value to get.

As valuers we maintain that synergy can be valued.

Assessment of synergies requires assessment of various questions.

- What form is the synergy expected to take?
- Will it reduce cost as a percentage of sales and increase profit margins?
- Will it increase future growth or length of the growth period?
- When will the synergies start affecting the cash flows post acquisition?

To influence value, synergy has to influence one of the 4 inputs to the valuation process - cash flows from existing assets, higher expected growth rates, a longer growth period or a lower cost of capital. Since value of synergies is the present value of the cash flows created by it, longer it takes for it to show up, the lesser its value. The value of synergy can be estimated similarly as we have assessed the value of control.

- **Step 1:** Value the firms involved in the merger independently by discounting expected cash flows to each firm at the weighted average cost of capital for that firm

- **Step 2:** Estimate the value of the combined firm with no synergy by adding the values obtained for each firm in the first step.
- **Step 3:** Build in the effects of synergy into expected growth rates and cash flows and value the combined firm with synergy.
- **Step 4:** The difference between the value of the combined firm with synergy and the value of the combined firm without synergy provides a value for synergy.

3.3 Exit strategies

Exit strategies involve Mergers and Acquisitions, IPOs, selling stakes to investors, family succession among others.

M&A deals: A merger or acquisition is a strong exit plan option for any company with their business for sale. This is one of the strongest exit strategies for business owners, as they can maintain control over price negotiations and set their own terms. However, M&A processes can be time-consuming and costly, and even fail.

Selling the stake to an investor: Shareholders can sell their stake to their partners or investors so that the business can run even if the shareholders exit the business. The term 'friendly buyer' is often used in this type of exit strategy, as it's likely that you would sell your stake to someone known and trusted. The company can continue to run with minimal disruption to business as usual, keeping revenue streams steady. It's possible that the potential buyer already has a vested interest in the business and is committed to its success in the long term.

However, finding a buyer or investor for the company can be difficult. Also, getting the right is difficult. Very often, businesses fail after M&As.

Acquihires : Acquihires is a business exit strategy where a company is bought solely to acquire its talent. This type of acquisition can be very beneficial to skilled employees as they will be well looked after once the business itself is sold.

Management and employee buyouts: In management buyouts, those already working within the business are able to transition into more senior roles to fill the gap in leadership. As the management team is already familiar with your business, they should be well equipped to manage the company.

3.4 Tax implications

Tax implications are some of the most common and influential factors affecting mergers and acquisitions. In fact, Tax is often the primary reason for mergers and acquisitions. If the M&A transaction is structured properly, an organization can save a lot of money through tax benefits.

The Income Tax Act of 1961 includes various provisions that talk about dealing with taxation in different ways of structuring. M&A transactions are carried in various ways.

DEFINITIONS

Amalgamation

"Amalgamation", in relation to companies, means the merger of one or more companies with another company or the merger of two or more companies to form one company (the company or companies which so merge being referred to as the amalgamating company or companies and the company with which they merge or which is formed as a result of the merger, as the amalgamated company) in such a manner that –

(a) all the property and liabilities of the amalgamating company or companies immediately before the amalgamation becomes the property and liabilities of the amalgamated company by virtue of the amalgamation;

(b) shareholders holding not less than three-fourths in value of the shares in the amalgamating company or companies (other than shares already held therein immediately before the amalgamation by, or by a nominee for, the amalgamated company or its subsidiary) become shareholders of the amalgamated company by virtue of the amalgamation, otherwise than as a result of the acquisition of the property of one company by another company pursuant to the purchase of such property by the other company or as a result of the distribution of such property to the other company after the winding up of the first-mentioned company;

Demerger

"Demerger", in relation to companies, means the transfer, pursuant to a scheme of arrangement under the Companies Act, by a demerged company of its one or more undertakings to any resulting company in such a manner that –

(a) all the property and liabilities of the undertaking, being transferred by the demerged company, immediately before the demerger, becomes the property and liabilities of the resulting company by virtue of the demerger;

(b) the property and the liabilities of the undertaking or undertakings being transferred by the demerged company are transferred at values appearing in its books of account immediately before the demerger (except in case where the values are recorded at different values as per Ind AS).

(c) the resulting company issues, in consideration of the demerger, its shares to the shareholders of the demerged company on a proportionate basis except where the resulting company itself is a shareholder of the demerged company;

(d) the shareholders holding not less than three-fourths in value of the shares in the demerged company (other than shares already held therein immediately before the demerger, or by a nominee for, the resulting company or, its subsidiary) become shareholders of the resulting company or companies by virtue of the demerger, otherwise than as a result of the acquisition of the property or assets of the demerged company or any undertaking thereof by the resulting company;

(e) the transfer of the undertaking is on a going concern basis;

(f) the demerger is in accordance with the conditions, if any, notified under sub-section (5) of section 72A by the Central Government in this behalf.

Slump Sale

"Slump sale" means the transfer of one or more undertaking, by any means, for a lump sum consideration without values being assigned to the individual assets and liabilities in such sales.

Tax exemption in case of Merger / Amalgamation

The Income Tax Act, 1961 doesn't define the term merger but only defines an "amalgamation" as defined under Section 2(1B) as "the merger of one or more companies with another company, or the merger of two or more companies to incorporate a new company."

For the provisions of the act, the company which is being merged is called the 'amalgamating company' and the company into which it merges or the resulting company as the outcome of the merger is called the 'amalgamated company'. The company which has been merged ceases its corporate identity from the day the amalgamation is effective. A merger requires approval of the National Company Law Tribunal (NCLT) and it is typically processed through an arrangement as specified under Section 230 to 232 of the Companies Act, 2013.

The Income Tax Act, 1961 provides that

- in an amalgamation all the assets and liabilities of the amalgamating company immediately preceding the amalgamation must become the assets and liabilities of the amalgamated company as an outcome of the amalgamation.
- At least 3/4th of the shareholders in the amalgamating company shall become shareholders of the amalgamated company as an outcome of the amalgamation.

Hence, only when a merger transaction follows the above mentioned two conditions, it can be termed as an amalgamation for the purposes of The Income Tax Act.

Section 47 (Capital Gains – transactions not regarded as transfer) of the Income Tax Act specifically exempts the following from Capital Gains:

47(iv) any transfer of a capital asset by a company to its subsidiary company, if –

(a) the parent company or its nominees hold the whole of the share capital of the subsidiary company, and

(b) the subsidiary company is an Indian company;

(v) any transfer of a capital asset by a subsidiary company to the holding company, if—

(a) the whole of the share capital of the subsidiary company is held by the holding company, and

(b) the holding company is an Indian company :

(vi) any transfer, in a scheme of amalgamation, of a capital asset by the amalgamating company to the amalgamated company if the amalgamated company is an Indian company;

(vi a)any transfer, in a scheme of amalgamation, of a capital asset being a share or shares held in an Indian company, by the amalgamating foreign company to the amalgamated foreign company, if—

(a) at least 25 percent of the shareholders of the amalgamating foreign company continue to remain shareholders of the amalgamated foreign company, and

(b) such transfer does not attract tax on capital gains in the country, in which the amalgamating company is incorporated;

(viaa) any transfer, in a scheme of amalgamation of a banking company with a banking institution sanctioned and brought into force by the Central Government under section 45 (7) of the Banking Regulation Act, 1949 (10 of 1949), of a capital asset by the banking company to the banking institution.

(viab) any transfer, in a scheme of amalgamation, of a capital asset, being a share of a foreign company, referred to in section 9 (1)(i) explanation 5, which derives, directly or indirectly, its value substantially from the share or shares of an Indian company, held by the amalgamating foreign company to the amalgamated foreign company, if—

(A) at least 25 percent of the shareholders of the amalgamating foreign company continue to remain shareholders of the amalgamated foreign company; and

(B) such transfer does not attract tax on capital gains in the country in which the amalgamating company is incorporated;

(vib) any transfer, in a demerger, of a capital asset by the demerged company to the resulting company, if the resulting company is an Indian company;

(vic) any transfer in a demerger, of a capital asset, being a share or shares held in an Indian company, by the demerged foreign company to the resulting foreign company, if—

(a) the shareholders holding not less than three-fourths in value of the shares of the demerged foreign company continue to remain shareholders of the resulting foreign company; and

(b) such transfer does not attract tax on capital gains in the country, in which the demerged foreign company is incorporated :

(vicc) any transfer in a demerger, of a capital asset, being a share of a foreign company, referred to in section 9 (1)(i) explanation 5, which derives, directly or indirectly, its value substantially from the share or shares of an Indian company, held by the demerged foreign company to the resulting foreign company, if—

(a) the shareholders, holding not less than three-fourths in value of the shares of the demerged foreign company, continue to remain shareholders of the resulting foreign company; and

(b) such transfer does not attract tax on capital gains in the country in which the demerged foreign company is incorporated:

(vid) any transfer or issue of shares by the resulting company, in a scheme of demerger to the shareholders of the demerged company if the transfer or issue is made in consideration of demerger of the undertaking;

(vii) any transfer by a shareholder, in a scheme of amalgamation, of a capital asset being a share or shares held by him in the amalgamating company, if—

(a) the transfer is made in consideration of the allotment to him of any share or shares in the amalgamated company except where the shareholder itself is the amalgamated company, and

(b) the amalgamated company is an Indian company;

In a situation of a tax neutral demerger, there shall be no capital gains tax on the demerging company on any transfer of capital assets to the resulting company (If an Indian company).

When there is a demerger of a foreign entity into a subsequent foreign entity where the capital assets are transferred, there shall be no tax implication on the capital gains in India if the following are complied with

- A minimum of 75% of shareholders of the demerging foreign company remain shareholders of the resulting foreign company.
- The country in which the demerging foreign company is incorporated, the said demerger is not chargeable to capital gains tax.

Amortisation of expenditure in case of amalgamation or demerger

Sec 35DD Provides that where an assessee, being an Indian company, incurs any expenditure, wholly and exclusively for the purposes of amalgamation or demerger of an undertaking, the assessee shall be allowed a deduction of an amount equal to one-fifth of such expenditure for each of the five successive previous years beginning with the previous year in which the amalgamation or demerger takes place.

Set off and carry forward of losses and unabsorbed depreciation

Subject to certain conditions of Sec 72A and 72AA, the accumulated loss and the unabsorbed depreciation of the amalgamating company shall be deemed to be the loss or, allowance for unabsorbed depreciation of the amalgamated company for the previous year in which the amalgamation was effected.

The accumulated loss shall not be set off or carried forward and the unabsorbed depreciation shall not be allowed in the assessment of the amalgamated company unless -

(a) the amalgamating company -

(i) has been engaged in the business, in which the accumulated loss occurred or depreciation remains unabsorbed, for three or more years;

(ii) has held continuously as on the date of the amalgamation at least three-fourths of the book value of fixed assets held by it two years prior to the date of amalgamation;

(b) the amalgamated company -

(i) holds continuously for a minimum period of five years from the date of amalgamation at least three- fourths of the book value of fixed assets of the amalgamating company acquired in a scheme of amalgamation;

(ii) continues the business of the amalgamating company for a minimum period of five years from the date of amalgamation;

(iii) fulfils such other conditions as may be prescribed to ensure the revival of the business of the amalgamating company or to ensure that the amalgamation is for genuine business purpose.

Business losses and unabsorbed depreciation of an amalgamating company may be allowed to be carried forward and set off in the hands of the amalgamated company, subject to the satisfaction of certain conditions. Business losses may be carried forward for eight years pursuant to a merger, subject to certain conditions.

In the case of a demerger, the accumulated losses and unabsorbed depreciation of the demerged company would be allowed to be carried forward and set off in the hands of a resulting company, subject to the satisfaction of certain conditions. Accumulated business losses are permitted to be carried forward for the unexpired period and depreciation can be carried forward indefinitely.

Carry forward of tax losses & unabsorbed depreciation:

The resulting company is to carry forward the accumulated tax losses and depreciation which is unabsorbed of the undertaking where:

The company which is being transferred has a direct relation to it.

There is no direct relation to it, then it has to be segregated between the demerging company and the resulting company in exactly the same percentage in which the assets have been ascertained by the demerging company and the resulting company.

Cost of assets & depreciation in the statement of the Demerging company qua the assets transferred, the opening written down value of the assets which are transferred is written down as the same value.

The demerging company is allowed a deduction in the tax treatment in respect of expenses incurred on the demerger transaction equally for 5 years commencing from the year the demerger takes place.

Slump Sale

Gains arising on the transfer of an undertaking for a lump sum consideration, without assigning consideration toward any of the assets individually, is chargeable to tax as per the special provisions as contained under the Act. Capital gains for the purposes of a slump sale are computed as the difference between the sales consideration (less expenditure incurred in relation to the transfer) and the net worth of the undertaking.

Pursuant to amendment vide the Finance Act, 2021 (Finance Act), it has been clarified that a slump exchange is covered within the ambit of taxation. Pursuant to an amendment vide the Finance Act, the sales consideration has now been linked to the Fair Market Value (FMV) of capital assets, as on the date of transfer, and where such sales consideration is lower than the FMV, such that the FMV would be considered as the full value of consideration for the purpose of computing capital gains. This is to be calculated as per Rule 11UAE of Income Tax Rules.

- In a scheme of amalgamation where the amalgamated company is an Indian company, any transfer of a capital asset by an amalgamating company to the said amalgamated company shall be exempted.
- In a scheme of amalgamation where there is a transfer of shares by a shareholder subject to the following 2 conditions getting satisfied:
    - The transfer is made in consideration of the allotment to him of any share or shares in the amalgamated company except where the shareholder itself is the amalgamated company, and
    - The amalgamated company is an Indian company;

The calculation of the acquisition of shares for such shareholders will be done at the cost at which the shares of the amalgamating company had been acquired by the shareholder. The period of the holding shall include the period during which the shares were held by the shareholders of the amalgamating company.

In a scheme of amalgamation, any transfer of a capital asset such as being a share or shares held in an Indian company, by the amalgamating foreign company to the amalgamated foreign company, if

- A minimum of 25% of the shareholders of the amalgamating foreign company carry on as shareholders of the amalgamated foreign company, and
- In the country where the amalgamating country is incorporated, no tax is levied on capital gains in an amalgamation scheme between 2 foreign companies where as a consequence the transfer results in an indirect transfer of Indian shares along with the conditions as specified above, tax exemption can be availed.

An amalgamation between two or more foreign companies can be exempted from tax in India for the amalgamating foreign company, however, it will definitely result in Indian Capital Tax gains for the shareholders.

INDIRECT TAXES

As in an Amalgamation/ Merger, there is a transfer of the company on a going-concern basis the Goods & Services Tax is not usually applicable. However, it has been stated under Section 18(3) of the Central Goods & Services Tax Act, 2017 that availability of the input tax credit furnishes that where there is a change in the constitution of a registered person on account of an amalgamation, transfer of unutilized input tax credit in the electronic credit ledger shall be permitted if certain conditions are satisfied.

STAMP DUTY

In India, the constitution segregates the power between the Centre and the State Government towards levying stamp duty. Stamp duty is always paid when a Sale Deed or a Deed of Conveyance is executed. The central Government enacts The Indian stamp Act of, 1899 which may or may not be adopted by the states. Certain states in India have their own respective stamp acts.

Q1

Aruna has been assigned the task of estimating a fair acquisition price for Mani Ltd. She decides to use comparable company analysis to determine a fair acquisition price and gathers the following information regarding three comparable companies.

	Company A	Company B	Company C
Price Per share (₹)	240.00	150.00	300.00
Earnings Per Share (₹)	14.50	9.57	19.00

She has also gathered the following information relating to recent acquisitions of companies that are like Mani Ltd.

	Company P	Company Q	Company R
Market Price	92.45	357.50	224.00
Deal price	117.00	425.00	290.00

The expected EPS of Mani Ltd is ₹15.

Calculate the expected Deal Price that should be offered for the acquisition.

Reference

Deal Price

Answer

The Average P/E can be calculated as

	Company A	Company B	Company C	Average
Price Per share (₹)	240.00	150.00	300.00	
Earnings Per Share (₹)	14.50	9.57	19.00	
P/E	16.55	15.67	15.79	16.0

Accordingly, the Intrinsic value of Mani Ltd can be calculated based on P/E Multiple.

Intrinsic Price = Expected EPS × Average P/E Multiple of comparable companies

= ₹15 × 16

= ₹240.06

Soln to Q1 Pg —

N1 Avg P/E of Comparable Cos.

	Co. A	Co. B	Co. C	Avg
P/E Ratio	$\frac{240}{14.5}$	$\frac{150}{9.57}$	$\frac{300}{19}$	
	= 16.55	= 15.67	= 15.79	16.00

N2 Avg Acq premium of Comparable Cos.

	Co. P	Co. Q	Co. R	Avg
$= \frac{\text{Deal Price} - \text{MPS}}{\text{MPS}}$	$= \frac{117 - 92.45}{92.45}$	$\frac{425 - 357.5}{357.5}$	$\frac{290 - 224}{224}$	
	= 26.55%	= 18.88%	= 29.46%	24.96%

N3 If of Mani Ltd

$= \text{Exp EPS} \times \underset{\text{Avg}}{\text{P/E Ratio}} = 15 \times 16 = 240$

$\therefore$ Deal Price = IP + Acq Premium

= 240 + 24.96% of 240

= 240 + 59.9

= ₹299.9

Note: IP ⇒ Inc App | Cost App | Mkt App

↓

Share Price Multiple

↓

Earning | Sales | BV

PE × EPS (Avg)

Price/Sales (Avg) × Exp Sales

Price/BV × Act BV

or

EV Multiple

EV/Sales Ratio (Avg) × Sales

EV/EBITDA Ratio (Avg) × EBITDA

Enterprise Value = ✓

(-) Value of Debt = (✓)

Value of Eq ✓

No. of shares ✓

MPS = IP ✓

If IP is the deal price, acquisition premium

$$= \frac{\text{Deal Price} - \text{Current MP}}{\text{Current MP}}$$

The Average Acquisition Premium is calculated based on recent comparable transactions

	Company P	Company Q	Company R	Average
Market Price (₹)	92.45	357.50	224.00	
Deal price (₹)	117.00	425.00	290.00	
Acquisition Premium	(117 – 92.45) / 92.45 × 100	18.9%	29.5%	25.0%
	= 26.6%			

Deal price = Intrinsic Price × (1 + Acquisition Premium)

= ₹240.06 × (1+25%)

= ₹300

Q2

Yasmin has been assigned to evaluate the acquisition price of HBR Ltd. The information about HBR Ltd is given below.

Price per share (₹)	11
Shares (₹ Million)	50
Debt (₹ Million)	500
Revenue LTM (₹ Million)	700
EBITDA (₹ Million)	125
EPS (₹)	0.9

Yasmin has assessed some recent comparable transactions

Acquirer	Target	Equity	EV	EV / LTM Sales	EV / LTM EBITDA	Equity / LTM PE
A	P	200	500	1.0	9.0	17.0
B	Q	125	250	1.7	12.0	15.0
C	R	700	100	2.2	14.5	20.0
D	S	1,200	1,000	0.9	8.5	14.0
E	T	200	400	2.5	11.0	22.0

You are **required** to assess the acquisition price and its premium against the current market price using average values.

Reference
Deal Price

What's New
Premium

Answer

Calculation of average multiples

Acquirer	Target	EV / LTM Sales	EV / LTM EBITDA	Equity / LTM PE
A	P	1.0	9.0	17.0
B	Q	1.7	12.0	15.0
C	R	2.2	14.5	20.0
D	S	0.9	8.5	14.0
E	T	2.5	11.0	22.0
	Average	1.7x	11.0x	17.6x

Particulars	EBITDA Multiple	Sales Multiple	Earnings Multiple
	EBITDA	Revenue	EPS
Reported Value	125.0	700.0	0.9
Value multiplier	11.0x	1.7x	17.6
Enterprise Value	1,375.0	1,162.0	
Less: Debt	500.0	500.0	
Equity Value	875.0	662.0	
No. of shares	50	50	
Value per share	17.5	13.2	15.8
Premium over Current Price	59.1%	20.4%	44.0%

Q3

Ace Ltd is considering the acquisition of Base Ltd. Ace's management estimates that the acquisition will create a synergy worth ₹ 110 million. The following information is provided.

	Ace Ltd	Base Ltd
Value of the Company (₹ Million)	1,920	525
Number of Shares (Million)	80	35
Value Per Share (₹)	24	15

Soln to Q2 Pg –

CLTM = Last twelve months

N1 Avg EV Multiples

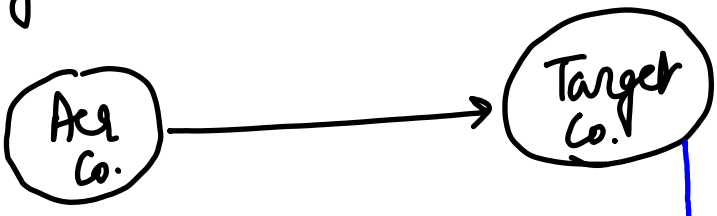
	EV/LTM Sales	EV/LTM EBITDA	Equity/LTM PE
Avg	$\frac{1+1.7+2.2+0.9+2.5}{5}$	$\frac{9+12+14.5+8.5+11}{5}$	$\frac{17+15+20+14+22}{5}$
	= 1.66	= 11	= 17.6

N2 Enterprise Value & Intrinsic Price/Share

	EV/LTM Sales	EV/LTM EBITDA	Equity/LTM PE = Earnings multiple of Eq share
EV	1.66 × 700 = 1162	11 × 125 = 1,375	–
(-) Value of Debt	(500)	(500)	
Value of Equity	662	875	
No. of Eq Shares	50	50	
MPS	13.24	17.5	17.6 × 0.9 = 15.84

Acq Price :	EV/LTM Sales	EV/LTM EBITDA	EV/LTM PE
	13.24	17.5	15.84
Premium : (over CMP)	$\frac{13.24-11}{11}$	$\frac{17.5-11}{11}$	$\frac{15.84-11}{11}$
	= 20.36%	= 59.09%	= 44%

6. Evaluation of Merger from the view pt of Acquirer & Target Company



(Int Price ≠ Mkt Price)

Or

Benefits = Acquirer's Gain

= Value of Synergy − Acq Premium Paid − Cost of Integn

Benefits = Acq Premium

Value Paid to Target Co. − Pre merger Value

- Cash Deal → = Amt to be paid
- Stock Deal → (No of Shares of Target Co × Exch Ratio) × MPS* of Acq Co. post acquisition
- Hybrid Deal → [Cash + Stock]

* **MPS of Acq Co. Post Acq**

$$\text{MV of Combined Firm} = \left[\text{MV of Acq Co. Pre merger} + \text{MV of Target Co. Pre merger} + \text{Value of Synergy} - \text{Cost of Integn.} - \text{Cash Paid to target Co.}\right]$$

No. of shares of Combined firm = No. of shares of Acq Co. + (No. of shares of Target Co × Exch ratio)

- Tata Steel & Chorus Steel Merger
- Tata Motors & Jaguar Land Rover Merger
- Byju + White Hat Jr
- Google + Motorola

The Management of Ace Ltd is evaluating three options for Base Ltd.

Option 1: Cash Offer of ₹ 17 per share

Option 2: Share Exchange ratio of 0.7 shares of Ace against each share of Base Ltd

Option 3: Share Exchange ratio of 0.5 shares of Ace against each share of Base, plus ₹ 5 per share

You are **required** to evaluate the option that will best suit Ace Ltd and the one that will best suit Base Ltd.

Reference

Evaluation of best offer for Acquirer & Target

What's **New**

Answer

Option 1

Being the Cash offer, the shareholders of Base Ltd will get cash compensation.

Consideration paid = Offer Price × Number of shares of Base Ltd

= ₹ 17 × 35 million = ₹ 595 million

Acquisition Premium = (Deal Price – Premerger Price of Target) × Number of shares of Base

Or Consideration Paid – Pre-merger value of the Target

= (17 – 15) × 35 or ₹ (595 – 525) million = ₹ 70 million

Acquirer's Gain = Value of Synergy – Acquisition Premium paid

= 110 – 70 = ₹ 40 million

Option 2

Being stock offer, the shareholders of Base Ltd will get the shares of Ace Ltd. Their compensation would be valued based on the post-merger value of Ace Ltd.

Share Exchange ratio of 0.7 shares of Ace against each share of Base Ltd

Number of shares to be issued = Share Exchange Ratio X Number of Shares of Base Ltd

= 0.7 × 35 million = 24.5 million

Value of Combined Entity = Pre-Merger Value of Acquirer + Pre-Merger Value of Target + Expected synergies from transaction + Cash Paid

= 1,920 + 525 + 110 – 0 = ₹ 2,555 million

Total Number of shares of the Combined Entity

= Pre-merger shares of Acquirer + Number of shares issued as part of transaction

= 80 + 24.5 = 104.5 million

Post-Merger Value per share = Value of Combined Entity / Number of shares of combined entity

= ₹ 2,555 million / 104.5 million = ₹ 24.4 per share

Total Value paid to Target (Base Ltd) = Number of shares issued × Post Merger value per share

= 24.5 million × ₹ 24.4 per share = ₹ 599 million

Acquisition Premium = Value paid to Target – Pre-Merger Value of Target

= ₹ 599 million – ₹ 525 million = ₹ 74 million

Acquirer's Gain = Total Expected Synergy – Acquisition Premium paid to Target

= ₹ 110 million – ₹ 74 million = ₹ 36 million

Option 3

In this option, the Acquirer is paying both Cash and shares of its own company to the shareholders of the Target Company.

Total Cash consideration Paid = Cash offer per share × Number of Shares of Target

= ₹ 5 per share × 35 million shares = ₹ 175 million

Shares issued by Acquirer (Ace) = Share Exchange Ratio × Number of shares of Base

= 0.5 × 35 = 17.5 million shares

Pre-Merger Value of Acquirer	₹1,920.0
Pre-Merger Value of Target	₹525.0
Expected synergies from transaction	₹110.0
Cash Paid	₹175.0
Post-Merger Value of Combined Entity (₹ Mn)	₹2,380.0

Number of shares of combined entity = Pre-merger shares of Ace + Number of shares issued

= 80 + 17.5 = 97.5 million shares

Post-Merger Value per share of combined entity = 2,380 / 97.5 = ₹ 24.4 per share

Value Paid to the Target = Cash paid + Value of Shares paid

= ₹ 175 million + ₹ 24.4 per share × 17.5 million shares

= ₹ 602.2 million

Solution to Q3 Pg –

Evaluation of Merger

(1) **Benefits to the Target Co. = Acq Premium Recd**

1. **Cash deal :** ₹ 17/share

Value to be paid to target Co – Base Hdr = ₹ 595 million
(17 × 35)

(–) Pre merger value of Base Hdr ₹(525)

Acq Prem Recd ₹ 70

2. **Stock deal :** –

Value to be paid to Base Hdr = 599 ₹m

(0.7 × 35 × 24.45)

(–) Pre merger value of Base Hdr = (525)

Acq Prem Recd ₹ 74

Note **MPS Post Acq**

→ MV Post Merger = 1920 + 525 + 110 = 2555
(MV of Acr pre merger + MV of Base Pre merger + Value of Synergy)

→ No. of shares in combined firm : 80 + (35 × 0.7) = 104.5

→ MPS Post Acq = 2555/104.5 = 24.45

3. Hybrid deal => Shares Exch ratio of 0.5 + ₹5/share

	₹m
Value to be paid to Base Ltd	602.2
$5 \times 35 + (0.5 \times 35 \times 24.41)$	
Less: Pre merger MV of Base Ltd	(525)
Acq prem rcd	77.2

MPS after acq

- MV of Combined firm: 1920 + 525 + 110 − (5×35) = 2380
- No. of sh of Combined firm: 80 + 35×0.5 = 97.5

MPS of Combined firm: 2380/97.5 = 24.41

(2) Benefit of Acquiring Co.

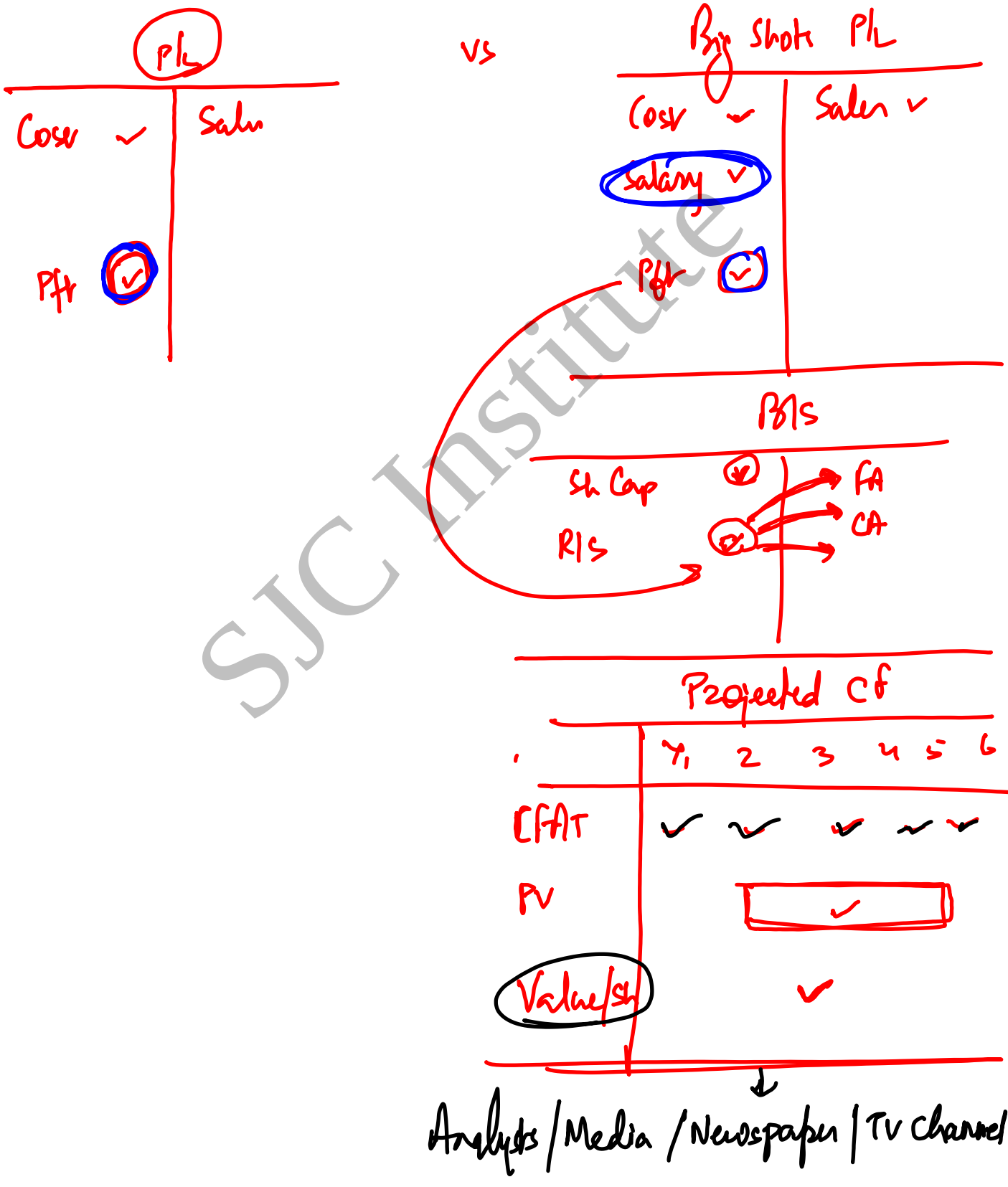
(i) Cash deal :- = Value of Synergy − Acq Prem Paid
= 110 − 70 = ₹40 m

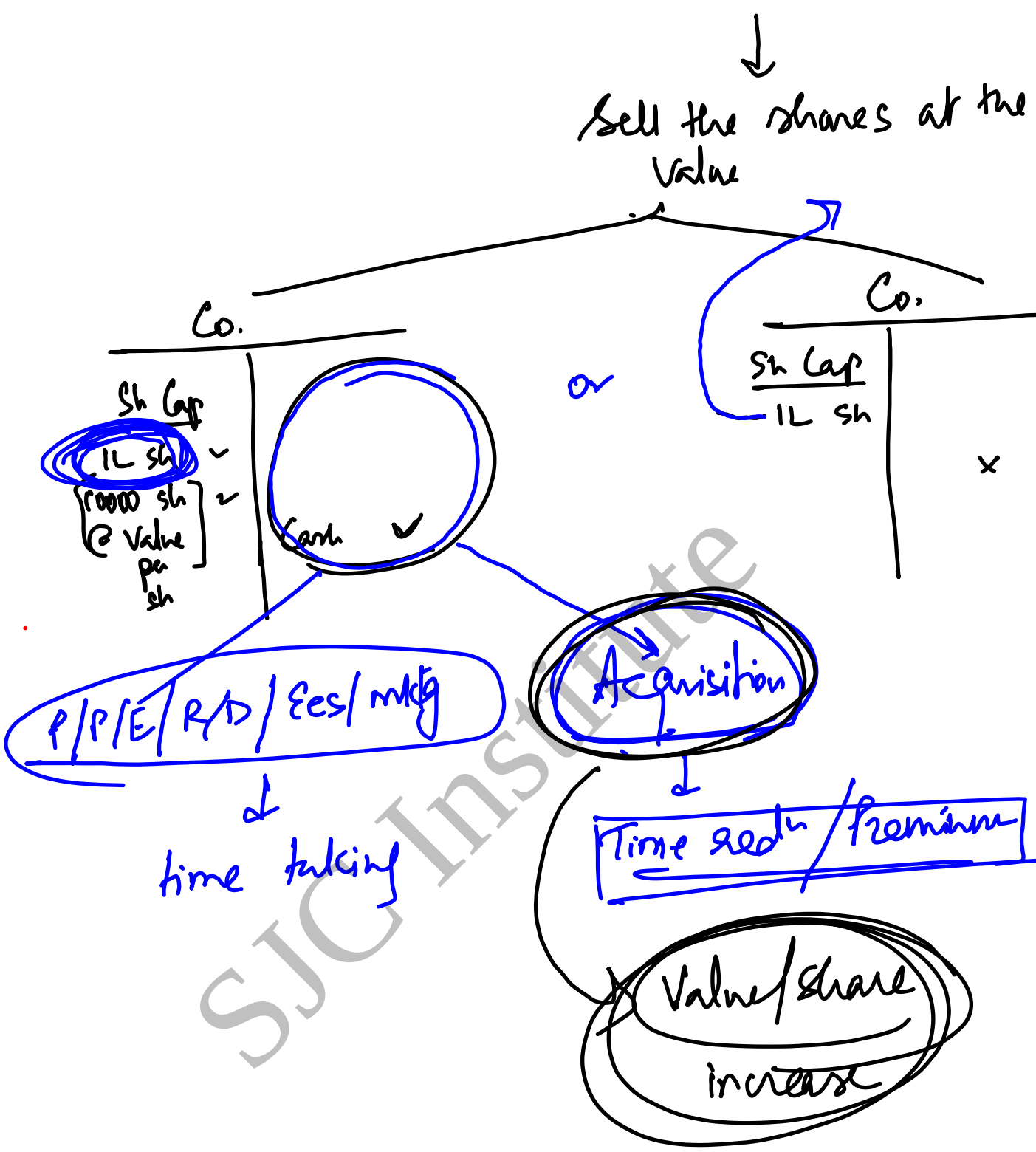
(ii) Stock deal :- = Value of Synergy − Acq prem paid
= 110 − 74 = ₹36 m

(iii) Hybrid deal :- = Value of Synergy − Acq Prem Paid
= 110 − 77.2 = ₹32.8 m

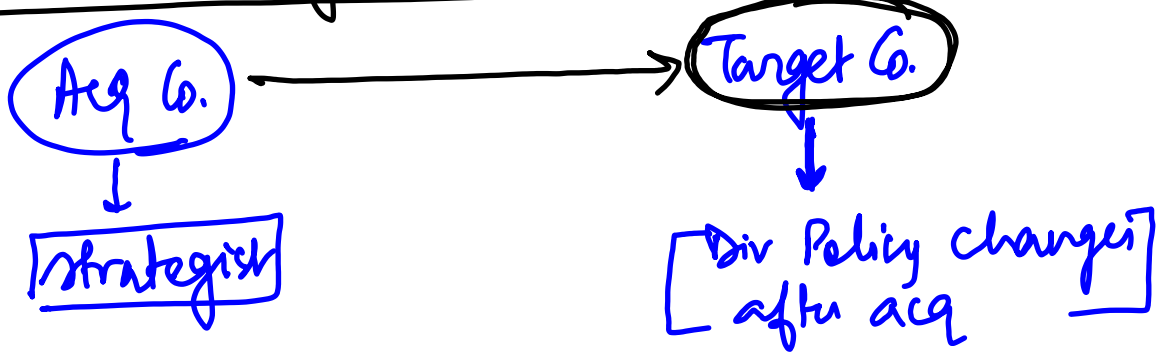
for Target Co. (Base Utd) – Op 3 is best

for Acq Co. (Acc Utd) – Op 1 is best





7. Present Value of Growth Opportunities



↓
sh price inc

Div Policy ⇒ $r < k_e$ ⇒ Payout ratio 100%

$r > k_e$ ⇒ ↓ ↓ 0

No growth Co. ⇒ $r < k_e$ ⇒ Payout ratio should be 100%

⇒ DPS : EPS

$$MPS = \frac{EPS}{k_e}$$

With Growth ⇒ $r > k_e$ ⇒ Payout ratio should be < 100%

⇒ DPS < EPS

⇒ DPS = EPS × Payout Ratio

Preferred

$$MPS = \frac{DPS}{k_e - g} \text{ or } \frac{D_0(1+g)}{k_e - g}$$

g = growth rate = b × r

= retention ratio × return on inv.

PV of Growth Opportunities

= Price with growth − Price without growth

→ PV of Growth Opp negative ⇒ it has issues in its dividend policy ⇒ Takeover Target

→ Acq Co. can increase its value of shares after acquisition just by changing the dividend policy of the target Co.

Acquisition Premium	= Value Paid – Pre-merger value of Target
	= ₹ 602.2 million – ₹ 525 million = ₹ 77.2 million
Acquirer's Gain	= Total Synergy – Acquisition Premium
	= 110 – 77.2 = ₹ 32.8 million

Summary of three options

Option 1 – Cash	70.0	40.0	Acquirer's Preference
Option 2 – Stock	74.0	36.0	
Option 3 - Mix	77.2	32.8	Target's Preference

Q4

H.W - copy of Q1

Anju consultancy Ltd. has been assigned the task of estimating a fair acquisition price for Atul Industries. Anju consultancy decides to use comparable company analysis to determine a fair acquisition price and collects the following significant information regarding three comparable companies:

	Company X	Company Y	Company Z
Price per share (₹)	240	150	300
Earnings per share	14.50	9.57	19.00

Anju consultancy has also collected the following information relating to recent acquisitions of similar companies like Atul Industries:

	Company A	Company B	Company C
Market Price	92.45	357.50	224.00
Deal price	117.00	425.00	290.00

The expected earnings per share of Atul industries is ₹ 15. You are required to **Assess** the expected Deal Price that should be offered for the acquisition.

Reference
Deal Price

What's **New**

Answer

Expected Deal price = ₹ 300

Q5

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.

At **what** price the stock of ABC Ltd. sell? **What** is the present value of growth opportunities? **Why** would such a firm be a takeover target?

Reference

PV of Growth Opportunity

What's **New**

Answer

Dividend growth rate G = ROE × b

Where, b = 1 – payout ratio

G = 10% × 0.60 = 6%

Stock price of ABC Ltd. $= \frac{10 \times 0.4}{0.15 - 0.06} = \frac{4}{0.09} =$ ₹ 44.44

Present value of growth opportunities (PVGO)

= market price per share – No growth value per share

$= ₹\ 44.44 - \left(\frac{10}{0.15}\right)$

= ₹ 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.

Solution to Qs Pg –

Price with Growth :- Current Price of shares

MPS : $\frac{DPS}{ke - g}$

$= \frac{4}{0.15 - 0.06}$

$= 44.44$

DPS = EPS × Payout Ratio

$= 10 \times (1 - 0.6)$

$= 10 \times 0.4$

$= 4$

$g = b \times r$

$= 0.6 \times 0.10 = 0.06$

PV of Growth Opportunities

= Price with Growth − Price without Growth

$= 44.44 - \frac{10}{0.15}$

$= 44.44 - 66.67$

$= (22.23)$

As the PV of Growth Opportunities is negative, the firm is a takeover target.

It is easy for the acquirer to increase its value per share after acquisition of above Co. by just changing the dividend policy.

Q6

Value of target Co. is ₹ 500 Million

Value of the acquiring Co. is ₹ 800 Million.

Present value of cost savings if the two companies are merged together is ₹ 100 million.

Acquiring company expects the cost of integration as ₹ 80 million and the shareholders of Target Co. are expecting a deal premium to be paid of 15 percent over their company's value.

What is the value of Combined entity? **Does** the merger result in a net gain for the combined entity?

Reference

Value of Combined Entity with Synergy, Net Gain for Combined Entity

What's New

Answer

Premium Paid = 500 × 0.15 = 75 million

Synergy = 100 million

Combined Value = Value of Target Co. + Value of Acquiring Co. + Synergy

= 500 + 800 + 100 = ₹ 1,400 million

Net Gain / Loss = Synergy – Premium Paid – Cost of Integration

= 100 – 75 – 80 = Loss of ₹ 55 million

Q7

Acquirer Ltd is proposing to acquire Target Ltd.

Expected Post Merger Combined Profit of Acquirer	₹2,000
Pre-merger Profit of Acquirer	₹1,200
Standalone number of shares of Acquirer	200
New shares to be issued in transaction	50
Tax Rate	25%

Calculate:

1. Combined EPS
2. Accretion / (Dilution) in ₹ and in Percentage

Soln to Q6 Pg –

WN 1 Benefit to Target Co. = Acq Prem Paid

= 500 × 15% = 75 m

∴ Value of Combined Entity

= Value of Acq Co. + Value of Target Co. + Synergy – Cost of Integ

= 800 + 500 + 100 – 80

= 1320 m

Benefit to the Combined Entity

= Value of Synergy – Cost of Integ – Acq Prem Paid

= 100 – 80 – 75

= (55) million

8. EPS Workings

E.g

	Acq	Target	Total
PAT	100	50	150
No. of Sh	10	8	

Exch ratio = 0.5

1: EPS of Combined Co

(a) Combined PAT or EARNINGS : Acq + Target
= 150

(b) Combined Co.'s No. of Eq shares

Stock deal = Pre merger no. of equity shares in Acq Co. + (Pre merger no. of shares of Target Co. × Exchange ratio)

Not applicable for cash deal

(c) EPS : (a)/(b)
= 150/14 = 10.71

= 10 + 8 × 0.5 = 14

2: Accretion / Dilution of EPS in ₹ & in % due to merger

[or Impact on EPS of shareholders]

(inc) (dec)

Acquiring Co : Post merger EPS = ↓ 10.71
(-> Pre merger EPS of Acq Co. = (↓) 10
↓ 0.71
↓
Accretion

Target Co. => Post merger EPS × Exch Ratio = ↓ 10.71 × 0.5
(-> Pre merger EPS of Target Co. = (↓) 6.25
↓ (0.895)

Solution to Q7 Pg No. —

	Acquirer	Target	Total
Profit.	1200		2090
No. of sh	200	x × Exch Ratio : 50	250

part(1) Combined EPS = 2090/250 = ₹8

part(2) Accretion/Dilution in ₹ & in %

Acquiring Co. - Post merger EPS : 8

⇒ Pre merger EPS : (6)

(1200/200)

Accretion in ₹ 2

Accretion in % 2/6 = 33.33%

Target Co's working cannot be done because Pre merger no. of shares not available.

Note If exch ratio is based on Pre merger EPS, there will be no accretion/dilution in EPS

In above eg:- $\text{Exch ratio} = \left(\frac{\text{Target Co. EPS}}{\text{Acq Co. EPS}}\right) = \frac{0.25}{10} = 0.625$

$\therefore$ Combined EPS $= \frac{150}{10 + 8 \times 0.625} = \frac{150}{15} = 10$

Accretion/Dilution	Acq	Target
Post merger EPS	10	$10 \times 0.625 = 6.25$
Pre merger EPS	10	6.25
	×	×

Reference
EPS, Accretion/Dilution

What's **New**

Answer

1. **Calculation of Combined EPS**

Combined Profit	₹2,000
Combined Number of Shares (200 + 50)	₹250
Combined Post Merger EPS (Profit / No. of Shares)	₹8

2. **Calculation of Accretion / Dilution**

Standalone Pre-merger EPS	(1,200 / 200)	₹6.00
Accretion / (Dilution)	[8 – 6]	₹2.00
Accretion Percentage	[2 / 6]	33.3%

Q8

Company X is contemplating the purchase of Company Y, Company X has 3,00,000 shares having a market price of ₹ 30 per share, while Company Y has 2,00,000 shares selling at ₹ 20 per share. The EPS are ₹ 4.00 and ₹ 2.25 for Company X and Y respectively. Managements of both companies are discussing two alternative proposals for exchange of shares as indicated below:

(a) in proportion to the relative earnings per share of two Companies.

(b) 0.5 share of Company X for one share of company Y (0.5: 1).

You are **required**:

(i) to **calculate** the Earnings Per Share (EPS) after merger under two alternatives; and

(ii) to **show** the impact on EPS for the shareholders of two companies under both alternatives.

→ Acc/Dilution

Reference
EPS, Impact on Shareholders

What's **New**

	X	Y
No of sh	3L	2L
MPS	30	20
EPS	4	2.25

Solution to Q8 Pg –

WN1

	Co. X	Co. Y (Target)
No. of shares	3L	2L
MPS	30	20
EPS	4	2.25
PAT (EPS × No of sh)	12L	4.5 L

Part (i) EPS of Combined Co.

	Alt I Exch ratio in EPS = $\frac{2.25}{4}$ = 0.5625	Alt II Exch ratio = 0.5
Combined PAT	(12 + 4.5) = 16.5 L	16.5 L
Combined No. of shares	[3L + (2L × 0.5625)] = 4,12,500	[3L + 2L × 0.5] = 4,00,000
EPS	4	4.125

Part (ii) Impact on shareholders

	Act I	Act II
Co.X		
EPS after Merger	4	4.125
↳ EPS before merger	4	4
Acc / Dilution	x	0.125 Acc
Co.Y		
EPS after Merger	$4 \times 0.5625 = 2.25$	$4.125 \times 0.5 = 2.0625$
↳ EPS before merger	2.25	2.25
Acc / Dilution	x	(0.1875) Dilution

9. MPS workings

1. MPS of Combined Co. = EPS of Combined Co. × P/E Ratio of Acq Co.

2. MV of Combined Co. = MPS of Combined Co.

$$\times \left(\text{No. of Shares of Acq Co. Pre merger} + \text{No. of Shares of Target Co.} \times \text{Exch Ratio} \right)$$

3. Accretion / Dilution of MPS

	Acq	Target
	Post merger MPS	Post merger MPS × Exch Ratio
→	Pre merger MPS	Pre merger MPS
	✓	✓

If exch ratio is in the ratio of pre merger MPS, there will be no acc/dilution

Acc / Dilution

4. Post merger Equity Ownership %

$$\text{Acq Co.} = \frac{\text{No. of shares pre merger}}{\text{No. of shares post merger in acq Co.}}$$

$$\text{Target Co.} = \frac{\text{No. of shares pre merger of Target Co.} \times \text{Exch ratio}}{\text{No. of shares post merger in acq Co.}}$$

(100% − Ownership of Acq Co.) or

5. Free float market Capitalisation

Total shares

Promoters' Holding → Lock in period → Restricted

Minority or Outsiders / Investor → free to buy/sell or unrestricted

Total promoter shares of Acq Co. + (Total promoter sh of Target Co. × Exch Ratio)
/ Total no. of shares post acq^n

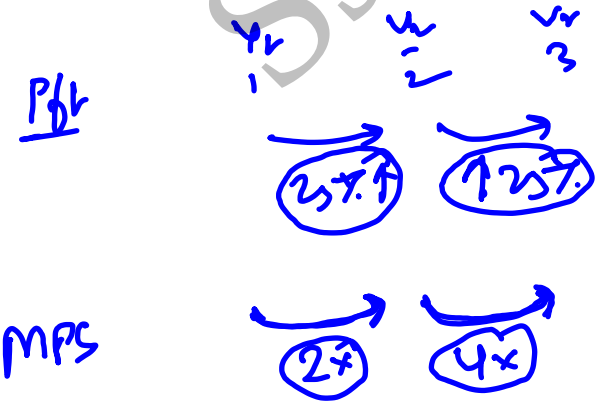
=

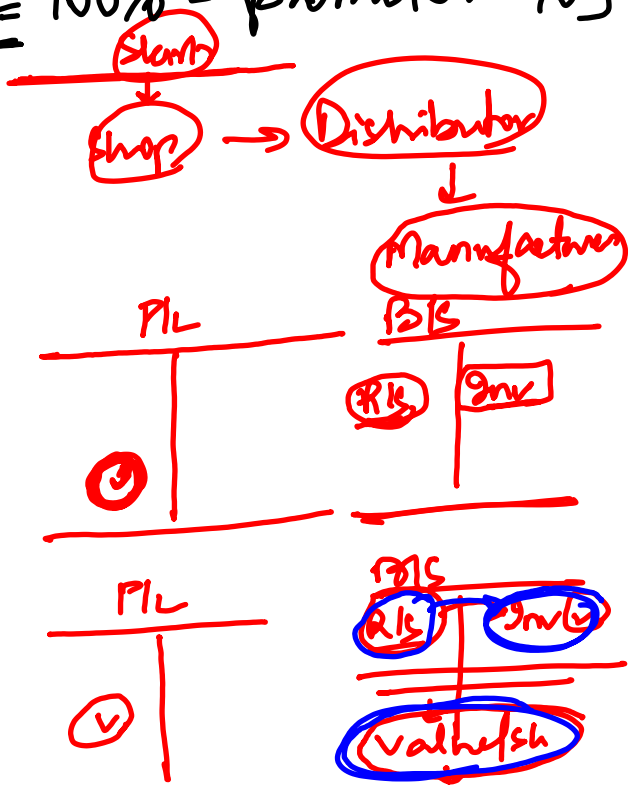
No. of minority shares × MPS post Merger

↓

This is free float Market Capitalisation

[= 100% − promoters %]





6. In absence of info, use exchange ratio as MPS

Answer

Working Notes:

Computation of total earnings after merger

Particulars	Company X	Company Y	Total
Outstanding shares	3,00,000	2,00,000	
EPS (INR)	4	2.25	
Total earnings (INR)	12,00,000	4,50,000	16,50,000

(i) (a) **Calculation of EPS when exchange ratio is in proportion to relative EPS of two companies**

Company X	3,00,000
Company Y (2,00,000 × 2.25/4)	1,12,500
Total number of shares after merger	4,12,500

Company X

EPS before merger = ₹ 4

EPS after merger = ₹ 16,50,000/4,12,500 shares = ₹ 4

(b) **Calculate of EPS when share exchange ratio is 0.5:1**

Total earnings after merger = ₹ 16,50,000

Total number of shares after merger = 3,00,000 + (2,00,000 × 0.5) = 4,00,000 shares EPS after merger = ₹ 16,50,000 / 4,00,000 = ₹ 4.125

(ii) **Impact of merger on EPS for shareholders of Company X and Company Y**

(a) Merger took place on relative EPS of two companies; therefore, both companies maintain their EPS and no impact on EPS of shareholders of both companies.

(b) **Impact on Shareholders of Company X**

Particulars	(INR)
EPS before merger	4.000
EPS after merger	4.125
Increase in EPS	0.125

Impact on shareholders of Company Y

Particulars	(INR)
EPS before merger	2.25
Equivalent EPS after merger (4.125×0.5)	2.0625
Decrease in EPS	0.1875

Q9

The following information is provided in relation to the acquiring Mark limited and the target Maverick Limited

Particulars	Mark Limited	Maverick Limited
Earnings after tax (INR)	200 lacs	40 lacs
Number of shares outstanding	20 lacs	10 lacs
P/E ratio	10	5

Required:

(i) **What** is the swap ratio in terms of current market prices?

(ii) **What** is the EPS of Mark Limited after acquisition?

(iii) **What** is the expected market price per share of Mark Limited after acquisition assuming that P/E ratio of Mark limited remains unchanged?

(iv) **Determine** the market value of the merged firm.

(v) **Calculate** gain/loss for shareholders of the two independent companies after acquisition.

Reference

Swap Ratio, EPS, MPS, Gain/Loss to shareholders

What's **New**

Answer

(i) **Calculation of Swap ratio:**

Particulars	Mark Limited	Maverick Limited
Earnings after tax (INR)	200 lacs	40 lacs
Number of shares outstanding	20 lacs	10 lacs
P/E ratio	10	5
EPS	200/20 =10	= 40/10 = 4
Market Price = (P/E × EPS)	INR 100	INR 20

Therefore, swap ratio in terms of market prices

= MPS of target firm/ MPS of acquiring firm = 20/100 = 0.20

(ii) **We have general formula given by:**

$$EPS_{AB} = \frac{(E_A + E_B)}{\left[S_A + S_B (ER_A)\right]}$$

Solution to Q9 Pg –

Part (i) Swap Ratio in terms of MPS

	Mark	Maverick
EAT (₹ lacs)	200	40
No. of shares	20	10
EPS	10	4
P/E Ratio	10	5
MPS (EPS × P/E)	100	20

$\therefore$ Swap Ratio $= \frac{20}{100} = 0.20$

Part (ii) EPS of Mark Ltd after acquisition

Post merger Earnings = 200 + 40 = 240 ₹ lacs

Total no. of shares = 20 + 10 × 0.2 = 22

$\therefore$ EPS = 240/22 = 10.91

Part (iii) Expected MPS of Mark Ltd after acq

10.91 × 10 = ₹109.10

part(iv) MV of the merged firm

= MPS × Total no. of shares

= 109.10 × (20 + 10 × 0.2) = ₹ 2400 lakhs

part(v) Gain/Loss to shareholders (Original shareholders)

	Manik Ltd	Maverick
MPS		109.10 × 0.2 = 21.82
Post merger MPS	109.10	
Pre merger MPS	100	20
Inc in MPS	9.10	1.82 × 10
MV		
Post merger MV	$2400 \times \frac{20}{22} = 2182$	$2400 \times \frac{2}{22} = 218.2$
Pre merger MV	2000 (20 × 100)	(20 × 10) = 200
Inc in MV	182	18.2

Therefore, EPS of Mark Limited after acquisition $= \frac{200+40}{20+10\times 0.2} = \frac{240}{22} = \text{INR } 10.91$

(iii) **Expected market price per share of Mark Limited with the same P/E of 10 will be**

= EPS × P/E = ₹ 10.91 × 10 = ₹ 109.10

(iv) **Market Value of the merged firm**

= Total number of outstanding shares × market price

= (20 + 2) lacs × ₹ 109.10 = ₹ 2,400.2 lacs

(v) **Gain / Loss accruing to the shareholders of both companies**

Particulars	Total	Mark	Maverick
Number of shares after acquisition	22 lacs	20 lacs	2 lacs
Market price after acquisition	INR 109.10	INR 109.10	INR 109.10
Total Market value after acquisition	INR 2,400.2 lacs	INR 2,182 lacs	INR 218.2 lacs
Existing Market Value	INR 2,200 lacs	INR 2,000 lacs	INR 200 lacs
Gain to shareholders	INR 200.2 lacs	INR 182	INR 18.2 lacs

HW Q10

The following information is provided related to the acquiring firm Sun Ltd. and the target firm Moon Ltd.:

Particulars	Sun Ltd.	Moon Ltd.
Profits after tax	2,000 lakhs	4,000 lakhs
Number of shares outstanding	200 lakhs	1,000 lakhs
P/E ratio (Times)	10	5

Required:

(i) **What** is the swap ratio based on current market price?

(ii) **What** is the EPS of Sun Ltd. after acquisition?

(iii) **What** is the expected market price per share of Sun Ltd. after acquisition, assuming P/E ratio of Sun Ltd. adversely affected by 10%?

(iv) **Determine** the market value of the merged firm.

(v) **Calculate** gain/loss for shareholders of the two independent companies after acquisition.

Reference

Swap Ratio, EPS, MPS, MV, Gain/Loss to Shareholders

What's **New**

Answer

EPS before acquisition

Sun Ltd. = ₹ 2,000 lakhs / 200 lakh = ₹ 10

Moon Ltd. = ₹ 4,000 lakhs / 1,000 lakh = ₹ 4

Market price of shares before acquisition

Sun Ltd. = ₹ 10 × 10 = ₹ 100

Moon Ltd. = ₹ 4 × 5 = ₹ 20

(i) **Swap ratio based on current market price**

$\frac{\text{INR } 20}{\text{INR } 100}$ = 0.2 i. e., 1 share of Sun Ltd. for 5 shares of Moon Ltd.

Number of shares to be issued = 1,000 lakhs × 0.20 lakh = 200 lakhs

(ii) **EPS after acquisitions**

$\frac{2000 \text{ lakhs} + 4000 \text{ lakhs}}{200 \text{ lakhs} + 200 \text{ lakhs}}$ = ₹ 15

(iii) **Expected market price per shares of Sun Ltd. after an acquisition assuming P/E ratio of Sun Ltd. is adversely affected by 10%.**

EPS of Sun Ltd. = ₹ 15

P/E of Sun Ltd. = 10 – 10% of 10 = 9 times

Market price per share of Sun Ltd. = EPS × P/E ratio

= 15 × 9

= ₹ 135

(iv) **Market value of merged firm**

= ₹ 135 × 400 lakhs shares = ₹ 54,000 lakhs

(v) **Gain from the Merger**

Post-merger market value of merged firm = ₹ 54,000 lakhs

Less: Pre merger market value

Sun Ltd. 200 lakhs × ₹ 100 = 20,000 crores

Moon Ltd. 1,000 lakhs × ₹ 20 = 20,000 crores

Total = ₹ 40,000 lakhs

Gain from merger = (54,000 – 40,000) = ₹ 14,000 lakhs

Gain to shareholders of Sun Ltd. and Moon Ltd.

(INR in Lakhs)

Particulars	Sun Ltd.	Moon Ltd.
Post-merger value (INR 135 × 200)	27,000	
(INR 135 × 200)		27,000
Less: Pre merger value	20,000	20,000
Gain to shareholders	7,000	7,000

Q 11

The following information is provided related to the acquiring Firm Mark Limited and the target Firm Mask Limited:

Particulars	Firm Mark Limited	Firm Mask Limited
Earnings after tax (INR)	2,000 lakhs	400 lakhs
Number of Shares Outstanding	200 lakhs	100 lakhs
P/E ratio (times)	10	5

Required:

(i) **What** is the Swap Ratio based on current market prices?

(ii) **What** is the EPS of Mark Limited after acquisition?

(iii) **What** is the expected market price per share of Mark Limited after acquisition, assuming P/E ratio of Mark Limited remains unchanged?

(iv) **Determine** the market value of the merged firm.

(v) **Calculate** gain/loss for shareholders of the two independent companies after acquisition.

Reference

Swap Ratio, EPS, MPS, MV, Gain/Loss to Shareholders

What's **New**

Answer

Particulars	Mark Ltd.	Mask Ltd.
EPS	2,000 Lakhs/ 200 Lakhs = 10	400 Lakhs/ 100 Lakhs = 4
Market price	10 × 10 = 100	4 × 5 = 20

(i) **The Swap ratio based current market price is**

20 /100 = 0.2 or 1 share of Mark Ltd. For 5 shares of Mask Ltd.

No. of shares to be issued = 100 Lakhs × 0.2 = 20 Lakhs

(ii) **EPS after merger** = $\frac{2{,}000 \text{ lakhs} + 400 \text{ lakhs}}{200 \text{ lakhs} + 20 \text{ lakhs}} = 10.91$

(iii) **Expected market price after merger assuming P/E 10 times.**

= 10.91 × 10 = 109.10

(iv) **Market value of merged firm**

= 109.10 market price × 220 Lakhs shares = 240.02 crores

(v) **Gain from the merger**

Post-merger market value of the merged firm 240.02 crores

Less: Pre-merger market value

Mark Ltd. 200 Lakhs × ₹100 = 200 crores

Mask Ltd. 100 Lakhs × ₹20 = 20 crores 220.00 crores

Gain from the merger 20.02 crores

Appropriation of gains from the merger among shareholders:

Q12

The following information is available to you in relation to the acquisition of Dean Limited and the target Dale Limited.

Particulars	Dean Limited	Dale Limited
Earnings after tax (INR)	284 lacs	30 lacs
Number of shares outstanding	30 lacs	10 lacs
P/E ratio	10	5

Analyse the above information to **determine** the following:

(i) the swap ratio in terms of current market prices.

(ii) the EPS of Dean Limited after acquisition.

(iii) the expected market price per share of Dean Limited after acquisition assuming that P/E ratio of Dean Limited remains unchanged.

(iv) the market value of the merged firm.

(v) the gain/loss for shareholders of the two independent companies after acquisition.

Reference

Swap Ratio, EPS, MPS, MV, Gain/Loss to shareholder

What's New

Answer

Particulars	Dean Limited	Dale Limited
Earnings after tax	284 lakhs	30 Lakhs
Number of shares outstanding	30 Lakhs	10 Lakhs
P/E ratio	10	5
EPS	INR 9.47	INR 3
Market Price = (PE × EPS)	INR 94.7	INR 15

Particulars	
(i) Swap Ratio = $\frac{\text{MPS of target firm}}{\text{MPS of acquiring firm}}$	0.16
(ii) EPS of Dean Limited after acquisition $\frac{E_A + E_B}{\left[S_A + S_B\left(ER_A\right)\right]} = \frac{284 + 30}{30 + 10 \times 0.16}$	INR 9.94
(iii) Expected Market Price per share of Dean Limited with the same P/E ratio of 10 will be [EPS × P/E] [9.94 × 10]	INR 99.4
(iv) Market value of the merged firm Total number of outstanding shares × market price (32 × 99.4)	INR 3,140 Lakhs

(v) Gain / Loss accruing to shareholders of both companies

Particulars	Dean Limited	Dale Limited	Total
Number of shares after acquisition	30 Lakhs	2 Lakhs	32 Lakhs
Market Price after acquisition	INR 99	INR 99	INR 99
Total Market Value after acquisition	INR 2,982 Lakhs	INR 158 Lakhs	INR 3140 Lakhs
Existing Market Value	INR 2840 Lakhs	INR 150 Lakhs	INR 2990 Lakhs
Gain To the shareholders	INR 142 Lakhs	INR 8 Lakhs	INR 150 Lakhs

Q13

Highland Company is considering the acquisition of Lowland Company in a stock- for- stock transaction in which Lowland Company would receive ₹ 90 for each share of its common stock. Highland company does not expect any change in its price/ earnings ratio multiple after the merger and chooses to value Lowland company conservatively by assuming no earnings growth due to synergy.

Calculate:

(i) The purchase price premium

(ii) The exchange ratio

(iii) The number of new shares issued by Highland company.

(iv) Post-merger EPS of the combined firms

(v) Pre-merger EPS of the Highland company

(vi) Pre-merger P/E ratio

(vii) Post-merger share price

(viii) Post-merger equity ownership distribution.

The following additional information is available

Particulars	Highland	Lowland
Earnings	INR 2,50,000	INR 72,500
Number of Shares	1,10,000	20,000
Market Price per share	INR 50	INR 60

Reference

Purchase Price Premium, Exchange Ratio, No. of new shares to be issued, EPS, MPS, Ownership Distribution

What's **New**

Answer

(i) **Purchase price premium**

= Offer price for Lowland company stock / Lowland company Market price per share

= 90 / 60 = 1.5

(ii) **Exchange ratio**

= Price per share offered for Lowland Company / Market Price per share for Highland company

= 90 / 50 = 1.8

Highland company issues 1.8 shares of stock for each of Lowland Company's stock.

(iii) **New shares issued by Highland company**

= shares of Lowland Company × Exchange ratio

= 20,000 × 1.8 = 36,000.

(iv) **Post-merger EPS of the combined companies**

= Combined earning / Total number of shares.

Combined earnings = (2,50,000 + 72,500) = ₹ 3,22,500

Total shares outstanding of the new entity = 1,10,000 + 36,000 = 1,46,000

Post-merger EPS of the combined companies = ₹ 3,22,500 ÷ 1,46,000 = ₹ 2.21

(v) **Pre-merger EPS of the Highland company**

= earnings / Number of shares = 2,50,000 / 1,10,000 = ₹ 2.27

(vi) **Pre-merger P/E**

= Pre-merger market price per share / Pre-merger earnings per share

= 50 / 2.27 = 22.00

(vii) **Post-merger share price = Post-merger EPS × Pre-merger P/E**

= 2.21 × 22.00 = ₹ 48.60 (as compared to ₹ 50 Pre-merger)

(viii) **Post-merger Equity Ownership Distribution**

Lowland Company = Number of new shares / Total number of shares

= 36,000/ 1,46,000 = 0.2466 or 24.66%

Highland company = 100 – 24.66 = 75.34%

Comment – The acquisition results in a ₹ 1.40 reduction in the market price of Highland company due to a 0.064 decline in the EPS of the combined companies. Whether the acquisition is a poor decision depends upon what happens to the earnings would have in the absence of the acquisition, the acquisition may contribute to the market value of Highland company.

Q14

Raghav Ltd is intending to acquire Sourav Ltd. (by merger) and the following information are available in respect of both the companies.

Particulars	Raghav Ltd.	Sourav Ltd.
Total current Earnings	INR 2,50,000	INR 90,000
No. of Outstanding Shares	50,000	30,000
Market price per share	INR 21	INR 14

EPS 5 3

P/E 4.2 4.67

(i) **What** is the present EPS of both the companies?

(ii) If the proposed merger takes place **what** would be the new earnings per share for Raghav Ltd. (assuming the merger takes place by exchange of equity shares and the exchange ratio is based on the current market price)?

(iii) **What** should be the exchange ratio if Sourav Ltd. wants to ensure the same earnings to members as before the merger took place?

Reference

EPS, Exchange Ratio

What's New

Answer

(i) EPS = total earnings/ No. of equity shares

EPSRLTD = 2,50,000/50,000 = ₹ 5

EPSSLTD = 90,000/30,000 = ₹ 3

(ii) No. of shares Sourav Ltd. shareholders will get in Raghav Ltd. based on market prices of shares is as follows:

Exchange Ratio = 14/21 = 2/ 3 i.e. for every 3 shares of Sourav Ltd. 2 shares of Raghav Ltd.

Total No. of shares of R Ltd. Issued = $\frac{14}{21} \times 30{,}000 = 20{,}000$ shares

Total number of shares of Raghav Ltd. After merger = 50,000 + 20,000 = 70,000

Total earning of Raghav Ltd after merger = 2,50,000 + 90,000 = 3,40,000

[Remember no synergy given]

The new EPS of Raghav Ltd. After merger = $\frac{\text{INR } 3{,}40{,}000}{70{,}000} = ₹ 4.86$

(iii) **Calculation of exchange ratio to ensure Sourav Ltd to earn the same before the merger took place:** Both acquiring and acquired firm can maintain their EPS only if the merger takes place based on respective EPS.

Exchange Ratio based on EPS = 3/5 = 0.6

Total shares of Raghav Ltd. receivable by Sourav Ltd. shareholders = 0.6 × 30,000 = 18,000

Total No. of shares of Raghav LTD after merger = 50,000 + 18,000 = 68,000

EPS after merger = Total Earnings / Total no. of shares = [INR 2,50,000 + ₹ 90,000] / 68,000 = ₹ 5.00

Total earnings after merger of Sourav Ltd. = ₹ 5 × 18,000 = ₹ 90,000

Q15

Radha Limited is intending to acquire Krishna Limited by merger and the following information is available in respect of both the companies:

Particulars	Radha Limited	Krishna Limited
No. of equity shares	6,00,000	2,00,000
Profit after tax	INR 20,00,000	INR 10,00,000
Market Price Per Share	INR 20	INR 15

EPS $\frac{20}{6} = 3.33$ $\frac{10}{2} = 5$

Compute the following:

(i) EPS of both the companies

(ii) Exchange Ratio (assume EPS)

Exch ratio = 5/3.33 = 1.5

Reference

EPS, Exchange Ratio

What's **New**

Answer

(i) **EPS of both the companies :**

EPS of Radha Limited = INR 3.33

EPS of Krishna Limited = INR 5.00

(ii) **Exchange Ratio**

Exchange ratio based on EPS = 1.5

Q16

Anurag Ltd. is considering the acquisition of Binay Ltd. with stock. Relevant financial information is given below.

Particulars	Anurag Ltd	Binay Ltd
Present Earnings	INR 7.5 lakhs	INR 2.5 lakhs
Equity (No. of shares)	4.0 lakhs	2.0 lakhs
EPS	INR 1.875	INR 1.25
P/E ratio	10	5

MPS 18.75 6.25

Answer the following question:

(i) **What** is the market price of each company?

(ii) **What** is the market capitalization of each company?

(iii) If the P/E of Anurag Ltd. changes to 7.5, **what** is the market price of Anurag Ltd?

(iv) **Does** market value of Anurag Ltd. change?

(v) **What** would be the exchange ratio based on Market Price? (Take revised Price of Anurag Ltd).

Reference

MPS, Market Capitalisation, Change in MV, Exchange Ratio

What's **New**

Answer

(i) P/E = Market Price/ EPS. Therefore, we have, Market price = P/E × EPS Anurag Ltd.'s Market Price = 10 × 1.875 = ₹ 18.75

Binay Ltd.'s Market Price = 5 ×1.25 = ₹ 6.25

(ii) Market Capitalization (same as market value or in short referred as market Cap)

= Number of outstanding shares × market Price

Anurag Ltd.'s Market cap = 4.0 lakhs × ₹ 18.75 = ₹ 75 Lakhs Binay Ltd.'s market cap = 2.0 lakhs × ₹6.25 = ₹ 12.5 Lakhs

(iii) If the P/E of Anurag ltd. changes to 7.5, then the market price is given by

= 7.5 × ₹ 1.875 = ₹ 14.0625

(iv) Yes. The market value decreases. i.e., = Anurag Ltd.'s market Value = 4.0 lakhs × ₹ 14.0625 = ₹ 56.25 Lakhs.

(v) General Formula for exchange ratio = $\frac{\text{MPS of Target Firm}}{\text{MPS of Acquiring Firm}}$ = 6.25/14.0625 = 0.44

Q17

Abhishek Ltd. is considering takeover of Bikash Ltd. and Chitra Ltd. The financial data for the three companies are as follows:

Particulars	Abhishek Ltd.	Bikash Ltd.	Chitra Ltd.
Equity Shares Capital of ₹ 10 each (INR crores)	450	180	90
Earnings (INR crores)	90	18	18
Market price of each share (INR)	60	37	46

Calculate:

(i) Price earnings ratios

(ii) Earnings per share of Abhishek Ltd. after the acquisition of Bikash Ltd. and Chitra Ltd. separately. **Will** you recommend the merger of either/both of the companies? **Justify** your answer.

Reference

P/E Ratio, EPS, Recommendation

What's **New**

Answer

(i) **Calculation of Price Earnings ratios**

Particulars	Abhishek Ltd.	Bikash Ltd.	Chitra Ltd.
Earnings (INR crores)	90	18	18
No. of shares (crores)	45	18	9
EPS (INR)	2	1	2
Market price of each share (INR)	60	37	46
PE Ratio (MPS ÷ EPS)	30	37	23

(ii) **Calculation of EPS of A Ltd. after acquisition of Bikash Ltd. and Chitra Ltd.**

Particulars	Abhishek Ltd.	Bikash Ltd.	Chitra Ltd.
Exchange ratio in A Ltd			
Target's Price per share / Acquirer's price per share)	--	0.617	0.767
No. of A Ltd.'s share to be given (crores)	--	18 × 0.617	9 × 0.767
(Target's Number of shares × Share exchange Ratio)		= 11.10	= 6.90
Combined number of shares (crores)	--	56.1	51.9

Solution to Q17 Pg-

Part (i) P/E Ratio

	Abhishek Ltd	Bikram Ltd	Chitra Ltd
Ese (₹10 each)	450	180 (18)	90 (9)
No of Eq shares	45		
EPS (Earnings / No of Eq Sh)	90/45	18/18	18/9
	= 2	= 1	= 2
MPS	60	37	46
P/E Ratio	60/2 = 30	37/1 = 37	46/2 = 23

Part (ii) EPS (Earning each ratio in MPS)

Abhishek Ltd acquires Bikram Ltd

Total Earnings = 90 + 18 = 108

No of Eq shares = 45 + 18 × 37/60 = 56.1

= 1.93

EPS = 108/56.1

Abhishek Ltd acquires Chitra Ltd.

Total Earnings = 90 + 18 = 108

No of Eq Shares = $45 + 9 \times \frac{46}{60} = 51.9$

EPS = $108 / 51.9 = 2.08$

Abhishek Ltd acquires both Bikash & Chitra

Total Earnings = 90 + 18 + 18 = 126

No of eq shares = $45 + 18 \times \frac{87}{60} + 9 \times \frac{46}{60}$

$= 63$

EPS = $\frac{126}{63} = 2$

∴ EPS is higher when Abhishek Ltd acquires only Chitra Ltd, it is suggested to opt for this alternative only.

(Acquirer's Pre acquisition Number of shares + shares issued to target's shareholders)			
Combined Earnings after acquisition (INR crores)	--	108	108
(Acquirer's Earnings + Target's Earnings)			
EPS after acquisition (INR)	--	1.93	2.08
(Combined Earnings / Combined Number of shares)			
Conclusion – comparison with pre-acquisition EPS		Lower	Higher

Analysis: After merger of Chitra Ltd. with Abhishek Ltd.'s. EPS is higher than Abhishek Ltd. (INR 2.08). Hence merger with only Chitra Ltd. is suggested to increase the value to the shareholders of Abhishek Ltd.

Q18

XYZ Ltd. is considering merger with ABC Ltd. XYZ Ltd.'s shares are currently traded at ₹ 25. It has 2,00,000 shares outstanding and its profits after taxes (PAT) amount to ₹ 4,00,000. ABC Ltd. has 1,00,000 shares outstanding. Its current market price is ₹ 12.50 and its PAT are ₹ 1,00,000. The merger will be affected by means of a stock swap (exchange). ABC Ltd. has agreed to a plan under which XYZ Ltd. will offer the current market value of ABC Ltd.'s shares:

(i) **What** is the pre-merger earnings per share (EPS) and P/E ratios of both the companies?

(ii) If ABC Ltd.'s P/E ratio is 8, **what** is its current market price? **What** is the exchange ratio? **What** will XYZ Ltd.'s post-merger EPS be?

(iii) **What** must the exchange ratio be for XYZ Ltd.'s that pre and post-merger EPS to be the same?

Reference

Pre Merger EPS, Post Merger EPS, Exchange Ratio

What's **New**

Solution to Q18 Pg —

	XYZ	ABC
MPS	25	12.50
No. of eq sh	2L	1L
PAT	4L	1L

(i) EPS $\left(\frac{PAT}{No\ of\ eq\ sh}\right)$ $\frac{4L}{2L} = 2$ $\frac{1L}{1L} = 1$

P/E $\left(MPS/EPS\right)$ $\frac{25}{2} = 12.50$ $\frac{12.50}{1} = 12.50$

(ii) P/E = 8, current MPS of ABC Ltd.

1 $MPS = P/E \times EPS = 8 \times 1 = 8$

Exch ratio (based on MPS)

$= \frac{8}{25} = 0.32$

- Post Merger EPS $\Rightarrow \frac{4L + 1L}{2L + 1L \times 0.32} = \frac{5L}{2.32}$

$= 2.16$

(iii) Exch ratio such that Pre & post merger EPS is same $= \frac{\text{Target Co}}{\text{Acq Co}} = \frac{1}{2} = 0.5$

Answer

(i) **Pre-merger EPS and P/E ratios of XYZ Ltd. and ABC Ltd.**

Particulars	XYZ Ltd.	ABC Ltd.
Profit and taxes	INR 4,00,000	INR 1,00,000
Number of shares outstanding	2,00,000	1,00,000
EPS (Earning after tax/No. of shares)	INR 2	INR 1
Market price per share	INR 25.00	INR 12.50
P/E Ratio (times) (MPS÷EPS)	12.50	12.50

(ii)

Particulars	XYZ	ABC
If ABC PE is 8. Market Price		8.00
Exchange Ratio = Transferor Price / Transferee Price		0.32
Number of shares to be issued		
(Transferor's old Number of shares × Exchange Ratio)		32,000
Total New Shares		
(Transferee's Old number of shares + New shares issued)	2,32,000	
Total Earnings	5,00,000	
New EPS	2.16	

(iii) **Desired exchange ratio**

Total number of shares in post-merged company

$$= \frac{\text{Post-merged earnings}}{\text{Pre-merger EPS of XYZ Ltd.}} = \frac{5,00,000}{2} = 2,50,000$$

Number of shares required to be issued = 2,50,000 – 200,000 = 50,000

Therefore, the exchange ratio is = 50,000/ 1,00,000 = 0.50

Q19

Reliable Industries Ltd. (RIL) is considering a takeover of Sunflower Industries Ltd. (SIL). The particulars of 2 companies are given below:

Particulars	RIL	SIL
Earnings After Tax (INR)	20,00,000	10,00,000
Equity shares (No.)	10,00,000	10,00,000
EPS (INR)	2	1
P/E ratio (times)	10	5

EPS 20 5

Required:

(i) **What** is the market value of each company before merger?

(ii) Assuming that the management of RIL estimates that the shareholders of SIL will accept an offer of one share of RIL for four shares of SIL. If there are no synergic effects, **what** is the market value of the post- merger RIL? **What** is the new price for share? **Are** the shareholders of RIL better or worse off than they were before the merger?

(iii) Due to synergic effects, the management of RIL estimates that the earnings will increase by 20%.

What is the new post-merger EPS and price per share? Will the shareholders be better off or worse off than before the merger?

Reference

MV, MPS, EPS, Impact on Shareholder

What's New

Answer

(i) **Market value of companies before merger**

Particulars	RIL	SIL
EPS (INR)	2	1
P/E ratio	10	5
Market price per share (INR) (EPS × P/E ratio)	20	5
Equity shares (No.)	10,00,000	10,00,000
Total market value (MPS × No. of Eq. Shared)	2,00,00,000	50,00,000

(ii) **Post-merger effect on RIL**

Particulars	INR
Post-Merger earnings	30,00,000
Equity shares $\left(10,00,000+10,00,000\times\frac{1}{4}\right)$	12,50,000
As exchange ratio is 1: 4	
EPS:	2.4
P/E ratio	10.00
Market price per share (EPS × P/E ratio) i.e., 10 × 2.4	24
Total Market Value (MPS × No. of Eq. Shares) i.e., (12,50,000 × 24)	3,00,00,000

Solution to Q19 Pg –

Part (i) MV of each company before merger

	RIL	SIL
EAT	20L	10L
No. of Eq shares	10L	10L
EPS	2	1
P/E Ratio	10	5
MPS	20	5
MV (MPS × No. of Eq Sh)	20×10 = 200	5×10 = 50

Part (ii) Exchange Ratio 1:4

MV Post Merger :

EPS Post Merger = $\frac{20L + 10L}{10L + 10 \times 1/4} = \frac{30}{12.5} = 2.40$

P/E ratio (assume same as pre merger) = 10

∴ MPS post merger = 2.40 × 10 = ₹ 24

MV = 24 × (10 + 10 × 1/4) = ₹300 L

MPS = ₹24

Impact on MV :

	RIL	SIL
Post-Merger MV	$300 \times \frac{10}{12.5}$	$300 \times \frac{2.5}{12.5}$
	= 240	= 60
Pre Merger MV	= 200	= 50
Increase in MV	= 40	= 10

(part iii) Synergy Effects will increase earnings by 20%

New Post merger EPS = $\frac{(20 L + 10 L) \times 120\%}{10 L + 10 L \times 1/4}$

= 2.88

MPS post merger = 2.88 × 10 = 28.80

(EPS × P/E) Total MV = 28.8 × 12.5 = 360

Impact on MV	RIL	SIL
MV Post Merger	$360 \times \frac{10}{12.5}$	$360 \times \frac{2.5}{12.5}$

	288	72
MV Pre merger	200	50
Increase in MV	88	22

∴ Shareholders will be better off than before the merger.

Special Notes

1. NPV of merger is zero

MPS post merger will be same as that of the merger in acquiring company.

2. Value of synergy due to acquisition - can also be computed as Diff. in MV post merger of Target company.

Gains from Merger

Particulars	INR
Post-Merger Market value of the firm	3,00,00,000
Less: Pre-Merger market value	
RIL 2,00,00,000	
SIL 50,00,000	INR 2,50,00,000
	INR 50,00,000

Apportionment of Gains between shareholders

Particulars	RIL	SIL
Post-merger market value		
10,00,000 × 24	2,40,00,000	
2,50,000 × 24		60,00,000
Less : Pre merged market value	2,00,00,000	50,00,000
	40,00,000	10,00,000

Thus, the shareholders of both the Co. have gained from merger

(iii) **Post-Merger Earnings**

Increase in earnings by 20%

New earnings: ₹ 30,00,000 × 120% = 36,00,000

No. of equity share = 12,50,000

EPS = ₹ 36,00,000 ÷ 12,50,000 = ₹ 2.88

P/E ratio = 10

Market price per share = ₹ 2.88 × 10 = ₹ 28.80

Hence, shareholders will be better off than before the merger situation.

Q20

The Shareholders of Aditya Co. have voted in favour of a buyout offer from Subhajit Co. Information about each firm is given here below. Moreover, Aditya Co.'s shareholders will receive one share of Subhajit Co. Stock for every three shares they hold in Aditya Co.

Particulars	Subhajit Co.	Aditya Co.
Present earnings	6.75 lakhs	3.00 lakhs
EPS	3.97	5.00
Number of Share	1.70 lakhs	0.60 lakhs
P/E ratio	20	5

Solution to Q20 Pg –

Part (i)

	Subhajit	Aditya
EPS	3.97	5
P/E Ratio	20	5
MPS	79.4	25

EPS after the merger – Exch ratio is 1:3

Post merger Earnings = 6.75 + 3 = 9.75

Post merger no of eq sh = 1.70 + 0.6x1/3 = 1.9

$$EPS = \frac{9.75}{1.9} = 5.13$$

P/E Ratio if NPV of merger is zero

It means 'MPS will remain unchanged after acquisition (for Subhajit Co, MV will not change)

MPS post merger = MPS pre merger = 79.4

∴ P/E Ratio = 79.4/5.13 = 15.48

Part (ii) Value of Synergy of 2 firms

= Extra MV to Aditya Co.

MV post merger: $79.4 \times (0.6 \times \frac{1}{3})$ = 15.88 (taken)

MV pre merger: (25×0.6) = 15

Synergy = Inc = 0.88

(∵ Subhajit Co. - NPV is zero)

Proof: Pre merger MV of Subhajit = 1.7×79.4 = 134.98

Post merger MV of Subhajit

Post merger EPS = 5.13

PIE Ratio = 15.48

MPS = $5.13 \times 15.48 = 79.41$

MV: 79.41×1.7 = 135 proved

MV same means NPV is zero

(i) **What** will the EPS of Subhajit. Co. be after the merger? **What** will the PE ratio be if the NPV of the acquisition is zero?

(ii) **What** must Subhajit Co. feel is the value of the synergy between these two firms?

Explain how your answer can be reconciled with the decision to go ahead with the takeover.

Reference

EPS, P/E, Synergy Value

What's **New**

Answer

(i) The EPS of the combined company will be the sum of the earnings of both companies divided by the shares in the combined company. Since the stock offer is one share of the acquiring firm for three shares of the target firm, new shares in the acquiring firm will increase by one- third [Exchange ratio = 1/3]. So, the new EPS will be:

EPS = (INR 300,000 + 675,000)/ [170,000 + (1/3) (60,000)] = ₹ 5.132.

The market price of Subhajit Co. will remain unchanged if it is a zero NPV acquisition. Using the PE ratio, we find the current market price of Subhajit Co. stock, which is = P/E × EPS = 20 × (6.75 lakhs/ 1.70 lakhs) = ₹ 79.41

If the acquisition has a zero NPV, the stock price should remain unchanged. Therefore, the new PE will be:

P/E = ₹ 79.41 / ₹ 5.132 = 15.48

(ii) If the NPV of the acquisition is zero, it would mean that Subhajit Co. would pay just the market value of Aditya Co. i.e.

Number of shares × market price of Aditya Co. i.e., = 60,000 × 25 [MPS = P/E × EPS = 5 × 5 = 25]. The market value received by Subhajit co. = ₹ 15,00,000.

The cost of the acquisition is the number of shares offered times the share price, so the cost is: Cost = (1/3) (60,000) (INR 79.4118) = ₹ 15,88,236.

The difference is synergy i.e. (15,00,000 - 15,88,236) = ₹ 88,236.

Q21

The following information is provided related to the acquiring Firm Mark Limited and the target Firm Mask Limited:

Particulars	Firm Mark Limited	Firm Mask Limited
Earnings after tax (INR)	2,000 lakhs	400 lakhs
Number of Shares Outstanding	200 lakhs	100 lakhs
P/E ratio (times)	10	5

Required:

(i) **What** is the Swap Ratio based on current market prices?

(ii) **What** is the EPS of Mark Limited after acquisition?

(iii) **What** is the expected market price per share of Mark Limited after acquisition, assuming P/E ratio of Mark Limited remains unchanged?

(iv) **Determine** the market value of the merged firm.

(v) **Calculate** gain/loss for shareholders of the two independent companies after acquisition.

Reference

Swap Ratio, EPS, MPS, MV, Gain/Loss to Shareholders

What's **New**

Answer

Particulars	Mark Ltd.	Mask Ltd.
EPS	2,000 Lakhs/ 200 Lakhs = 10	400 Lakhs/ 100 Lakhs = 4
Market price	10 × 10 = 100	4 × 5 = 20

(i) **The Swap ratio based current market price is**

20 /100 = 0.2 or 1 share of Mark Ltd. For 5 shares of Mask Ltd.

No. of shares to be issued = 100 Lakhs × 0.2 = 20 Lakhs

(ii) **EPS after merger** $= \frac{2{,}000 \text{ lakhs} + 4{,}000 \text{ lakhs}}{200 \text{ lakhs} + 20 \text{ lakhs}} = 10.91$

(iii) **Expected market price after merger assuming P/E 10 times.**

= 10.91 × 10 = 109.10

(iv) **Market value of merged firm**

= 109.10 market price × 220 Lakhs shares = 240.02 crores

(v) **Gain from the merger**

Post-merger market value of the merged firm 240.02 crores

Less: Pre-merger market value

Mark Ltd. 200 Lakhs × ₹100 = 200 crores

Mask Ltd. 100 Lakhs × ₹20 = 20 crores 220.00 crores

Gain from the merger 20.02 crores

Appropriation of gains from the merger among shareholders:

Q22

Mohit Co. Ltd. is studying the possible acquisition of Neeraj Co. Ltd., by way of merger. The following data are available in respect of the companies:

Particulars	Mohit Co. Ltd.	Neeraj Co. Ltd.
Earnings after tax (₹)	80,00,000	24,00,000
No. of equity shares	16,00,000	4,00,000
Market value per share (₹)	200	160

(i) If the merger goes through by exchange of equity and the exchange ratio is based on the current market price, **what** is the new earning per share for Mohit Co. Ltd.?

(ii) Neeraj Co. Ltd. wants to be sure that the earnings available to its shareholders will not be diminished by the merger. **What** should be the exchange ratio in that case?

Reference

EPS, Exchange Ratio

What's **New**

Answer

(i) **Calculation of new EPS of Mohit Co. Ltd.**

No. of equity shares to be issued by Mohit Co. Ltd. to Neeraj Co. Ltd.

= 4,00,000 shares × ₹ 160/₹ 200 = 3,20,000 shares

Total no. of shares in Mohit Co. Ltd. after acquisition of Neeraj Co. Ltd.

= 16,00,000 + 3,20,000 = 19,20,000

Total earnings after tax [after acquisition]

= 80,00,000 + 24,00,000 = 1,04,00,000

$$\text{EPS} = \frac{1,04,00,000}{19,20,000 \text{ equity shares}} = 5.42$$

(ii) **Calculation of exchange ratio which would not diminish the EPS of Neeraj Co. Ltd. after its merger with Mohit Co. Ltd.**

Current EPS:

$$\text{Mohit Co. Ltd.} = \frac{80,00,000}{16,00,000 \text{ equity shares}}$$

Neeraj Co. Ltd. = ₹ 24 Lakhs / 4 Lakhs Equity Shares = ₹ 6

Exchange ratio = 6/5 = 1.20

No. of new shares to be issued by Mohit Co. Ltd. to Neeraj Co. Ltd.

= 4,00,000 × 1.20 = 4,80,000 shares

Total number of shares of Mohit Co. Ltd. after acquisition

= 16,00,000 + 4,80,000 = 20,80,000 shares

EPS [after merger] = ₹ 104 Lakhs / 20 Lakhs 80 Thousand Equity Shares = ₹ 5

Total earnings in Mohit Co. Ltd. available to new shareholders of Neeraj Co. Ltd.

= 4,80,000 × ₹ 5 = 24,00,000

Recommendation: The exchange ratio (6 for 5) based on market shares is beneficial to shareholders of 'N' Co. Ltd.

Q23

Shivani Limited is considering a takeover of Agam Limited. The particulars of two companies are given below:

Particulars	Shivani Limited	Agam Limited
Earnings after tax (₹)	10,00,000	5,00,000
Equity shares (numbers)	5,00,000	1,25,000
Earnings per share	2	4
Price earnings ratio (times)	10	5

Analyze the information to determine the following:

(i) the market value of each company before merger.

(ii) the market value of the post-merger effect on Shivani Limited, assuming that the management of Shivani Limited estimates that the shareholders of Agam Limited will accept an offer of one share of Shivani Limited for five shares of Agam Limited. **Are** the shareholders of Shivani Limited better or worse off than they were before the merger?

(iii) the market price per share if due to synergic effects, the management of Shivani Limited estimates that the earnings will increase by 20%.

Reference

MV - Pre and Post, with Synergy

What's **New**

Answer

(i) **Market value of companies before merger:**

Particulars	Shivani Limited	Agam Limited
EPS (₹)	2	4
P/E Ratio	10	5
Market price per share (₹)	20	20
Number of equity shares	5,00,000	1,25,000
Total market value (₹)	1,00,00,000	25,00,000

(ii) **Post merger effect on Shivani Limited:**

Particulars	
Post merger earnings (10 lakhs +5 lakhs) (₹)	15,00,000.00
Equity shares (exchange ratio 1:5) (5 lakhs + 1.25 lakhs/5)	5,25,000
EPS (₹)	2.86
P/E ratio	10
Market price per share (₹) (2.86x10)	28.57
Total market value (₹)	1,50,00,000

Gains from merger for Shivani Limited:

Particulars		(₹)
Post merger market value of the firm		1,50,00,000
Less: Pre-merger market value		
Shivani Limited (₹)	1,00,00,000	
Agam Limited (₹)	25,00,000	1,25,00,000
Gains		25,00,000

Apportionment of gains between shareholders:

Particulars	Shivani Limited	Agam Limited
Post merger market value		
5,00,000 × 28.57	1,42,85,714	
25,000 × 28.57		7,14,286
Less: pre merged market value	1,00,00,000	25,00,000
Gains	42,85,714	(17,85,714)

Conclusion: Shareholders of Shivani Limited will be better off than before the merger situation.

(iii) **Post merger earnings:**

Increase in earnings by 20%

New earnings ₹ 15,00,000 × 120% = ₹ 18,00,000 Number of equity shares = 5,25,000

Earnings Per Share (EPS) = ₹18,00,000/5,25,000 = ₹3.429 P/E ratio = 10

Market price per share = ₹3.429 × 10 = ₹34.29

HW Q24 Repeat of Q19

X Ltd. is considering a takeover of Y Ltd. The particulars of the two companies are given below:

Particulars	X Ltd.	Y Ltd.
Earnings after Tax (EAT) (in ₹)	20,00,000	10,00,000
Equity Shares (Nos.)	10,00,000	10,00,000
EPS	2	1
P/E Ratio (times)	10	5

Required:

(i) **Compute** the market value of each company before merger.

(ii) Assuming that the management of X Ltd. estimates that the shareholders of Y Ltd. will accept an offer of one share of X Ltd. for four shares of Y Ltd. If there are no synergic effects, **compute** the market value of the Post-merger X Ltd. Are the shareholders of X Ltd. better off than they were before the merger?

(iii) Due to synergic effects, the management of X Ltd. estimates that the earnings will increase by 20%. **Calculate** the new Post-merger EPS and the Price per Share. Will the shareholders be better-off or worse-off? [7]

Reference

MV before Merger, Post Merger with Synergy

What's **New**

Answer

(i) **Market Value of Companies before merger:**

	X Ltd.	Y Ltd.
EPS (₹)	2	1
P/E Ratio	10	5
Market Price/Share (₹)	20	5
Equity Shares	10,00,000	10,00,000
Total Market Value	2,00,00,000	50,00,000

(ii) **Post-merger effect on X Ltd.**

Post-merger earnings ₹ (20,00,000 + 10,00,000)	₹ 30,00,000
Equity Shares (10,00,000 + 10,00,000 × 1/4)	12,50,000
[As the exchange ratio is 1:4]	
EPS: 30,00,000/12,50,000	₹ 2.4
P/E Ratio	10.00
Market Value : 10 × ₹ 2.4 (P/Ex EPS)	₹ 24
Total Value (12,50,000 × ₹ 24)	₹ 3,00,00,000

Gains from Merger:

Post merger market value of the firm	₹ 3,00,00,000
Less: Pre-merger market value X Ltd. 2,00,00,000 Y Ltd. 50,00,000	₹ 2,50,00,000
	₹ 50,00,000

Apportionment of gains between Shareholders:

	X Ltd.	Y Ltd.
Post-merger market value 10,00,000 × ₹ 24 2,50,000 × ₹ 24	₹ 2,40,00,000	₹ 60,00,000
Less: Pre-merger market value	₹ 2,00,00,000	₹ 50,00,000
	₹ 40,00,000	₹ 10,00,000

Thus the shareholders of both the companies have gained from the merger.

(ii) **Post-merger Earnings: Increase in earnings by 20%**

New earnings: ₹ 30,00,000 × 120% = ₹ 36,00,000

No. of Equity Shares = 12,50,000

EPS = ₹ 36,00,000/12,50,000 = ₹ 2.88

P/E Ratio = 10

Q25

A Ltd. is considering the acquisition of B Ltd. with stock. Relevant financial information is given below:

Particulars	A Ltd.	B Ltd.
Present earnings	₹ 7.5 lakhs	₹ 2.5 lakhs
Equity (No. of shares)	4.0 lakhs	2.0 lakhs
EPS	₹ 1.875	₹ 1.25
P/E ratio	10	5

Answer the following questions:

(i) **What** is the market price of each company?

(ii) **What** is the market capitalization of each company?

(iii) If the P/E of A Ltd. changes to 7.5, **what** is the market price of A Ltd.?

(iv) **Does** market value of A Ltd. change?

Reference | What's **New**

MP, Market Capitalisation, P/E, MV

Answer

(i) A Ltd.'s Market Price = ₹18.75

B Ltd.'s Market Price = ₹ 6.25

(ii) A Ltd.'s Market cap = ₹75 Lakhs

B Ltd.'s market cap = ₹12.5 Lakhs

(iii) Market price of A Ltd.'s = ₹14.0625

(iv) Yes. The market value decreases. i.e., = ₹56.25 Lakhs.

Q26

The following information is provided relating to the acquiring company Xenos Ltd. and the target company Yogita Ltd.

Particulars	Xenos Ltd.	Yogita Ltd.
No. of shares (F.V. ₹ 10 each)	10.00 lakhs	7.5 lakhs
Market capitalization	500.00 lakhs	750.00 lakhs
P/E ratio (times)	10	5
Reserve and surplus	300.00 lakhs	165.00 lakhs
Promoter's holding (No. of shares)	4.75 lakhs	5.00 lakhs

Board of directors of both the companies have decided to give a fair deal to the shareholders and accordingly for swap ratio the weights are decided as 40%, 25% and 35% respectively for Earnings, Book value and Market price of share of each company:

(i) **Calculate** the swap ratio and also calculate Promoters holding percentage after acquisition.

(ii) **What** is the EPS of Xenos Ltd. after acquisition of Yogita Ltd?

(iii) **What** is the expected market price per share and market capitalization of Xenos Ltd. after acquisition, assuming P/E ratio of firm Xenos Ltd. remains unchanged?

(iv) **Calculate** free float market capitalization of the merged firm.

Reference

Swap Ratio, EPS, MPS, Free Float Market Capitalisation

What's **New**

Weighted Avg Swap Ratio

Answer

Particulars	Xenos Ltd.	Yogita Ltd.
Market capitalization	500 lakhs	750 lakhs
No. of shares	10 lakhs	7.5 lakhs
Market price per share	INR 50	INR 100
P / E Ratio	10	5
EPS (MPS ÷ P/E Ratio)	INR 5	INR 20
Profit (No. of shares × EPS)	INR 50 lakhs	INR 150 lakhs
Share Capital	INR 100 lakhs	INR 75 lakhs
Reserve and surplus	INR 300 lakhs	INR 165 lakhs
Total (Share Capital + Reserve and Surplus)	INR 400 lakhs	INR 240 lakhs
Book value per share (Total ÷ No. of shares)	INR 40	INR 32

Solution to Q26 Pg -

	Xeros Ltd.	Yogita Ltd
N1 EPS & MPS		
No. of shares (FV ₹10 each)	10L	7.5L
Market Cap (₹)	500L	750L
MPS (₹)	50	100
PIE Ratio	10	5
EPS (₹) (MPS/PE Ratio)	5	20
N2 BV (Sh Cap + RIS)		
Sh Capital	100	75
RIS	300	165
BV	400	240
BV/share	400/10 = 40	240/7.5 = 32

Part (i) Swap Ratio	(Acq) Xeros	(Target) Yogita	(Target/Acq) Exch Ratio	weight	ER×w
Earnings	5	20	20/5 = 4	0.40	1.6
BV	40	32	32/40 = 0.8	0.25	0.2
MPS	50	100	100/50 = 2	0.35	0.7
				1	2.5

∴ Weighted Swap Ratio = $\frac{2.5}{1}$ = 2.5

Total shares after Acqn.	Xenos	Yogita	Total
No. of shares	10L	7.5 x 2.5 = 18.75L	28.75
Promoters holding after Acqn	4.75	5 x 2.5 = 12.5	17.25

percentage of promoters holding $= \frac{17.25}{28.75} = 60\%$

part(ii) EPS after Acquisition

	Xenos	Yogita	Total
Earnings (EPS x No. of Sh)	5 x 10 = 50	20 x 7.5 = 150	200
Total no. of shares			28.75
EPS = 200/28.75			6.96

part(iii) MPS and Market Capitalisation after acqn

EPS after acqn = 6.96

P/E Ratio = 10

MPS = 6.96 x 10 = ₹69.6

Market Cap = MPS x No. of sh after acqn

= 69.6 x 28.75 = ₹2001 lakhs

Part (iv) Free float market Cap

Promoter holding in combined firm = 60%

∴ Free float = 100% - 60% = 40%

Total MV = 2001 lakhs

∴ Free float MV = 2001 × 40% = 7800.4 lakhs

(i) **Calculation of swap ratio**

EPS 5: 20 i.e., 1: 4 i.e., 4 × 40% = 1.6

Book value 40: 30 i.e., 1: 0.8 i.e., 0.8 × 25% = 0.2

Market price 50: 100 i.e., 1: 2 i.e., 2 × 35% = 0.7

Total = 2.5

Swap ratio is for every one share of Yogita Ltd. to issue 2.5 shares of Xenos Ltd. Hence total no. of shares to be issued =

7.5 lakhs × 2.5 = 18.75 lakh shares.

Promoters holding = 4.75 lakh shares + (5 × 2.5) lakh shares = 17.25 lakh shares

So, parameters holding percentage = $\frac{17.25}{28.75} \times 100 = 60\%$

Total no. of shares = 10 lakhs + 18.75 lakhs = 28.75 lakhs

(ii) **EPS** = $\frac{\text{Total Profit}}{\text{No. of shares}} = \frac{50 \text{ Lakhs} + 150 \text{ lakhs}}{28.75 \text{ Lakhs}}$ = ₹ 6.956

(iii) **Expected market price** = EPS × P/E = 6.956 × 10 = ₹ 69.56 Market capitalization

= ₹ 69.56 × 28.75 lakh shares = ₹ 1,999.85 lakh

(iv) Free float of market capitalization = ₹ 69.56 × (28.75 × 40%) = ₹ 799.94 lakh

Q 27

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.

Required :

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

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

Solution to Q27 Pg –

Part (a) EPS under each of the three Plans

Pay ₹12.5/sh Cash :-

After Acq	Vikas	Nikas	Total
Total Earnings	20L	2L	22L
No. of shares	10L	(4)	10L
			2.2

∴ EPS (22/10)

Exchange ₹25 Cash + 1 for every 4 shares

After acq	Vikas	Nikas	Total
Total Earnings	20L	2L	22L
No. of shares	10L	1L × 1/4 = 25000	10,25,000
			2.15

∴ EPS (22/10.25)

Exchange 1 sh for every 2 shares

	Vikas	Nikas	Total
Total Earnings	20	2	22L
No of shares	10	1L × 1/2 = 50,000	10.5 L
			2.10

∴ EPS (22/10.5)

Part (b) MPS

	Pay ₹12.5	Pay ₹25 + 1 for every 4	One for Every Two
EPS	2.2	2.15	2.10

P/E Ratio (25/2)	12.5	12.5	12.5
MPS	27.5	26.98	26.2

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

Reference

EPS, MPS and Strategy under 3 plans

What's **New**

Answer

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.

H.W Q28

Pure Drugs Limited is in the Pharmaceutical Industry and has a business strategy of growing inorganically. It is contemplating to acquire Solid Drugs Limited which has a strong hold in cardiac segment. Pure Drugs Limited has 30 crore shares outstanding which are trading on an average price of ₹ 300 while Solid Drugs Limited has outstanding shares 20 crore and are selling at an average price of ₹ 200 per share. The EPS are of ₹ 12 and ₹ 6 for Pure Drugs Limited and Solid Drugs Limited respectively. Recently, the management of both the companies had a meeting wherein number of alternative proposals was considered for exchange of shares. They are –

(i) Exchange Ratio should be in proportion to the relative EPS of two companies.

(ii) Exchange Ratio should be in proportion to the relative share prices of two companies.

(iii) Exchange Ratio should be 3 shares of Pure Drugs Limited for every 5 shares of Solid Drugs

No. of sh Pure 30 Cr Solid 20

Limited.

You are **required** to **calculate** EPS and Market Price under the three options, assuming the P/E of Pure Drugs Limited after merger will remain unchanged. Assume that there will not be any synergy gains due the said merger.

Reference

EPS and MPS under 3 plans

What's **New**

Answer

	Pure Drugs Limited	Solid Drugs Limited
EPS (₹)	12	6
No. of Outstanding Shares (in crores)	30	20
Net Profit (in ₹ crores)	360	120
Net Profit (in ₹ crores) after Acquisition	480	
Price of Share	300	200
P/E Ratio	25.00	33.33

	Alternative- I (Basis- EPS)	Alternative- II (Basis- Prices)	Alternative- III (Basis-3 shares for 5 shares)
Exchange Ratio (No. of Shares of Pure Drugs Limited for each share of Solid Drugs Limited)	0.50	0.67	0.60
New Shares to be issued (in Crores)	10	13.40	12
Total No. of Shares after Acquisition (in crores)	40 (30 + 10)	43.40 (30 + 13.40)	42 (30 + 12)
EPS (in ₹) after Acquisition Given ₹ 480 crores of Profit Acquisition	12.00	11.06	11.43
Given the P/E Ratio of 25, the Share Price of Pure Drugs Limited will be - (in ₹)	300.00	276.50	285.71

Soln to Q 28 Pg –

NI

	Pure Drugs	Solid Drugs
No. of Eq sh	30 cr.	20 cr.
MPS	300	200
EPS	12	6
P/E	300/12 = 25	–

EPS & MPS

Plan 1 - Exch ratio : EPS

	Pure	Solid	Total
Earnings (EPS × Total sh)	12×30 = 360	6×20 = 120	480
No. of Eq sh	30	20 × 6/12 = 10	40

$\therefore$ EPS $\frac{480}{40} = 12$

MPS $12 \times 25 = 300$

Plan 2 – Exch Ratio – MPS

	Price	Solid	Total
Earnings			480
No. of Eq Sh	30	$20 \times \frac{2}{3} = 13.33$	43.33
EPS			$\frac{480}{43.33} = 11.08$
MPS			$11.08 \times 25 = 277$

Plan 3 – Exch Ratio – 3 for every 5

	Price	Solid	Total
Earnings			480
No of Eq Sh	30	$20 \times 3/5 = 12$	42
EPS			$\frac{480}{42} = 11.43$
MPS			$11.43 \times 25 = 285.75$

Notes

7. Weighted Swap Ratio

Basis	E. Ratio	Weight	ER * W
EPS	✓	✓	✓
MPS	✓	✓	✓
BV / Intrinsic Value	✓	✓	✓
		Total = ✓	Total = ✓

$\therefore$ Weighted Swap Ratio $= \frac{\Sigma ER \times W}{\Sigma W}$

8. Range of Justifiable Exch Ratios

As per given info -

- EPS based
- MPS based
- BV based
- Intrinsic Price is MPS based

Say, Acq Co. has higher EPS, Return on equity, P/E Ratio, it will expect the exchange Ratio to be on lower side.

9. **growth rate** $= b \times r$

b = Retention ratio

r = return on equity

Q29

Following are the financial statement for Adarsha Ltd. and Biswanath Ltd. for the current financial year. Both the firm operate in the same industry:

Balance Sheet

Particulars	Adarsha Ltd	Biswanath Ltd
Total Current assets	14,00,000	10,00,000
Total Fixed assets (net)	10,00,000	5,00,000
	24,00,000	15,00,000
Equity capital (of ₹ 100 each)	10,00,000	8,00,000
Retained earnings	2,00,000	
14% Long-term debt	5,00,000	3,00,000
Total Current liabilities	7,00,000	4,00,000
	24,00,000	15,00,000

Income-Statements

Particulars	Adarsha Ltd	Biswanath Ltd
Net sales	34,50,000	17,00,000
Cost of goods sold	27,60,000	13,60,000
Gross profit	6,90,000	3,40,000
Operating expenses	2,00,000	1,00,000
Interest	70,000	42,000
Earnings before taxes	4,20,000	1,98,000
Taxes (50%)	2,10,000	99,000
Earnings after taxes (EAT)	2,10,000	99,000

Additional Information

Number of equity shares	10,000	8,000
Dividend payment ratio (D/P)	40%	60%
Market price per share (MPS)	₹ 400	₹ 150

Assume that the two firms are in the process of negotiating a merger through an exchange of equity shares. You have been asked to **assist** in establishing equitable exchange terms, and are **required** to -

(i) **Decompose** the share prices of both the companies into EPS and P/E components, and also **segregate** their EPS figures into return on equity (ROE) and book value/intrinsic value per share (BVPS) components.

(ii) **Estimate** future EPS growth rates for each firm.

(iii) Based on expected operating synergies, Adarsha Ltd. estimates that the intrinsic value of Biswanath's equity share would be ₹ 200 per share on its acquisition. You are required to **develop** a range of justifiable equity share exchange ratios that can be offered by Adarsha Ltd. to Biswanath Ltd.'s shareholders. Based on your analysis in parts (i) and (ii) **would** you expect the negotiated terms to be closer to the upper, or the lower exchange ratio limits? **Why**?

(iv) **Calculate** the post-merger EPS based on an exchange ratio of 0.4:1 being offered by Adarsha Ltd. Indicate the immediate EPS accretion or dilution, if any, that will occur for each group of shareholders.

(v) Based on a 0.4:1 exchange ratio and assuming that Adarsha's pre-merger P/E ratio will continue after the merger, estimates the post-merger market price. **Show** the resulting accretion or dilution in pre-merger market prices.

Worker price per share (MPS) = EPS × P/E ratio or P/E Ratio = MPS / EPS.

Reference

EPS, P/E, BV/Share, Growth Rate, Range of Exchange Ratio, Post Merger EPS & MPS, Accreation / Dilution

What's **New**

Answer

(i) **Determination of EPS, P/E ratio, ROE and BVPC of Adarsha Ltd. and Biswanath Ltd.**

Particulars		Adarsha Ltd.	Biswanath Ltd.
Profits after tax	(PAT)	INR 2,10,000	INR 99,000
No. of Shares	(N)	10,000	8,000
EPS	(PAT/N)	INR 21.00	INR 12.375
Market price share	(MPS)	INR 400	INR 150
P/E ratio	(MPS/EPS)	19.05	12.12
Equity funds	(EF)	12,00,000	8,00,000
BVPS	(EF/N)	INR 120	INR 100
ROE	(PAT/EF) ×100	17.5%	12.375%

(ii) **Estimates of Growth rates in EPS for each Firm**

Retention ratio	(1-D/P ratio)	0.6	0.4
Growth rate	(ROE × Retention ratio)	10.5%	4.95%

(iii) **Justifiable equity share exchange ratio**

(a) Market Price based $\frac{MPS_B}{MPS_A} = \frac{INR\ 150}{INR\ 400}$ = 0.375:1 (lower limit)

Solution to Q29 Pg No. —

Part (i)

	Adarsh	Biswanath
EPS ⇒ EAT	2,10,000	99,000
No of Eq sh	10,000	8000
EPS	21	12.375
P/E ⇒ MPS	400	150
EPS	21	12.375
PE	$\frac{400}{21} = 19.05$	$\frac{150}{12.375} = 12.12$
ROE = PAT / Eq + Pfs	$\frac{210000}{10L + 2L}$	$\frac{99000}{800000}$
	= 17.5%	12.375%

$$BV/Sh = \frac{Eq + Rfs - NTI - FictAsset}{No. of Eq sh}$$

$\frac{12L}{10000}$	$\frac{800000}{8000}$
= 120	= 100

Part (ii) EPS growth rates

$g = b \times r$

b = Retention ratio = 1 − payout ratio

r = return on equity

$g = b \times r$

	Adarsh	Biswanath
b	1 − 0.4 = 60%	1 − 0.6 = 40%
r	17.5%	12.375%
g	0.105 = 10.5%	0.4 × 0.12375% = 4.95%

Part (iii) Share Exchange Ratios

MPS based = $\frac{150}{400} = 0.375$

EPS based = $\frac{12.375}{21} = 0.59$

Est Intrinsic Value based = $\frac{200}{400} = 0.5$

Est IV not given for Acq Co. ∴ MPS based

BV based = $100/120 = 0.833$

As Adarsh Ltd has a higher EPS, MPS, ROE, BV, the negotiation would be expected to be done close to the lower limit, i.e. 0.375.

Part (iv) Post Merger EPS, Exch Ratio is 0.4:1

	Adarsh	Biswanath	Total
Total Earnings	210,000	99,000	3,09,000
Total no. of eq sh	10,000	8000 × 0.4 = 3,200	13,200
EPS	21	12.375	23.41

Acc/Dilution

EPS after merger	23.41	23.41 × 0.4 = 9.36
EPS pre merger	21	12.375
Acc /(Dilu)	2.41	(3.015)

Part (v) Post merger MPS, Exch Ratio is 0.4:1

	Adarsh	Biswanath	Total
Combined EPS			23.41
PE Ratio			19.05

445.96

Post merger MPS

Acc/Dil^ (in MPS)

Post Merger MPS	445.96	445.96 × 0.4 = 178.38
Pre merger MPS	400	150
Accretion	45.96	28.38

(b) Intrinsic value based = $\frac{\text{INR } 200}{\text{INR } 400}$ = 0.5:1 (upper limit)

Since Adarsha Ltd. has a higher EPS, ROE, P/E ratio, and even higher EPS growth expectations, the negotiated terms would be expected to be closer to the lower limit, based on the existing share prices.

(iv) **Calculation of Post-merger EPS and other effects**

Particulars	Adarsha Ltd	Biswanath Ltd.	Combined
PAT (i) (INR)	2,10,000	99,000	3,09,000
Shares outstanding (ii)	10,000	8,000	13,200*
EPS (i)/(ii) (INR)	21.00	12.375	23.41
EPS Accretion (Dilution) (INR)	2.41	3.015**	--

Note:

* Shares outstanding (combined)	= 10,000 shares + (0.40 × 8,000)	= 13,200 Shares
** EPS claim per old share	= ₹ 23.41 × 0.40	= ₹ 9.36
EPS dilution of B Ltd.	= ₹ 12.375 – ₹ 9.36	= ₹ 3.015

(v) **Estimate of Post-merger Market Price and other effects**

Particulars	Adarsha Ltd	Biswanath Ltd	Combined
EPS (i) (INR)	21.00	12.375	23.41
P/E Ratio (ii)	19.05	12.12	19.05
MPS (i) × (ii) (INR)	400	150	446.00
MPS Accretion (Dilution) (INR)	46	28.40***	--
Note: ***			
MPS claim per old share	(INR 446 × 0.4)	178.40	
Less : MPS per old share		150.00	
MPS accretion of B Ltd.		28.40	

Q30

Similar to Q29

Following are the financials of Summer Ltd. and Monsoon Ltd. for the current financial year. Both the firms operate in the same industry:

Balance Sheet as on 31st March 20X2

Particulars	Summer Ltd.	Monsoon Ltd.
Total Current Assets	14,00,000	14,00,000
Total Fixed Assets	24,00,000	10,00,000
Total Assets	38,00,000	24,00,000
Equity Capital (of INR 10 each)	14,00,000	12,00,000
Retained earnings	2,00,000	
14% Long-term debt	10,00,000	7,00,000
Total Current Liabilities	12,00,000	5,00,000
Total Liabilities	38,00,000	24,00,000

Income Statement for the year ended 31st March 20X2

Particulars	Summer Ltd.	Monsoon Ltd.
Net sales	44,50,000	27,00,000
Cost of goods sold	37,60,000	24,00,000
Gross Profit	6,90,000	3,00,000
Operating expenses	2,00,000	1,00,000
Interest	50,000	50,000
Earnings before taxes	4,40,000	1,50,000
Taxes (40%)	2,64,000	90,000
Earnings after taxes (EAT)	1,76,000	60,000

Additional Information:

Number of equity shares	8,000	7,000
Dividend pay-out ratio (D/P)	40%	60%
Market price per share (MPS)	300	100

Assume that the two firms are in the process of negotiating a merger through an exchange of equity shares. You have been asked to assist in establishing equitable exchange terms, and are **required** to -

(i) **Decompose** the share prices of both the companies into EPS and P/E components, and also **segregate** their EPS figures into return on equity (ROE) and book value/intrinsic value per share (BVPS) components.

(ii) **Estimate** future EPS growth rates for each firm.

(iii) Based on expected operating synergies, Summer Ltd. estimates that the intrinsic value of Monsoon Ltd.'s equity share would be INR 200 per share on its acquisition. You are required to **develop** a range of justifiable equity share exchange ratios that can be offered by Summer Ltd. to Monsoon Ltd.'s shareholders. Based on your analysis in parts (i) and (ii) **would** you expect the negotiated terms to be closer to the upper, or the lower exchange ratio limits? and **why**?

(iv) **Calculate** the post-merger EPS based on an exchange ratio of 0.4:1 being offered by Summer Ltd. Indicate the immediate EPS accretion or dilution, if any, that will occur for each group of shareholders.

(v) Based on a 0.4:1 exchange ratio and assuming that Summer Ltd.'s pre-merger P/E ratio will continue after the merger, estimate the post-merger market price. **Show** the resulting accretion or dilution in pre-merger market prices.

Reference

EPS, P/E, BV/Share, Growth Rate, Range of Exchange Ratio, Post Merger EPS & MPS, Accreation/Dilution

What's **New**

Answer

(i) **Determination of EPS, P/E ratio, ROE and BVPS of Summer Ltd. and Monsoon Ltd.**

Particulars	Summer Ltd.	Monsoon Ltd.
Profit after tax	1,76,000	60,000
No. of shares	5,000	4,000
EPS (PAT/No. of shares)	35	15
Market Price per share (MPS)	300	100
P/E ratio (MPS/EPS)	9	7
Equity Funds	16,00,000	12,00,000
Book Value per share (Equity funds/ No. of shares)	320	300
Return on Equity (PAT/Equity Funds) × 100	11%	5%

(ii) **Determination of Growth rates in EPS for each firm**

Particulars	Summer Ltd.	Monsoon Ltd.
Retention Ratio (1- dividend pay-out ratio)	60%	40%
Growth rate (ROE X Retention Ratio)	6.6%	2%

(iii) **Determination of justifiable equity share exchange ratio**

(a) Market Price based MPSM/ MPSS = INR 100/INR 300	0.33:1 (Lower limit)
(b) Intrinsic Value based =INR 200/ INR 300	0.67:1 (Upper limit)

Since Summer Ltd. has higher EPS, ROE, P/E ratio, and even a higher EPS growth expectation, the negotiated terms would be expected to be closer to the lower limit based on the existing share prices.

(iv) **Calculation of Post-merger EPS and other effects**

Particulars	Summer Ltd	Monsoon Ltd.	Combined
PAT (i) (INR)	1,76,000	60,000	2,36,000
Shares Outstanding (ii)	5,000	4,000	6,600 *
EPS (i)/(ii) (INR)	35	15	36
EPS Accretion (Dilution) (INR)	1	0.70 *	-

Note :		
Shares outstanding (combined)	5,000 + (4,000*0.40)	6,600
EPS claimed per old share	36*0.40%	14.30
EPS dilution of Monsoon Ltd.	15 – 14.3	0.70

(v) **Estimation of Post- merger Market Price and other effects**

Particulars	Summer ltd.	Monsoon Ltd	combined
EPS (i) INR	35	15	36
P/E Ratio (ii)	8.52	6.67	8.52
MPS (i) × (ii)	300	100	305
MPS Accretion (Dilution) (INR)	5	21.90 *	

Note:		
MPS claim per old share	305*0.4	121.90
Less: MPS per old share		100
MPS accretion of Monsoon ltd.		21.90

Q31

Ratnakar Ltd. agrees to buy over the business of JSB Ltd. effective 1st April, 2022. The summarized Balance Sheet of Ratnakar Ltd. as on 31st March 2022 are as follows:

Balance Sheet as at 31st March, 2022 (In crores)

Liabilities	Ratnakar (₹)	JSB (₹)
Paid up Share Capital		
Equity Shares of ₹100 each (No. of sh = 3.5)	350	..
Equity Shares of ₹10 each (No of sh = 0.65)	..	6.5
Reserve & Surplus	950	25
Total	1,300	31.5

Assets		
Net Fixed assets	220	0.5
Net Current assets	1,020	29
Deferred current asset	60	2
Total	1,300	31.5

Ratnakar Ltd proposes to buy out JSB Ltd. and the following information is provided to you as a part of the scheme of buying:

(1) The weighted average post tax maintainable profits of Ratnakar Ltd and JSB Ltd. for the last 4 years are INR 300 crores and ₹10 crores respectively.

(2) Both the companies envisage a capitalization rate of 8%.

(3) Ratnakar Ltd. has a contingent liability of ₹300 crores as on 31st March, 20 × 1.

(4) Ratnakar Ltd to issue shares of ₹100 each to the shareholders of JSB Ltd. in terms of the exchange ratio as arrived on the share value basis. (Please Consider weights of 1 & 3 for the value of shares arrived on Net Asset basis and Equity Capitalization method respectively for Ratnakar Ltd & JSB Ltd.

You are **Required** to arrive at the value of the shares of both Ratnakar Ltd and JSB Ltd. under:

(a) Net Asset Value method

(b) Earnings Capitalization Method

(c) Exchange ratio of shares of Ratnakar Ltd to be issued to the shareholders of JSB Ltd on a Fair value basis (taking into consideration the assumptions mentioned in point 4 above)

Reference

Valuation of Shares - Net Assets, Earning Capitalisation, Exchange Ratio

What's **New**

Answer

(a) **Net Asset Value**

Ratnakar Ltd (₹ in Crores) $\frac{1,300 - 300}{3.5} = 285.71$

JSB Ltd (₹ in Crores) $\frac{31.5}{0.65} = 48.46$

(b) **Earning Capitalization Value**

Ratnakar Ltd (₹ in Crores) $\frac{350 / 8}{3.5} = 1,071.43$

Solution to Q31 Pg –

part (a) Net Asset Value Method

	Ratnakar	SB
Net assets	1300	31.5
(-) Contingent liabs	(300)	–
	1000	31.5
No. of Eq shares	$\frac{350}{100} = 3.5$	$\frac{6.5}{10} = 0.65$
Net Asset Value / Eq sh.	285.71	48.46

part (b) Earnings Capitalisation Method

	Ratnakar	JSB
Avg post tax maintainable profit	300	10
Capitalisation Rate	8%	8%
Value of Equity	$\frac{300}{8\%} = 3750$	$\frac{10}{8\%} = 125$
No of Eq sh	3.5	0.65
Value / Eq share	1071.43	192.31

Part (c) Fair Value Basis (weights - 1 & 3)

Basis	Ratnakar			JSB		
	Value/sh	W	W×Value	Value/sh	W	W×Value
Net Asset Value	285.71	1	285.71	48.46	1	48.46
Earning Cap	1071.43	3	3214.29	192.31	3	576.93
		4	3500		4	625.39
Fair value		$\frac{3500}{4}$ = 875		$\frac{625.39}{4}$ = 156.35		

$$\text{Exch Ratio} = \frac{\text{Target Co.}}{\text{Acq Co.}} = \frac{156.35}{875} = 0.1787$$

NIO Discount due to lack of Marketability & Controllability

Acq Co. → Target Co.

Expected Rate of Return or Expected Price Multiple

↓

Value ✓

Rate can be given ← ↳ Disc due to lack of Marketability (✓)

or assumed ↪ Disc due to lack of controllability ↪ ✓

lack of marketability - Pvt Ltd / start up

lack of controllability - Co. will be controlled by the old promoters of Target Co.

JSB Ltd (₹ in Crores) $\frac{10 / 0.08}{0.65} = 192.31$

(c) **Fair Value**

Ratnakar Ltd (₹ in Crores) $\frac{285.71 \times 1 + 1,071.43 \times 3}{4} = 875$

JSB Ltd (₹ in Crores) $\frac{48.46 \times 1 + 192.31 \times 3}{4} = 156.3475$

Exchange Ratio 156.3475/875 = 0.1787

Ratnakar Ltd should issue 0.1787 share for each share of JSB Ltd.

Note: In above solution it has been assumed that the contingent Liability will materialize at its full amount.

Q32

Royal Pvt Ltd and Aero Pvt Ltd are proposed to be merged with Vincent Pvt Ltd whereby Vincent P Ltd will issue its own shares to the shareholders of the two target companies. The recent summarized financial statements of all the three companies are shared below.

Vincent P Ltd

Profit & Loss Statement	31-Mar-20	31-Mar-21
Total Revenue from Operations	1,17,41,057	2,89,59,987
Operating Expenses	42,35,529	1,93,81,027
Profit/(Loss) before Tax	75,05,528	95,78,960
Total Tax	18,76,382	23,94,740
Profit After Tax	56,29,146	71,84,220

Balance Sheet	31-Mar-20	31-Mar-21
Equity & Liabilities		
Equity		
Equity Share Capital (Face Value ₹ 1)	41,49,800	41,49,800
Other Equity	4,37,82,501	5,09,66,721
Total Equity	4,79,32,301	5,51,16,521
Liabilities		
Non Current Liabilities	0	0
Total Current Liabilities	2,60,512	1,94,212
Total Equity & Liabilities	4,81,92,813	5,53,10,733

Assets		
Property, Plant & Equipment	20,51,077	20,51,577
Investments	3,24,90,500	1,76,37,500
Non Current Assets	3,45,41,577	1,96,89,077
Current Assets		
Inventories	1,00,00,500	1,50,00,000
Cash & Cash Equivalents	34,93,620	2,04,49,657
Other Current Assets	1,57,116	1,71,999
Total Current Assets	1,36,51,236	3,56,21,656
Total Assets	4,81,92,813	5,53,10,733

Additional information:

The Property, Plant & Equipment includes Land and is carried at Fair Value. The fair value of investments is ₹ 2,17,46,000. The future cash flow projections are not available but the weighted average profits of the last 2 years can be considered maintainable. The capitalization rate applicable to the company is 15 percent. Comparable companies trade in the market at 2.28x Price to Book Value multiple. However, a marketability discount may be considered. All the three approaches may carry equal weight.

Royal P Ltd

Profit & Loss Statement	31-Mar-20	31-Mar-21
Total Revenue from Operations	11,00,000	11,10,407
Operating Expenses	4,85,119	4,88,316
Profit/(Loss) before Tax	6,14,881	6,22,091
Total Tax	4,256	5,560
Profit After Tax	6,10,625	6,16,531

Balance Sheet	31-Mar-20	31-Mar-21
Equity & Liabilities		
Equity		
Equity Share Capital (Face Value ₹ 1)	1,40,000	1,40,000
Other Equity	20,59,643	26,76,174
Total Equity	21,99,643	28,16,174
Liabilities		
Non-Current Liabilities	0	0
Total Current Liabilities	36,506	18,666
Total Equity & Liabilities	22,36,149	28,34,840

Assets		
Tangible Property	20,50,000	20,50,000
Non Current Assets		
Current Assets		
Cash & Cash Equivalents	1,63,308	7,74,449
Other Current Assets	22,841	10,391
Total Current Assets	1,86,149	7,84,840
Total Assets	22,36,149	28,34,840

The Fair Value of Tangible Property is ₹ 80,59,000. The future cash flow projections are not available and the past profits is not representative of future performance. Given the size of the company, it may not be comparable to large listed companies in the market.

Aero P Ltd

Profit & Loss Statement	31-Mar-20	31-Mar-21
Total Revenue from Operations	1,00,000	1,08,245
Operating Expenses	83,541	86,370
Profit/(Loss) before Tax	16,459	21,875
Total Tax	4,142	5,507
Profit After Tax	12,317	16,368

BALANCE SHEET	31-Mar-20	31-Mar-21
Equity & Liabilities		
Equity		
Equity Share Capital (Face Value ₹ 1)	1,40,000	1,40,000
Other Equity	20,62,126	20,78,494
Total Equity	22,02,126	22,18,494
Liabilities		
Non-Current Liabilities		
Total Current Liabilities	36,083	18,499
Total Equity & Liabilities	22,38,209	22,36,993
Assets		
Tangible Property	20,50,000	20,50,000
Non Current Assets	20,50,000	20,50,000
Current Assets		
Cash & Cash Equivalents	1,65,475	1,76,683
Other Current Assets	22,734	10,310
Total Current Assets	1,88,209	1,86,993
Total Assets	22,38,209	22,36,993

Additional information:

Investments include 5,00,000 shares of Vincent P Ltd. The cash flow projections are not available and past profits are not representative of future profits. Also, Market Approach will not be relevant for valuation.

You are **required** to value the three companies using applicable approaches and arrive at the Share Exchange Ratio. Also, calculate the number of shares to be issued by Vincent to each company shareholders.

Reference
Valuation of Companies & Exchange Ratio

What's New
Cost, Market and Income Approach

Answer

Valuation of Vincent P Ltd

Valuation under Cost Approach

Book Value of Assets	5,53,10,733
Less: Book Value of Liabilities	1,94,212
Book Value of Equity	5,51,16,521
Less: Book Value of Investments	1,76,37,500
Add: Fair Value of Investments	2,17,46,000
Adjusted Book Value of Equity	5,92,25,021
Number of Shares	41,49,800
Adjusted Book Value of Equity (Per Share)	14.27

Valuation under Market Approach

Valuation Multiple	2.2800
Book Value of the Company	5,51,16,521
Value of Company	12,56,65,667
Less: Discount for Lack of Marketability	2,51,33,133
Value of Equity (P/BV Multiple)	10,05,32,534
Value per share	24.23

Valuation under Income Approach

Profit 2021	Weight 2	71,84,220
Profit 2020	Weight 1	56,29,146

Sol^n to Q 32 Pg –

Vincent Ltd

(1) Cost App = Net Assets Approach (31.3.21)

Particulars	Amt
Total Assets	5,53,10,733
Less: Bv of Inv	(176,37,500)
Add: Fv of Inv	2,17,46,000
Less: CL	(1,94,212)
NCL	–
Net Assets	5,92,25,021
No of Eq Sh	41,49,800
Value / Eq Sh	14.27

(2) Income App = Earning Capitalisn.

Weighted Avg Post Tax Profits

Yr	PAT	W	PAT x W
21	71,84,220	2	1,43,68,440

20	56,29,146	1	56,29,146
		3	1,99,97,586

∴ Weighted Avg PAT = 66,65,862

Cap rate = 15%

∴ Value of Eq shares = $\frac{66,65,862}{15\%}$ = 4,44,39,080

Value / Eq Sh = $\frac{4,44,39,080}{41,49,800}$ = 10.71

(3) Market Approach = Price / BV Multiple → cost (not fv of any asset)

(Assuming disc due to lack of marketability as 20%)

Particulars	Amt
BV (Net Book Value ⇒ Net Assets) [5,53,10,733 − 1,94,212]	5,51,16,521
Price / BV Multiple	2.28
Value of Equity = (2.28 × 5,51,16,521)	12,56,65,667

Less: Disc due to lack of mktability @20%

	(2,51,33,134)
Value of Equity	10,05,32,533
No. of Eq sh	41,49,800
Value/share	24.23

∴ Fair value/share of Vincent (equal weight)

Basis	Value	W	Value × W
Cost	14.27	1	14.27
Income	10.71	1	10.71
mkt	24.23	1	24.23
		3	49.21

∴ Weighted Avg = fair value = $\frac{49.21}{3} = 16.40$

Royal. P. Ltd – Cost Approach (Adj BV)

Particulars	Amt
BV of Assets	28,34,840
(–) BV of Tangible Prop	(20,50,000)
(+) FV of Tangible Prop	80,59,000
	88,43,840
(–) BV of Liab	(18,666)
Net Asset Value	88,25,174
No. of Eq sh	1,40,000
NAV / Eq sh	63.04

Aero P Ltd – Cost Approach (Adj NAV)

Particulars	₹
Total BV of Assets	22,36,993
(–) BV of Investments (assumed = Tangible)	(20,50,000)

(+) FV of Investments (5000000 × 16.40) — Property) — 82,00,000

83,86,993

(18,499)

(-) BV of liabilities

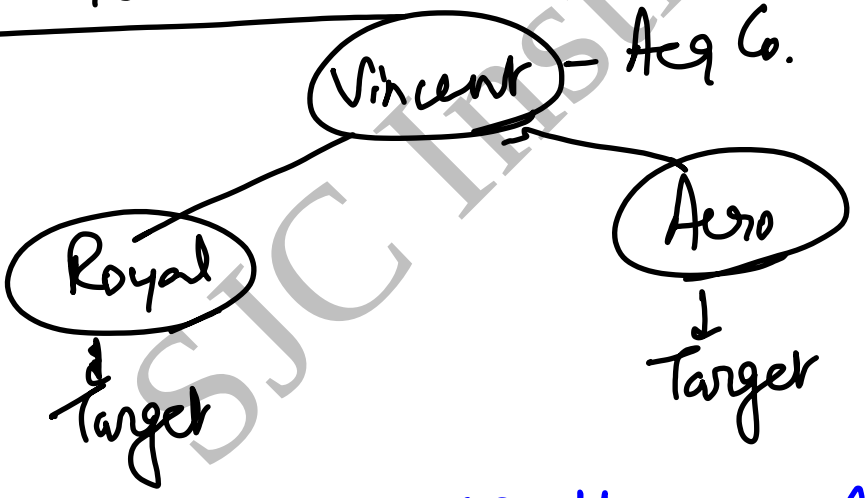
83,68,494

Net Asset Value

No. of Eq sh — 1,40,000

BV/sh — 59.77

Share Exch Ratios



Vincent to Royal = $\frac{63.04}{16.4} = 3.84$

Vincent to Aero = $\frac{59.77}{16.4} = 3.65$

No. of Eq sh

To Royal ⇒ 3.84 × 140000 = 5,37,600

To Aero ⇒ (3.65 × 140000) − 5L = 11,000

Average Maintainable Profit (weighted average)		66,65,862
Capitalisation Rate		15%
Value of Equity (PECV Approach)		4,44,39,079

Calculation of Value per share

Particulars	Weights	Fair Value	Fair Value per share
Cost Approach (Adjusted Net Asset Value)	1/3	5,92,25,021	14.27
Income Approach (PECV Method)	1/3	4,44,39,079	~~24.23~~ 10.71
Market Approach (P/BV Ratio)	1/3	10,05,32,534	~~10.71~~ 24.23
Value of Equity (Weighted average)	100%	6,80,58,738	16.40

Valuation of Royal P Ltd

Valuation under Cost Approach

Calculation of adjusted Net Asset Value	Royal P Ltd
Book Value of Assets	28,34,840
Book Value of Liabilities	18,666
Book Value of Equity	28,16,174
Less: Book Value of Investments	20,50,000
Add: Fair Value of Investments	80,59,000
Adjusted Book Value of Equity	88,25,174
Number of Shares	1,40,000
Adjusted Book Value of Equity (Per Share)	63.04

The Market Approach and Income Approach cannot be applied based on available information.

Valuation of Aero P Ltd

Calculation of adjusted Net Asset Value	Royal P Ltd
Book Value of Assets	22,36,993
Book Value of Liabilities	18,499
Book Value of Equity	22,18,494
Less: Book Value of Investments	20,50,000
Add: Fair Value of Investments (Note 1)	82,00,243 000
Adjusted Book Value of Equity	83,68,737
Number of Shares	1,40,000
Adjusted Book Value of Equity (Per Share)	~~59,78~~

Note 1: Since Aero holds 5,00,000 shares of Vincent Ltd and wehave already calculated Vincent Ltd valuation above, the Fair Value of investment would be 16.40 × 5,00,000 = ~~82,00,243~~ 82,00,000

Calculation of Share Exchange Ratio

Particulars	Vincent	Royal	Aero
Valuer per share	16.40	63.04	59.78
Share Exchange Ratio with Transferee	10.00	38.44	36.45
		10: 38	10: 36

Number of shares to be issued to shareholders of Royal:

Existing shares of Royal 140,000

Share exchange Ratio 10 : 38

Number of shares to be issued: 140,000 × 38 / 10 = 5,32,000

Number of shares to be issued to shareholders of Aero:

Existing shares of Royal 140,000

Share exchange Ratio 10 : 36

Number of shares to be issued:	140,000 × 36 / 10	504,000
Less: Shares already held by Aero		
(since Aero will be merged and Vincent cannot its own shares, there will not be anyone to hold the shares and thus these shares will be cancelled)		500,000
Net Shares to be issued		4,000

Q33

Waree Ltd. wants to acquire Minda Ltd.,

The balance sheet of Minda Ltd. as on 31.03.20x2 is as follows:

Liabilities	Amount	Assets	Amount
(1) Shareholders Fund:		(1) Non-current Assets:	
(a) Share Capital		(a) Fixed Assets	
60,000 Equity Shares of ₹ 10 each	6,00,000	(i) Tangible Assets:	11,00,000
Retained Earnings	2,00,000	(2) Current Assets:	
(2) Non-Current Liabilities:		(a) Inventories	1,70,000
Long Term Borrowings - 12% Deben- ture	2,00,000	(b) Trade Receivables	30,000
(3) Current Liabilities:			
Trade Payables - Sundry Creditors	3,20,000	(c) Cash and Cash Equivalents	20,000
Total	13,20,000	Total	13,20,000

NPV of Acquisition

= PV of CF from Acq − Purch Consideration

Purchase Consideration

- Eq sh issued ✓
- Debenture ✓
- Other Ext liab settled ✓
  - (→ Realn from Drs (✓)
  - (→ Realn from Stock (✓)
  - (→ Cash taken (✓)

PV of CF from Acq

PV of CF

or

Two phase Calcn

If NPV is positive, acquisition is financially feasible.

Additional Information:

(i) Shareholders of Minda Ltd. will get one share in Waree Ltd. for every two shares.

(ii) External liabilities are expected to be settled at ₹ 3,00,000.

(iii) Shares of Waree Ltd. would be issued at its current price of ₹ 15 per share.

(iv) Debenture holders will get 13% convertible debentures in the purchasing companies for the same amount.

(v) Debtors and inventories are expected to release ₹ 1,80,000.

(vi) Waree Ltd. has decided to operate the business of Minda Ltd. as a separate division. The division is likely to give cash flow (after tax) to the extent of ₹ 3,00,000 per year for 6 years. Waree Ltd. has planned that after 6 year this division would be damaged and disposed off for ₹ 1,00,000.

(vii) Company's cost of capital is 14%

Make a report to the managing director advising him about the financial feasibility of the acquisition.

Note: Present value of ₹ 1 for six years @ 14% interest : 0.8772, 0.7695, 0.6750, 0.5921 and 0.4556.

Reference

Report for Financial Feasibility

What's **New**

Answer

Cost of Acquisition	INR
Equity share $\left(\frac{60,000}{2} \times 15\right)$	4,50,000
13% convertible debenture	2,00,000
Cash (Payment for external liabilities – Realisation of Cash from Debtors and inventories – Cash of Minda Ltd.) i.e., (3,00,000 – 1,80,000 – 20,000)	1,00,000
Total Consideration	7,50,000

Calculation of NPV

Year	Cash inflow	PV factor @ 14%	Prevent value
1	3,00,000	0.8772	2,63,160
2	3,00,000	0.7695	2,30,850
3	3,00,000	0.6750	2,02,500

Solution to Q33 Pg –

N1 Purchase Consideration = Cost of Acq

	₹
Eq sh issued $\left(\frac{60,000}{2} \times 15\right)$	4,50,000
13% Conv Debentures (same amt)	2,00,000
Ext Liabs (Trade Cres) settled	3,00,000
Less: Realn from Debtors & Inventories	(1,80,000)
Less: Cash	(20,000)
	7,50,000

1 ÷ 1.14 = mrt mrt mrt mrt mrt mrt

1.14 ÷ ÷ 1 mrt mrt mrt mrt mrt mrt MRL

N2 PV of CF.

Yr	CF	Df @14%	PV
1–6	3,00,000	3.889	1166700
6	1,00,000	0.456	45600
			12,12,300

NPV of Acquisition

= PV of CF – Cost of Acq

= 12,12,300 – 7,50,000

= ₹ 4,62,300

As NPV is positive, the acquisition is financially feasible for the Kaveri Ltd.

4	3,00,000	0.5921	1,77,630
5	3,00,000	0.4556	1,55,820
6	3,00,000 + 1,00,000		1,82,240
	Total PV of cash inflow		12,12,200
	Less: Cost of acquisition		7,50,000
	NPV		4,62,200

Since the NPV is positive it is suggested to acquire Minda Ltd. to maximize the value of shareholders of both the companies.

Q34

The following information is relating to Fortune India Ltd. having two division Pharma division and FMCG division. Paid up share capital of Fortune India Ltd. is consisting of 3,000 lakhs equity shares of ₹ 1 each. Fortune India Ltd. decided to de-merge Pharma Division as Fortune Pharma Ltd. w.e.f. 1.4.20x6. Details of Fortune India Ltd. as on 31.3.20x6 and of Fortune Pharma Ltd. as on 1.4.20x6 are given below:

Particulars	Fortune Pharma Ltd. (INR in Lakhs)	Fortune India Ltd. (INR in Lakhs)
Outside Liabilities		
Secured Loans	400	3,000
Unsecured Loan	2,400	800
Current Liabilities & Provision	1,300	21,200
Assets		
Fixed Assets	7,740	20,400
Investments	7,600	12,300
Current Assets	8,800	30,200
Loan & Advances	900	7,300
Deferred tax / Misc. exp.	60	(200)

Board of directors of the company have decided to issue necessary equity shares of Fortune Pharma Ltd. of ₹ 1 each, without any consideration to the shareholders of Fortune India Ltd. For that purpose, following points are to be considered:

Transfer of Liabilities and Assets at Book value.

Estimated profit for the year 20x6-x7 is ₹ 11,400 lakh for Fortune India Ltd. and ₹ 1,470 lakh for Fortune Pharma Ltd.

Estimated Market price of Fortune Pharma Ltd. is ₹ 24.50 per share.

Average P/E ratio of FMCG sector is 42 and Pharma sector is 25, which is to be expected for both the companies.

N12 demerger

No. of sh = ?
PAT = 1430
MPS = 245
PE = 25
EPS = ?

Main Co. → demerger → Main Co.
demerger → Demerged Co.

Main Co. ↓ shareholders ↓ ITC Ltd. → demerge → ITC Ltd. (excl Hotels), ITC Hotels Ltd

ITC Ltd : BV = 50,000 Cr.
No. of eq sh = 100 Cr.
BV/sh = 500

ITC Ltd. (excl Hotels) = 30,000 Cr.
No. of sh = 100 Cr.

ITC Hotels Ltd. = 20,000 Cr.
No. of sh. = ? = 20 Cr. (say)
BV/sh = ✓

∴ Exch ratio = 20 Cr / 100 Cr
= 0.2
⇒ 0.2 sh for 1 share in main Co.

Soln to Q34 Pg No. —

Fortune India (FMCG + Pharma)
31.3.06
↓
3000 L shares
BV = 45,000

1/4/06 Fortune India (Original) = FMCG
BV (Bfr) = 24000
No. of eq sh → 3000 L
Pft = 11,400

1/4/06 Fortune Pharma (demerged Co.)
BV = 21000
MPS = 245
P/E = 25
EPS = ?

∴ Pft = 1470

No. of eq sh = ~

Part (i) Exchange Ratio

	Pre	Post	
	Fortune India (FINCL + Pharma)	Fortune Pharma	Fortune FINCL (Bif)
			(70000 - 25100)
BV of Assets	70000	25100	44,900
(-) BV of o/s liab	25000	4100	20,900
Net Assets	45000	21000	24000
No. of sh	3000	?	same → 3000

N1 Net Assets

N2 Fortune Pharma - No. of eq shares

MPS	24.5
P/E	25
EPS = (MPS/P/E)	0.98
PAT	1470 L
∴ No. of Eq Sh (1470/0.98)	1500 L

Exchange Ratio = $\frac{1500}{3000} = 0.5$

ie 0.5 shares of Pharma Ltd for every 1 share of fortune India Ltd

part(ii) Expected MP of fortune India

	₹
PAT	= 11,400
No. of eq sh (original)	= 3,000
EPS (11400/3000)	= 3.8
P/E	= 42
∴ MPS (3.8 × 42)	= 159.6

part(iii) BV/sh of both the Cos.

(Post Demerger)	Pharma	fortune India
BV (₹ in lakh)	21,000	24,000
No. of eq sh	1500	3,000
BV/Eq sh	14	8

Calculate:

(i) The Ratio in which shares of Fortune Pharma are to be issued to the shareholders of Fortune India Ltd.

(ii) Expected Market price of Fortune India Ltd.

(iii) Book value per share of both the Co's after demerger.

Reference

Demerger

What's **New**

Answer

Shareholder's fund

	Fortune India Ltd.	Fortune Pharma Ltd.	Fortune India (FMCG) Ltd
Assets	70,000	25,100	44,900
Outside Liabilities	25,000	4,100	20,900
Net Worth	45,000	21,000	24,000

(i) **Calculation of shares of Fortune Pharma Ltd. to be issued to shareholders of Fortune India Ltd.**

	Fortune Pharma Ltd.
Estimated Profit (INR Lakhs)	1,470
Estimated market price (INR)	24.5
Estimated P/E	25
Estimated EPS (INR) (24.50/25)	0.98
No. of shares (Lakhs) (1,470 0.98)	1,500

Hence, Ratio is 1 shares of Fortune Pharma Ltd. for 2 shares of Fortune India Ltd.

(ii) **Expected market price of Fortune India Ltd.**

	Fortune India (FMCG) Ltd
Estimated Profit (INR in Lakhs)	~~1,470~~ 11,400
no. of equity shares (in Lakhs)	3,000
Estimated EPS (INR)	3.8
Estimated P/E	42
Estimated market price (INR)	159.6

(iii) **Book value per share Fortune Pharma Ltd.**

	Fortune Pharma Ltd.	Fortune India (FMCG) Ltd.
Net worth (INR in Lakhs)	21,000	24,000
No of Shares (INR in Lakhs)	1,500	3,000
Book value of shares (INR)	14	8

Q35

Hypothetical Ltd. is acquiring all the outstanding equity shares of Target Ltd. by exchanging one share of its own equity shares for each share of Target Ltd. Hypothetical Ltd. has a policy of keeping 50% of its capital structure in debts. The Capital structure of both these firms before the merger is as follows:

	Hypothetical Ltd.	Target Ltd.
	(Amount in Lakhs of rupees)	
Equity capital (of ₹ 100 each)	20	5
Retained earnings	25	25
14% Preference Shares	5	—
13% Debts	50	—

Hypothetical company needs your advice on the following questions:

(i) **What** will the capital structure of the merged firm be? Determine the percentage share of debt in the merged firm.

(ii) **Has** the merged firm's financial risk declined?

(iii) **How** much additional debt can the combined firm borrow to return to a capital structure 50% of **which** is debt?

Reference

Merged Co. - Capital Structure, Financial Risk, Additonal Debt

What's New

Answer

(i) Capital structure of merged firm – (In Rupees)

Equity capital	25,00,000
Retained Earnings	50,00,000
14% Preference shares	5,00,000
13% Debts	50,00,000
	1,30,00,000

Debt / total capital = 38.46%

(ii) Yes, the financial risk has declined due to the lower debt ratio of the merged firm. The same was 50% in a pre-merger situation.

(iii) Additional Debts = ₹ 30,00,000

Q36

XY Ltd., a retail florist, is for sale at an asking price of ₹ 62,00,000. You have been contacted for a potential buyer who has asked you to give him opinion as to whether the asking price is reasonable. The potential buyer has only limited information about XY Ltd. And potential buyer does not know that annual gross sales of XY Ltd. is about ₹ 82,00,000 and that last year's tax return reported an annual profit of ₹ 8,40,000 before tax. You have collected the following information from the financial details of several retail florists that were up for sale in the past:

Table 1

Particulars	Price-to-sale(P/S) ratio	Price-to-earnings(P/E) ratio
Number of firms	38.0	33.0
Mean ratio	0.55	3.29
Coefficient of Variation	0.65	1.52
Maximum ratio	2.35	6.29

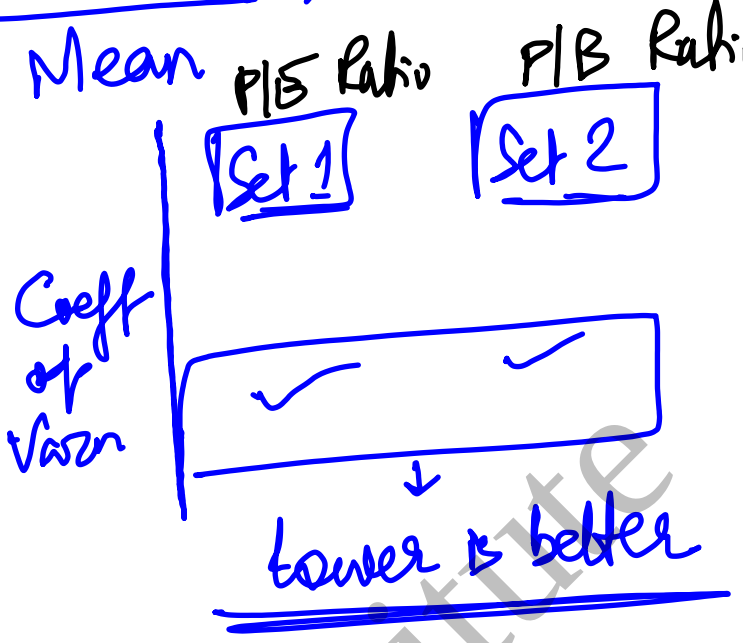
Table 2 Top 10 players (in descending P/S order)

Firm	1	2	3	4	5	6	7	8	9	10
(P/S) ratio	2.35	1.76	1.32	1.17	1.09	1.01	0.96	0.85	0.72	0.68
(P/E) Multiple	5.65	6.29	5.31	4.60	3.95	3.25	3.10	2.96	2.90	2.75

Offer your opinion on the reasonableness of the asking price.

NB Coefficient of Variation – (Measure of dispersion)

$$= \frac{\text{Std Deviation}}{\text{Avg or Mean}} \times 100$$



Use the basis whose Coeff of Varn is lower

Reference

Evaluation of Ask Price – Price Multiple Based

What's **New**

Co-efficient of Variation

Answer

Average P/S ratio of Industry = 0.55 Coefficient of variation of P/S ratio = 0.65 Average P/E ratio of Industry = 3.29 Coefficient of variation of P/E ratio = 1.52

The coefficient of variation of P/S ratio is much lower than the coefficient of variation of P/E ratio. From this we can infer that there is a wider dispersion in case of P/E ratio than in case of P/S ratio. Therefore, while defining the market, it is preferable to take P/S as guiding factor.

Asking price of XY Ltd. INR 62,00,000

Annual sales of XY Ltd. INR 82,00,000

Asking P/S ratio of XY Ltd. = 62,00,000/82,00,000 = 0.76

P/S ratio of XY Ltd. 0.76 is much higher than industry average 0.55, it is far below than the maximum P/S ratio of 2.35. The ratio of XY Ltd. is lying between 8th and 9th highest of the top ten players of the industry. In other words, XY Ltd. would need to be among the 22%* (8.5/38 × 100) most desirable florist business to justify the asking price of ₹ 62,00,000 with annual gross sales of ₹ 82,00,000. If the sales are likely to hold in the coming years, the price may be (0.85 + 0.72)/2 × ₹ 82 Lakhs = ₹ 64.37 Lakhs.

Provided the buyer believes that XY Ltd. is a superior retail florist (among the top quartile), and the future sales are not likely to fall, the asking price of ₹ 62 lakhs appears to be reasonable. However, the buyer should make sure that the florist's accounts reflect a true and fair view of the business before he arrives at a final decision.

Note: 22% = (Average of 8th and 9th year ÷ No. of Firms) × 100

i.e., $\left\{\left(\frac{8+9}{2}\right) \div 38\right\} \times 100 = \frac{8.5}{38} \times 100 = 22\%$ Approx.

Soln to Q 36 Pg –

As Coeff of Varn is lower in case of P/S Ratio, we are ignoring P/E Ratio.

Avg P/S Ratio is = 0.55

Maxm P/S Ratio is : 2.35

P/S Ratio asked by XY Ltd = 62/82 = 0.76

Had the asked P/S Ratio been more than the maxm P/S Ratio, it would have been unreasonable.

As it is between Avg & Maxm P/S Ratio it is reasonable.

By analysing the Top 10 players, the asked P/S Ratio is in between 8th & 9th firm. i.e. XY Ltd's position can be understood as = $\frac{8+9}{2}$ = 8.5th position

∴ It can also be said that it is in the top 8.5/38 firms = 22% of the firms. (Top 25 → 1st Quartile). For this, the buyer must ensure the market reputation & market share of this company is within the 1st Quartile. & also ensure that the accounts reflect a true & fair view.

Q 37

The below information is given about 3 companies.

Particulars	Co. A	Co. B	Co. C
Debt	1,00,000	50,000	-
Equity (Opening Balance)	1,00,000	1,50,000	2,00,000
Enterprise Value	2,00,000	2,00,000	2,00,000
EBIT	30,000	30,000	30,000
Applicable Interest Rate is 9%			
Applicable Tax Rate is 25%			

Co. A trades at a lower P/E Multiple than its peers Co. B and Co. C. The management of Co. A believes that the lower P/E of the company is not justified. The management team believes the market just doesn't understand its strategy or performance. Assuming book values are representative of Market Values.

Calculate the P/E and EV/ EBIT of each company and assess whether the management is right in their thought process.

Reference

P/E and EV/EBIT

What's New

Answer

	Co. A	Co. B	Co. C
EBIT	30,000	30,000	30,000
Interest	9,000	4,500	-
PBT	21,000	25,500	30,000
Tax	5,250	6,375	7,500
PAT	15,750	19,125	22,500
Opening Equity			
1,00,000			
1,50,000			
2,00,000			
Add: PAT during the year	15,750	19,125	22,500
CY Equity	1,15,750	1,69,125	2,22,500

Soln to Q37 Pg –

	Co.A	Co.B	Co.C
N1 EAT			
EBIT	30,000	30,000	30,000
Less: Int (9% of Debt)	9,000	4,500	–
EBT	21,000	25,500	30,000
Less: Tax @ 25%	5,250	6375	7,500
EAT	15,750	19,125	22,500
N2 Cl. Bal of Equity			
Op Bal	100000	150000	200000
(+) EAT	15,750	19,125	22,500
Cl. Bal	115,750	1,69,125	2,22,500

P/E Ratio =

$$\left[\frac{\text{Cl. Bal of Eq} = MV}{EAT}\right]$$

Co.A	Co.B	Co.C
$\frac{115750}{15750}$	$\frac{169125}{19125}$	$\frac{222500}{22500}$
= 7.35	= 8.85	= 9.89

EV/EBIT

EV = (Co. Bal of Eq + Debt)	(115750 + 100000) = 215750	(189125 + 30000) 219125	(222500 + ·—) 222500
EBIT	30000	30000	30000
EV/EBIT	7.19	7.30	7.42

Analysis:

The contention of Mgmt of Co. A that the mrkt doesn't understand its strategy or performance is incorrect.

This is because, Co. A's P/E is in line with its EV/EBIT Ratio.

The mrkt is giving lesser value to Co. A because it has higher Debt Equity ratio, which translates into higher financial risk.

P/E [MV of Equity / PAT]	7.3	8.8	9.9
Enterprise Value	2,15,750	2,19,125	2,22,500
EV / EBIT	7.2	7.3	7.4

The management's belief that the markets doesn't understand the reason for lower P/E of Co. A is incorrect. The EV/EBITDA multiple of Co. A is in line with the peers. The reason for the difference is that Co. A has much more debt relative to equity than the other companies. Possibly, if Co. A has the same level of D/E Ratio, the P/E would be higher and in line with peers. Except for very high growth companies, a company with higher debt relative to peers has a lower P/E ratio because more debt translates to higher risk for shareholders and a higher cost of equity. Therefore, each rupee of earnings (and cash flow to shareholders) is worth less to an investor.

Since Price-to-earnings ratio mixes capital structure and nonoperating items with expectations of operating performance, a comparison of P/Es is a less reliable guide to companies' relative value than a comparison of enterprise value (EV) to EBIT.

The following principles may help in choosing the right companies to compare:

(a) Use the right multiple, usually net enterprise value to EBITA or net enterprise value to NOPLAT. Although the P/E is widely used, it is distorted by capital structure and nonoperating gains and losses.

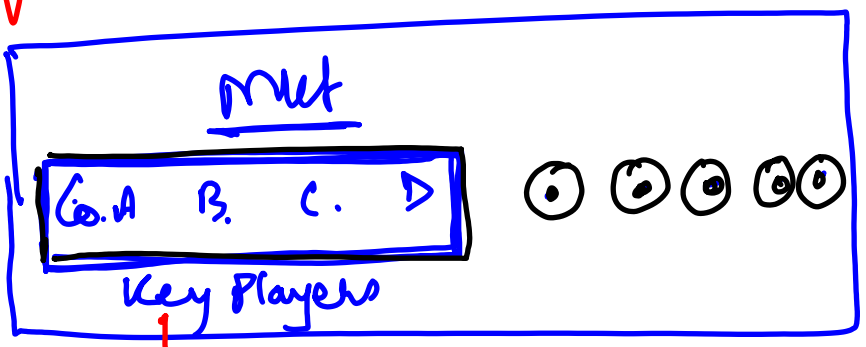
(b) Use forward estimates of earnings: Multiples using forward earnings estimates typically have much lower variation across peers, leading to a narrower range of uncertainty of value. They also embed future expectations better than multiples based on historical data.

(c) Adjust the multiple for non-operating items: Non-operating items embedded in reported EBITA, as well as balance sheet items like excess cash and pension items, can lead to large distortions of multiples.

(d) Use the right peer group, not a broad industry average: A good peer group must not only operate in the same industry, but also have similar prospects for ROIC and growth

(e) Value multi-business companies as a sum of their parts: Even companies that appear to be in a single industry will often compete in subindustries or product areas with widely varying return on invested capital (ROIC) and growth, leading to substantial variations in multiples.

NIY Herfindahl – Hirschman Index (HHI)



Competition Act – Competition Commission of India

Level of Concentration of mkt share in the hands of Key Players is ascertained using HHI.

$$HHI = \sum \left[\frac{\text{Sales}}{\text{Total mkt Sales}} \times 100 \right]^2 = \sum \left(\text{\% of mkt share} \right)^2$$

= Sum of sq of mkt share of key players

- $< 1000 \Rightarrow$ Not Concentrated
- ≥ 1000 & $\leq 1800 \Rightarrow$ moderately concentrated
- $> 1800 \Rightarrow$ Highly concentrated

If mkt is concentrated in the hands of key players, then the key players may merge together,

and they may exploit consumers or other sectors of economy.

This is also referred as antitrust issues and security or limiting the market power of other firms or formation of monopoly.

↳ Such mergers needs a clearance from Competition Commission.

Q38

The following is the list of key players in an industry along with their market shares.

Companies	A Ltd	B Ltd	C Ltd	D Ltd	E Ltd	F Ltd	G Ltd	H Ltd	Total
Mkt Share	25.0%	20.0%	15.0%	10.0%	10.0%	5.0%	7.5%	7.5%	100.0%

What would be the HHI for the industry?

What would be the HHI for the industry if C Ltd and D Ltd merge together? Assuming that the Government will trigger anti-trust issues if the change in HHI is over 100, **would** there likely be an anti-trust issue?

Reference

Herfindahl-Hirschman Index (HHI)

What's **New**

Answer

The HHI can be calculated as follows:

Companies	A Ltd	B Ltd	C Ltd	D Ltd	E Ltd	F Ltd	G Ltd	H Ltd	HHI
Mkt Share	25%	20%	15%	10%	10%	7.5%	7.5%	5%	
Squared Mkt Share	625	400	225	100	100	56.25	56.25	25	1587.5

Considering the score is between 1,000 and 1,800, the industry is moderately concentrated. The HHI can be calculated after the merger of C and D would be as follows:

Companies	A	B	C + D	E	F	G Ltd	H Ltd	HHI
Mkt Share	25%	20%	25%	10%	7.5%	7.5%	5%	
Squared Mkt Share	625	400	625	100	56.25	56.25	25	1887.5

Considering the score is exceeding 1,800, the industry is likely to be highly concentrated. Also, since the change in HHI is over 100, the regulator may challenge / investigate the merger.

Solⁿ to Q38 Pg —

HHI $\Rightarrow 25^2 + 20^2 + 15^2 + 10^2 + 10^2 + 5^2 + 7.5^2 + 7.5^2$

$\Rightarrow 625 + 400 + 225 + 100 + 100 + 25 + 56.25 + 56.25$

$\Rightarrow 1587.5$

If is between 1000 & 1800 → Market is moderately concentrated

If C&D merge together

HHI : $25^2 + 20^2 + (15+10)^2 + 10^2 + 5^2 + 7.5^2 + 7.5^2$

A B C+D E F G H

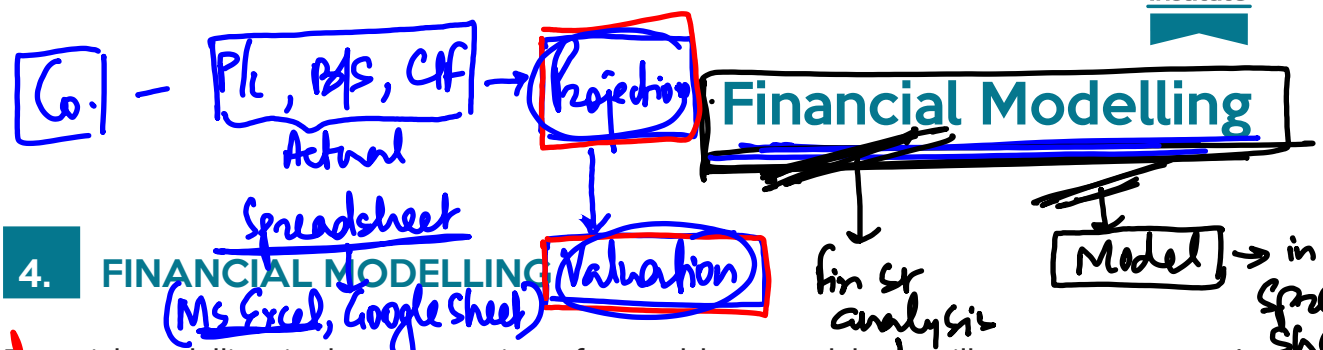
$= 625 + 400 + 625 + 100 + 25 + 56.25 + 56.25$

$= 1887.5$

If is higher than 1800, ie. mkt is highly concentrated in the hands of key players.

As HHI is over 100, the regulator may challenge the merger.

[Please complete the SN]



4. FINANCIAL MODELLING

Financial modelling is the construction of spreadsheet models that illustrate a company's likely financial results in quantitative terms. Spreadsheets (e.g. MS Excel) are used for creating Financial Models. In other words, "spreadsheet" is the medium and "model" is an end-product.

Most financial statement analysis tasks are undertaken with a forward looking decision in mind and much of the time it is useful to summarize the view developed in the analysis with an explicit forecast.

Prospective analysis includes two tasks forecasting and valuation that together represent approaches to explicitly summarizing the valuer's forward-looking views.The best way to forecast future performance is to do it comprehensively, producing not only profit in lost forecast but also forecast of cash flows and the balance sheet. A comprehensive approach is useful even in cases where one might be interested primarily in the single facet of performance because it guards against unrealistic implicit assumptions.

4.1 Attributes of good Financial Models

a. **Realistic:** most models you develop will be directlyor indirectlyused to make some decisions. The output of the model must therefore be realistic. This might sometimes be time consuming but is still necessary.

b. **Error-free:** You must extensively test a model to make sure that it is error free. While some errors are obvious and can be identified since it may not give the desired output. However, some errors may be subtle and maybe harder to predict. Therefore, it is important to do a review of the financial model before the output is reported.

c. **Flexible:** In the planning stage you should try to anticipate the different types of questions the model is likely to answer. The more different types of questions a model can answer, the mood useful it is.

d. **Easy to use:** Is important to ensure that the model is easy to use by any user. While fancy looking dashboards may make the model look attractive it is not necessary.

e. **Easily understandable formula:** Many excel models, especially large ones common often include formula that go on for lines. It is advisable to shorten the formula, use short descriptive cell and range names to make formulas readable. Sometimes professionals also use VBA functions to improve the quality and appearance of calculations

f. **Minimum hard-coding:** hard coded values that is values embedded in the formulas are difficult to change especially in large models because there is always a danger of missing them

in few places. It is advisable that the input cells (sales with manual inputs of numbers or data) and formulated cells should be clearly distinguished in the entire model.

Good documentation: models should have appropriate documentation such as assumptions, inputs outputs model description among others.

4.2 Financial Statement Forecasting

The objective of financial statements modelling is to create proforma financial statements in order to make financial projections that can be used to make decisions. Mansion statement models are widely used for a variety of purposes including business valuation.

Financial statement modelling involves modelling all the 3 primary financial statements the income statement balance sheet and the cash flow statement. The cash flow statement is usually derived from the other two.

The key steps in developing a financial statement model are:

1. expected uses of the model and the required output.
2. collect historical data for the company, its industry, and its major competitors
3. understand the companies plan and develop a comprehensive set of modelling assumptions
4. build the model and debug it
5. improve the model based on feedback.

Using historical data: Financial statement forecasting models start with at least some historical financial statements of the company. Usually, 3 to 5 years historical financial statements may be useful to produce projections based on historical data. The statement should be generally consistent it is not necessary that every number would be correct to the last rupee. Understanding the footnotes may also be helpful in preparing financial forecasts also, some historical data for the companies industry and its major competitors will also be helpful in creating realistic forecasts and benchmarks. Next getting industry forecasts for market growth price trends expected GDP growth interest rates may be very useful.

Company's plans: Understanding the company's plans are critical in preparing the financial models. While financial statement forecasts can be made using historical data and basic financial analysis, it may not be useful for anybody if the companies plans are not incorporated into the financial model. For example, a company may be considering building a new warehouse to expand its sales. This might require investment in not just a warehouse but in additional working capital as well. Search increase in capital expenditure and working capital might lead to increased sales increased cost of goods sold increased expenses higher profits and other balance sheet items as well. Unless you have a good control on these numbers your forecasts will not be useful.

Common-size statements: common size statements are very helpful in creating financial models. In case of a common size statement every item on the profit and loss statement is

taken as a percentage of the total revenue. Similarly every item on the balance sheet is taken as a percentage of the total assets. This helps a valuer understand the relationship between different items in the financial statements. The biggest benefit of a common-size analysis is that it can let a valuer identify large or drastic changes in a firm's financials. Rapid increases or decreases will be readily observable, such as a rapid drop in reported profits during one quarter or year. This also helps a valuer compare the performance of different companies irrespective of its size.

Example 1:

The standalone financial statements of Maruti Suzuki for two years are as follows:

Balance Sheet as at (₹ Cr)	Maruti Suzuki Standalone	
	31-Mar-X2	31-Mar-X1
ASSETS		
1. Non Current Assets		
Property, plant and equipment	12,916.20	12,163.10
Capital work in progress	1,252.30	1,006.90
Goodwill		
Other intangible assets	373.00	346.90
Financial assets		
Investments	26,214.70	18,875.40
Loans and advances	0.30	0.40
Other financial assets	23.80	23.10
Non current assets (net)		
Other non current assets	1,603.10	1,678.20
	42,383.40	34,094.00
2. Current Assets		
Inventories	3,262.20	3,132.10
Financial assets		
Investments	2,013.70	1,056.80
Trade receivables	1,199.20	1,322.20
Cash and cash equivalents	13.10	39.10
Loans and advances	2.50	3.10
Other financial assets	95.00	147.80
Current tax assets (net)	485.40	485.40
Other current assets	1,538.80	1,659.50
	8,609.90	7,846.00
Total Assets	50,993.30	41,940.00

EQUITY AND LIABILITIES		
EQUITY		
Equity share capital	151.00	151.00
Other equity	36,020.10	29,733.20
	36,171.10	29,884.20
LIABILITIES		
1. Non Current liabilities		
Provisions	21.90	14.80
Deferred tax liabilities (net)	464.00	194.30
Other non current liabilities	1,105.00	807.50
	1,590.90	1,016.60
2. Current liabilities		
Financial liabilities		
Borrowings	483.60	77.40
Trade payables	8,367.30	7,407.30
Other financial liabilities	1,302.70	1,197.10
Provisions	449.00	398.90
Current tax liabilities (net)	803.60	795.60
Other current liabilities	1,825.10	1,162.90
	13,231.30	11,039.20
Total equity and liabilities	50,993.30	41,940.00

Statement of Profit & Loss for the year ended	31-Mar-X2	31-Mar-X1
Income from operations	77,266.20	65,054.60
Other income	2,279.80	1,461.00
Total Income	79,546.00	66,515.60
Expenses		
Cost of materials consumed	42,629.60	35,483.90
Purchases of products for sale	4,482.10	3,206.60
Changes in inventories of finished goods, work-in-progress, and products for sale	-380.10	6.90
Excise duty	9,231.40	7,516.50
Employee benefits expense	2,331.00	1,978.80
Finance costs	89.40	81.50
Depreciation and amortisation expense	2,602.10	2,820.20
Other expenses	8,722.80	8,037.70
Amount capitalised / Vehicles for own use	-103.60	-60.20
Total Expenses	69,604.70	59,071.90

Profit/(loss) before exceptional items and tax	9,941.30	7,443.70
Exceptional items		
Profit/(loss) before Tax	9,941.30	7,443.70
Tax Expense		
Current tax	2,331.70	2,041.40
Deferred tax	271.90	38.00
Total tax expense/(credit)	2,603.60	2,079.40
Profit/(loss) for the year from continuing operations	7,337.70	5,364.30
Other comprehensive income/(loss)	221.70	7.00
Total comprehensive income/(loss) for the year	7,559.40	5,371.30

The following is the common size statement of Tata Motors with Maruti Suzuki for Year X2.

Balance Sheet as at (₹ Cr)	Tata Motors 31-Mar-X2	Common size	Maruti Suzuki 31-Mar-X2	Common size
ASSETS				
1. Non-Current Assets				
Property, plant and equipment	17,364.77	29.66%	12,916.20	25.33%
Capital work in progress	1,870.93	3.20%	1,252.30	2.46%
Goodwill	99.09	0.17%		0.00%
Other intangible assets	2,773.69	4.74%	373.00	0.73%
Intangible assets under development	5,366.03	9.17%		0.00%
Investment in subsidiaries & associates	14,778.87	25.25%		0.00%
Financial assets				
Investments	528.37	0.90%	26,214.70	51.41%
Loans and advances	389.61	0.67%	0.30	0.00%
Other financial assets	196.32	0.34%	23.80	0.05%
Non-current assets (net)	724.58	1.24%		0.00%
Other non-current assets	1,856.28	3.17%	1,603.10	3.14%
	45,948.54	78.50%	42,383.40	83.12%
2. Current Assets				
Inventories	5,504.42	9.40%	3,262.20	6.40%
Financial assets				
Investments	2,400.92	4.10%	2,013.70	3.95%
Trade receivables	2,128.00	3.64%	1,199.20	2.35%
Cash and cash equivalents	286.06	0.49%	13.10	0.03%
Loans and advances	231.35	0.40%	2.50	0.00%
Other financial assets	100.76	0.17%	95.00	0.19%
Current tax assets (net)	129.49	0.22%	485.40	0.95%

Other current assets	1,807.06	3.09%	1,538.80	3.02%
	12,588.06	21.50%	8,609.90	16.88%
Total Assets	58,536.60	100.00%	50,993.30	100.00%
EQUITY AND LIABILITIES				
EQUITY				
Equity share capital	679.22	1.16%	151.00	0.30%
Other equity	20,129.93	34.39%	36,020.10	70.64%
	20,809.15	35.55%	36,171.10	70.93%
LIABILITIES				
1. Non-Current liabilities				
Financial liabilities				
Borrowings	13,686.09	23.38%		0.00%
Other financial liabilities	1,123.66	1.92%		0.00%
Provisions	850.71	1.45%	21.90	0.04%
Deferred tax liabilities (net)	97.95	0.17%	464.00	0.91%
Other non-current liabilities	321.24	0.55%	1,105.00	2.17%
	16,079.65	27.47%	1,590.90	3.12%
2. Current liabilities				
Financial liabilities				
Borrowings	5,375.52	9.18%	483.60	0.95%
Trade payables	7,015.21	11.98%	8,367.30	16.41%
Other financial liabilities	6,844.43	11.69%	1,302.70	2.55%
Provisions	467.98	0.80%	449.00	0.88%
Current tax liabilities (net)	80.64	0.14%	803.60	1.58%
Other current liabilities	1,864.02	3.18%	1,825.10	3.58%
	21,647.80	36.98%	13,231.30	25.95%
Total equity and liabilities	58,536.60	100.00%	50,993.30	100.00%

Statement of Profit & Loss for the year ended	31-Mar-X2		31-Mar-X2	
Income from operations	49,100.41	98.05%	77,266.20	97.13%
Other income	978.84	1.95%	2,279.80	2.87%
Total Income	50,079.25	100.00%	79,546.00	100.00%
Expenses				
Cost of materials consumed	27,654.40	55.22%	42,629.60	53.59%
Purchases of products for sale	3,945.97	7.88%	4,482.10	5.63%
Changes in inventories of finished goods, work-in- progress, and products for sale	-251.43	-0.50%	-380.10	-0.48%
Excise duty	4,736.41	9.46%	9,231.40	11.61%

Employee benefits expense	3,558.52	7.11%	2,331.00	2.93%
Finance costs	1,590.15	3.18%	89.40	0.11%
Foreign exchange (gain)/loss (net)	-252.45	-0.50%		0.00%
Depreciation and amortisation expense	2,969.39	5.93%	2,602.10	3.27%
Product development/Engineering expenses	454.48	0.91%		0.00%
Other expenses	8,697.42	17.37%	8,722.80	10.97%
Amount capitalised / Vehicles for own use	-941.55	-1.88%	-103.60	-0.13%
Total Expenses	52,161.31	104.16%	69,604.70	87.50%
Profit/(loss) before exceptional items and tax	-2,082.06	-4.16%	9,941.30	12.50%
Exceptional items	338.71	0.68%		0.00%
Profit/(loss) before Tax	-2,420.77	-4.83%	9,941.30	12.50%
Total tax expense/(credit)	59.22	0.12%	2,603.60	3.27%
Profit/(loss) for the year from continuing operations	-2,479.99	-4.95%	7,337.70	9.22%
Other comprehensive income/(loss)	95.48	0.19%	221.70	0.28%
Total comprehensive income/(loss) for the year	-2,384.51	-4.76%	7,559.40	9.50%

Identifying independent and dependent variables: There is no one right way to forecast any line item. The method you choose depends on your understanding of the business and what do you think will produce good forecasts. but most often used is the sales driven forecasting. Most financial statement forecasting models use sales growth rate as a key independent variable. To decide which line items can be projected as a percentage of sales, the common size statements are used to project the expenses on the profit and loss statement.

If you look at the common size statements for a company for the past few years you will be able to spot some stable relationships as well as some trends and you can use them at least for the first round of forecasting. You may be able to find some such relationships in other financial indicators as well and use that information to forecast certain line items you should always try to confirm these relationships using industry data and use a combination of industry numbers and company numbers to decide numbers in any forecast sometimes management we have its own target such as target debt to equity ratio dividend growth rate and so on. These assumptions known as policy assumptions should be documented in the list of assumptions.

Some line items do not flow through sales. For example the interest expense is a function of the loan that the company might have borrowed. The depreciation amount is a function of the total amount of fixed assets deployed by the company and their depreciation rates depreciation methods and the age of the fixed assets. Taxes, as we all know is a percentage of profit before tax as specified by the government.

Even if you forecast all the line items reasonably well, balance sheet is not likely to balance. You may use a plug to balance the balance sheet. The items that may be normally used as plug includes cash and marketable securities, short term debt, long term debt equity. In case of substantial funding requirements, the company might need additional funds either in the form of debt or equity and thus it may have to be used as a plug. alternatively cash and marketable

securities are used plug under normal circumstances. In rare circumstances when the company policy specifies the amount of cash to be kept, then additional funds may have to be deployed as investments and shortfall may have to be borrowed and the balance may have to be used as a plug. You should be careful that in the balance sheet there should not be more than one plug figure.

Q1

C2D Software Ltd is a software company. The company has shared the following financials with you.

Statement of Profit & Loss	31-Mar-X0	31-Mar-X1
Revenue from Operations	48,21,92,172	62,52,80,155
Other income	4,34,921	53,89,037
Total Revenue	48,26,27,093	63,06,69,191
Employee Benefit Expenses	34,17,59,823	43,86,61,527
Other Operating Expenses	12,84,95,391	17,82,56,640
Operating Expenses	47,02,55,213	61,69,18,166
EBIDTA	1,23,71,879	1,37,51,025
Less :Depreciation	72,78,205	90,63,847
EBIT	50,93,674	46,87,178
Less : Finance costs	3,24,123	2,12,055
Profit/(Loss) before Tax	47,69,552	44,75,122
Tax	14,30,865	13,42,537
Profit After Tax	33,38,686	31,32,586
Liabilities		
Share Capital (Face Value ₹ 1)	1,00,000	1,00,000
Reserves & Surplus	5,24,23,871	5,55,56,457
Shareholders' Funds	5,25,23,871	5,56,56,457
Long term borrowings	11,29,548	-
Total Non-Current Liabilities	11,29,548	-
Trade Payables	76,00,020	2,40,33,132
Other Current Liabilities	74,56,806	9,65,48,015
Short Term Provisions	1,82,92,000	8,02,340
Total Current Liabilities	3,33,48,826	12,13,83,488
Total Liabilities and Equity	8,70,02,246	17,70,39,944
Assets		
Property, Plant & Equipment	2,91,98,966	3,80,07,820
Total Non-Current Assets	2,91,98,966	3,80,07,820

Current Assets		
Trade Receivables	44,26,901	1,55,835
Oher Current Assets	2,42,25,458	4,70,73,342
Loans & Advances	2,88,11,397	6,48,98,260
Cash & Bank balances	3,39,524	2,69,04,687
Total Current Assets	5,78,03,281	13,90,32,124
Total Assets	8,70,02,246	17,70,39,944

As part of its restructuring exercise, the company is planning a major turnaround. You are **hired** as a valuer and the company does not have projected financial statements. However, the management has shared the following information with you to assist in **preparing** the financial statement forecasts following by the valuation.

1. The projected financial statements can be prepared for the next 5 years i.e. till FY 20X6.
2. The revenue growth is expected to be 10 % till FY 2024 and then at 7 % for FY 20X5 and 20X6.
3. Operating expenses as a percentage of revenue is expected to be 37 % while Employee benefit expenses is expected to be 50 % of Revenues. Assume the tax rate to be 30 %.
4. The company expects to collect all its Revenues from customers within 45 days of billing while it expects to pay to its vendors within 70 days.
5. Other Current Assets would be 5 % of Revenues while Other Current Liabilities would be 10 % of Operating Expenses.
6. The company expects to spend ₹ 20,00,000 annually on Capital Expansion for the next 5 years.
7. The Property, Plant & Equipment is subject to a depreciation rate of 25.89 % on WDV basis.
8. Loans and Advances, and Short term Provisions are not likely to change over the explicit forecast period.
9. Once the financial forecast are prepared, the following information may be relevant for valuation purposes:

As on valuation date, the long term Government bond yield is 6 %.

Market Return over the long period is 15 %.

Estimated Beta based on comparable companies is 1.25.

The company does not expect to have any debt in the long run.

In the perpetual period, Depreciation is expected to offset Capital expenditure and Change in Working Capital is expected to be 1 % of change in Revenue in the explicit forecast period.

The terminal growth in Free Cash Flows is estimated at 4 %, in line with long term inflation of the country.

Reference
Financial Modelling

What's **New**
Financial Statement Forecast

Answer

The forecasted financial statements are prepared as follows: (₹ in lakhs)

Statement of Profit & Loss	FY x1 Actual	FY x2 Projected	FY x3 Projected	FY x4 Projected	FY x5 Projected	FY x6 Projected
Revenue from Operations	6,252.80	6,878.08	7,565.89	8,322.48	8,905.05	9,528.41
Revenue growth		10%	10%	10%	7%	7%
Other income	53.89	-	-	-	-	-
Total Revenue	6,306.69	6,878.08	7,565.89	8,322.48	8,905.05	9,528.41
Employee Benefit Expenses	4,386.62	3,439.04	3,782.94	4,161.24	4,452.53	4,764.20
% of Revenues		50%	50%	50%	50%	50%
Other Operating Expenses	1,782.57	2,544.89	2,799.38	3,079.32	3,294.87	3,525.51
% of Revenues		37%	37%	37%	37%	37%
Operating Expenses	6,169.18	5,983.93	6,582.32	7,240.56	7,747.40	8,289.71
EBIDTA	137.51	894.15	983.57	1,081.92	1,157.66	1,238.69
Less :Depreciation (Note 1)	90.64	103.58	81.94	65.90	54.02	45.21
EBIT	46.87	790.57	901.62	1,016.02	1,103.64	1,193.48
Less: Finance costs	2.12	-	-	-	-	-
Profit/(Loss) before Tax	44.75	790.57	901.62	1,016.02	1,103.64	1,193.48
Tax [@ 30% on PBT]	13.43	237.17	270.49	304.81	331.09	358.04
Profit After Tax	31.33	553.40	631.14	711.21	772.55	835.44

(₹ in lakhs)

Balance Sheet	FY x1 Actual	FYx2 Projected	FYx3 Projected	FYx4 Projected	FYx5 Projected	FYx6 Projected
Liabilities & Equity						
Share Capital	1.00	1.00	1.00	1.00	1.00	1.00
Reserves & Surplus	555.56	1,108.96	1,740.10	2,451.31	3,223.86	4,059.30
Shareholders' Funds	556.56	1,109.96	1,741.10	2,452.31	3,224.86	4,060.30
Trade Payables	240.33	488.06	536.87	590.55	631.89	676.13
Other Current Liabilities	965.48	598.39	658.23	724.06	774.74	828.97
Short Term Provisions	8.02	8.02	8.02	8.02	8.02	8.02
Total Current Liabilities	1,213.83	1,094.48	1,203.12	1,322.63	1,414.66	1,513.12
Total Liabilities and Equity	1,770.40	2,204.44	2,944.22	3,774.95	4,639.51	5,573.42
Assets						
Property, Plant & Equipment (Note 1)	380.08	296.50	234.56	188.65	154.63	129.42
Total Non Current Assets	380.08	296.50	234.56	188.65	154.63	129.42
Current Assets						
Investments	-	-	371.31	1,079.00	1,847.51	2,667.44
Trade Receivables	1.56	847.98	932.78	1,026.06	1,097.88	1,174.73
Oher Current Assets	470.73	343.90	378.29	416.12	445.25	476.42
Loans & Advances	648.98	648.98	648.98	648.98	648.98	648.98
Cash & Bank balances (Note 2)	269.05	67.07	378.29	416.12	445.25	476.42
Total Current Assets	1,390.32	1,907.94	2,709.67	3,586.29	4,484.88	5,444.00
Total Assets	1,770.40	2,204.44	2,944.22	3,774.95	4,639.51	5,573.42

Note 1: Depreciation calculation

(₹ in lakhs)

		FY X2	FY X3	FY X4	FY X5	FY X6
General PP&E						
Opening WDV		380.08	296.50	234.56	188.65	154.63
Add: Net Additions (Assumed beginning of year)		20.00	20.00	20.00	20.00	20.00
Sub-total		400.08	316.50	254.56	208.65	174.63
Total Depreciation	25.89%	103.58	81.94	65.90	54.02	45.21
Closing WDV		296.50	234.56	188.65	154.63	129.42

Note 2: Cash and Short term Investments

For FYx2, the cash balance is a plug figure as it is less than 5% of Total Revenues. For the remaining years, the Cash balance is 5 % of Total Revenues and any balance amount is invested for short term. Note that it would be inappropriate to keep either Cash or Investments as a negative figure.

Note 3: Calculation of Cost of Equity and Discount Rate

Risk Free Rate of Return	6.00%
Market Return	15.00%
Beta	1.25
Unsystematic Risk Premium	0%
Cost of Equity	17.25%
Discount Rate	17.25%

Note 4: Calculation of Investment in Non Cash Working Capital (₹ in lakhs)

Year	FY X1	FY X2	FY X3	FY X4	FY X5	FY X6
Total Current Assets	1,390.32	1,907.94	2,709.67	3,586.29	4,484.88	5,444.00
Less: Cash and Bank Balances	269.05	67.07	378.29	416.12	445.25	476.42
Non Cash Current Assets (A)	1,121.27	1,840.87	2,331.37	3,170.17	4,039.63	4,967.58
Current Liabilities	1,213.83	1,094.48	1,203.12	1,322.63	1,414.66	1,513.12
Short term Provisions	8.02	8.02	8.02	8.02	8.02	8.02
Adjusted Current Liabilities (B)	1,205.81	1,086.45	1,195.10	1,314.61	1,406.63	1,505.10
Non Cash Working Capital (A – B)	-84.54	754.42	1,136.27	1,855.56	2,633.00	3,462.48
Change in Non Cash Working Capital		838.95	1,136.27	1,101.15	1,496.72	1,606.92

Note 5: Calculation of Present Value of Terminal Value (₹ in lakhs)

Calculation of FCFF	Terminal (₹)	
Net profit After Tax	[Same as FY x6]	835.44
Plus: Net Non Cash Charges	[same as FY x6]	20.00
Plus: Post tax Interest Expense	[NIL, since no Debt]	-
Less: Investment in Fixed Capital	[Same as Depreciation]	20.00
Less: Investment in Non-Cash Working Capital [9,528.41 – 8,905.05] × 1%		6.23
Free Cash Flow to Firm		829.20
Terminal Value [FCFF × (1 + gn) / (WACC – gn)] [829.20 × (1.04) / (0.1725 - 0.04)]		6,508.46
PV of FCFF including Terminal Value [TV / (1+g)^n] [6,508.46 / (1.1725)^5]		2,937.07

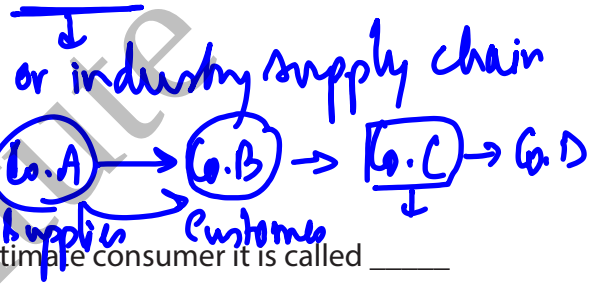
Calculation of Free Cash Flows to the Firm and Value per share (₹ in lakhs)

Calculation of FCFF (₹ Lakhs)	FY X1	FY X2	FY X3	FY X4	FY X5	FY X6
Net profit After Tax		553.40	631.14	711.21	772.55	835.44
Plus: Net Non Cash Charges		103.58	81.94	65.90	54.02	45.21
Plus: Post tax Interest Expense		-	-	-	-	-
Less: Capital Expenditure		20	20.00	20.00	20.00	20.00
Less: Change in NC Working Capital (N4)		838.95	381.86	719.29	777.44	829.48
Free Cash Flow to Firm		-181.97	311.22	37.83	29.13	31.17
Terminal Value		-	-	-	-	-
PV of FCFF including Terminal Value		-155.20	226.38	23.47	15.41	14.07
PV of Cash Flows (explicit period)	124.13					
PV of Terminal Value (Note 5)	2,937.07					
Firm Value	3,061.20					
Less: Debt	-					
Add: Cash	269.05					
Value of Equity (₹ lakhs)	3,330.24					
Value per share (₹)	3,330.24					

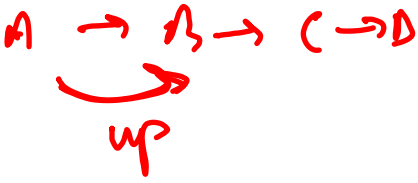
Multiple Choice Questions

1. When merger is between two companies that are into the same products or services, it is called a _____
   (a) horizontal merger
   (b) vertical merger
   (c) Conglomerate merger
   (d) diagonal merger

2. In a _____ , the companies are in different points in the value chain
   (a) horizontal merger
   (b) vertical merger
   (c) Conglomerate merger
   (d) diagonal merger

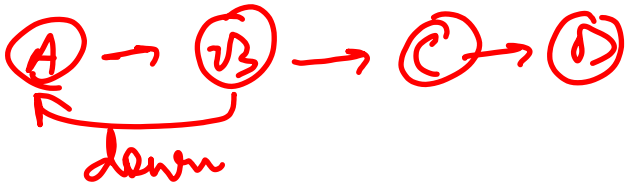


3. If the acquirer moves up the value chain towards the ultimate consumer it is called _____
   (a) vertical merger
   (b) Conglomerate merger
   (c) Forward integration
   (d) Backward integration



4. An ice cream manufacturer acquires restaurants where it can serve ice cream. It is an example of which type of merger ?
   (a) vertical merger
   (b) Conglomerate merger
   (c) Forward integration
   (d) Backward integration

5. If the acquirer moves down the value chain towards raw materials it is called _____
   (a) Conglomerate merger
   (b) Backward integration
   (c) horizontal merger
   (d) diagonal merger



6. A _____ is one where the merging companies are neither into the same products or services, nor in the same business
   (a) Conglomerate merger
   (b) vertical merger

(c) Diagonal merger

(d) Both a and c

7. In 2018, Walmart acquired 77 percent stake in Flipkart India for USD 16 billion. Is it an example of merger or acquisition?

(a) Acquistion

(b) Merger

(c) Both

(d) None of these

8. Acquisitions create value when the cash flows of the combined companies are greater than the sum of their individual values. Is it true ?

(a) False

(b) True

(c) May be

(d) None of these

9. the purchase price of an acquisition will nearly always be_____ than the intrinsic value of the target company

(a) Higher

(b) Lower

(c) Constant

(d) None of these

10. The net present value of the cashflows that will result from improvements made when the companies are combined is known as

(a) Intrinsic value

(b) Market value

(c) Synergy value

(d) Purchase value

11. Value gap is the difference between _____ and _____

(a) Synergy value and purchase price

(b) Intrinsic value and purchase price

(c) Market value and purchase price

(d) Intrinsic value and Synergy value

12. _____ refers to the excess that an acquirer pays over the market trading value of the target company's shares being acquired.

(a) purchase premium

(b) acquisiton premium (target co. recd)

(c) Both

(d) None of these

13. _____ are those where an acquirer intends to run the company themselves. There are significant changes in the way the company operates.

(a) Financial Acquisition

(b) Strategic acquisitions

(c) Hostile takeover

(d) None of these

14. _____ are often done by Private Equities, Venture Capitalists and portfolio companies who acquirer a company purely for their value and normally do not make significant operational changes

(a) Financial Acquisition

(b) Strategic acquisitions

(c) Hostile takeover

(d) None of these

15. When the target's management or Board of Directors are not receptive to the idea of a merger, the acquirer may take the deal directly to the target's shareholders through a tender offer or a proxy fight is known as

(a) Hostile Merger

(b) Friendly Merger

(c) Strategic acquisitions

(d) Financial Acquisition

16. In a tender offer:

(a) The acquirer invites target shareholders individually to submit their shares for a payment

(b) The payment can be in the form of cash, shares of the acquirer, other securities, or a combination of cash and securities

(c) Both a and b

(d) None of these

17. In a proxy fight:

(a) The acquirer approaches target shareholders to vote for an acquirer-nominated board of directors)

(b) Proxy solicitation is approved by regulators and then proxies are mailed directly to target shareholders

(c) Both a and b

(d) None of these

18. _____ grant a company the right to issue stock options to existing shareholders enabling them to purchase additional shares of stock at significantly discounted prices.

(a) Poison pills

(b) Poison puts

(c) Share repurchase

(d) None of these

19. _____ give target company bondholders the right to sell their bonds back to the target at a pre-specified redemption price in the event of a takeover.

(a) Poison pills

(b) Poison puts

(c) Share repurchase

(d) None of these

20. If the combined entity is more than the sum of its parts, the transaction is said to have created _____

(a) Combined Value

(b) Net Worth

(c) Synergies

(d) Economic gains

21. If the Value of target Co. is ₹ 500 Million and the value of acquiring company is ₹ 800 Million. Present value of cost savings if the two companies are merged together is ₹ 100 million. Acquiring company expects the cost of integration as ₹ 80 million and the shareholders of Target Co. are expecting a deal premium to be paid of 15 percent over their company's value. what is the value of Combined entity?

(a) ₹ 1,400 million

(b) ₹ 1,345 million

(c) ₹ 1,445 million

(d) ₹ 1,540 million

22. The merger of one or more companies with another company or the merger of two or more companies to form one company is called _____

(a) Demerger

(b) Acquisition

(c) Amalgamation

(d) Slump sale

23. The transfer of one or more undertaking for a lump sum consideration without values being assigned to the individual assets and liabilities is known as _____

    (a) Demerger

    (b) Acquisition

    (c) Amalgamation

    (d) Slump sale

24. The Income tax Act, 1961 define ''amalgamation'' under Section

    (a) 1(1B)

    (b) 2(1B)

    (c) 3(B)

    (d) 2(2B)

25. The difference between the current market value of a firm and the capital contributed by investors is

    (a) Economic Value Added

    (b) Market Value Added

    (c) Enterprise Value Added

    (d) Book value Added

26. Future retail Ltd and Reliance Ltd go into liquidation and a new company Reliance Retail Ltd is formed. It is a case of:

    (a) Absorption

    (b) External reconstruction

    (c) Amalgamation)

    (d) Take over

27. Reliance Ltd takes over the business of Future retails. It is a case of:

    (a) Absorption

    (b) External reconstruction

    (c) Amalgamation)

    (d) Take over

28. Future retail Ltd is liquidated and a new company Future Enterprises is formed to take over its business. It is a case of:

    (a) Absorption

    (b) External reconstruction

    (c) Amalgamation)

    (d) Take over

29. Why Amalgamation is known to be in the nature of merger:
    (a) There is transfer of all assets & liabilities at book values)
    (b) Issue of equity shares discharged the Purchase consideration wholly (except cash for fractional shares)
    (c) Equity shareholders holding 90% equity shares in Transferor Company become shareholders of Transferee Company)
    (d) All of the above

30. Net assets minus capital reserve is:
    (a) Goodwill
    (b) General reserves
    (c) Purchase consideration
    (d) None of the above

31. 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

32. If purchase consideration is less 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

33. The difference between the purchase consideration and net asset is adjusted in case of merger is adjusted with:
    (a) Goodwill account
    (b) Capital reserve account
    (c) General reserve account
    (d) None of the above

34. In the books of Transferor Company, shares received from the new company are recorded at:
    (a) Face value
    (b) Market Price

(c) Intrinsic value of shares

(d) None of the above

35. Intangible assets are treated as _____ assets.

(a) Fictitious assets

(b) Fixed assets

(c) Cash and cash equivalents)

(d) Marketable securities

36. _____ is a measure of value of which tells whether a company is able to generate returns that exceed the cost of capital employed.

(a) Economic Value Added

(b) Market Value Added

(c) Enterprise Value Added

(d) Book value Added

37. If a bond of a company is trading at a premium in the market then its yield-to-maturity will be _____ its current yeild.

(a) more than

(b) less than

(c) same as

(d) no effect on

38. Net operating Profit After Taxes is called _____.

(a) Economic Value Added

(b) Market Value Added

(c) Enterprise Value Added

(d) Book value Added

39. EVA is _____ related to shareholder's value .

(a) directly

(b) inversely

(c) not related

(d) None of the above

40. Which is not a, human-capital related intangible assets?

(a) Trained workforce

(b) Employment agreements

(c) Union Contracts

(d) Design patent

41. X ltd has ₹ 100 crores worth of common equity on its balance sheet comprising of 50 lakhs shares. The company's market value Added (MVA) is ₹ 24 crores. What is company's stock price?

(a) 230
(b) 238
(c) 248
(d) 264

42. A firm's current assets and current liabilities are 1,600 and 1,000 respectively . How much can it borrow on a short-term basis without reducing the current ratio below 1.25?

(a) 1,000
(b) 1,200
(c) 1,400
(d) 1600

43. Identify which of the following is not a financial liability

(a) X ltd has 1 lakh ₹ 10 ordinary shares issued
(b) X ltd has 1 lakh 8% ₹ 10 redeemable preference shares issued
(c) X Ltd has ₹ 2,00,000 of 6% bonds issued
(d) Both (A) and (B)

44. An investment is the risk free when actual returns are always the expected returns.

(a) equal to
(b) less than
(c) more than
(d) depends upon circumstances

45. which of the followings is not a attribute of good financial models

(a) Realistic
(b) Flexible
(c) Hard coded values
(d) Good documentation

46. When amalgamation is in the nature of merger, the accounting method to be followed is:

(a) Equity method
(b) Purchase method
(c) Pooling of interests method

(d) Consolidated method

47. What are the tax consequences of a taxable merger ?

(a) Selling shareholders can defer any capital gain until they sell their shares in the merged company

(b) Depreciation tax shield is unchanged by merger

(c) Selling shareholders must recognize any capital gain

(d) Depreciable value of assets will remain unchanged

48. _____ give target company bondholders the right to sell their bonds back to the target at a pre-specified redemption price in the event of a takeover.

(a) Poison pills

(b) Poison puts

(c) Share repurchase

(d) None of these

49. Future retail is liquidated and a new company Future Enterprise is formed to take over its business. It is a case of:

(a) Absorption

(b) External reconstruction

(c) Amalgamation

(d) Take over

50. If the Value of target Co. is ₹ 500 Million and the value of acquiring company is ₹ 800 Million. Present value of cost savings if the two companies are merged together is ₹ 100 million. Acquiring company expects the cost of integration as ₹80 million and the shareholders of Target Co. are expecting a deal premium to be paid of 15 percent over their company's value. What is the value of Combined entity?

(a) ₹ 1,400 million

(b) ₹ 1,345 million

(c) ₹ 1,445 million

(d) ₹ 1,540 million

51. If the divestiture value is greater than the present value of the expected cash flows, the value of the divesting firm will _____.

(a) increase on the divestiture

(b) decrease on the divestiture

(c) remain same on the divestiture

(d) None of the above

52. _____ are often done by Private Equities, Venture Capitalists and portfolio companies who acquirer a company purely for their value and normally do not make significant operational changes.

(a) Financial Acquisition

(b) Strategic acquisitions

(c) Hostile takeover

(d) None of these

53. 8% bond of Face Value ₹ 100 is selling for ₹ 96. What would be its Current Yield?

(a) 8%

(b) 12%

(c) 8.33%

(d) None of the above

Answer :

1	a	13	b	25	b	37	b
2	b	14	a	26	c	38	a
3	c	15	a	27	a	39	a
4	c	16	c	28	b	40	d
5	b	17	c	29	d	41	c
6	d.	18	a	30	c	42	c
7	a	19	b	31	a	43	a
8	b	20	c	32	b	44	a
9	a	21	a	33	c	45	c
10	c	22	c	34	b	46	c
11	b	23	d	35	b	47	c
12	a	24	b	36	a		

48	(b)	Poison puts means that if the acquirer takes over the target, it would need to raise a substantial amount of cash to refinance the target's debt.
49	(b)	This is the case of external reconstruction. External reconstruction means where the company goes into liquidation, to form a new company.
50	(a)	
51	(a)	
52	(a)	
53	(a)	