

9

Valuation

BASIC CONCEPTS

CONCEPT OF VALUATION

Valuation means measurement of value in monetary term.

Different measurement bases are:

- (a) *Historical cost.* Assets are recorded at the amount of cash or cash equivalents paid or the fair value of the other consideration given to acquire them at the time of their acquisition.
- (b) *Current cost.* Assets are carried at the amount of cash or cash equivalents that would have to be paid if the same or an equivalent asset were acquired currently.
- (c) *Realisable (settlement) value.* Assets are carried at the amount of cash or cash equivalents that could currently be obtained by selling the asset in an orderly disposal.
- (d) *Present value.* Assets are carried at the present value of the future net cash inflows that the item is expected to generate in the normal course of business.

Other valuation bases:

Net Realisable Value (NRV): This is same as the Realisable (settlement) value. This is the value (net of expenses) that can be realized by disposing off the assets in an orderly manner. Net selling price or exit values also convey the same meaning.

Economic value: This is same as the present value. The other name of it is value to business.

Replacement (cost) value: This is also same as the current cost.

Recoverable (amount) value: This is the higher of the net selling price and value in use.

Deprival value: This is the lower of the replacement value and recoverable (amount) value.

Liquidation value: This is the value (net of expenses), that a business can expect to realize by disposing of the assets in the event of liquidation. Such a value is usually lower than the NRV or exit value. This is also called break-up value.

Fair value: This is not based on a particular method of valuation. It is the acceptable value based on appropriate method of valuation in context of the situation of valuation. Thus fair

value may represent current cost, NRV or present value as the case may be.

Three General Approaches to Valuation are:

- 1) Cost Approach: e.g. Adjusted Book Value
- 2) Market Approach: e.g. Comparables
- 3) Income Approach: e.g. Discounted Cash Flow

VALUATION OF TANGIBLE FIXED ASSETS

Para 9 of AS 10 has stated the components of cost as below:

- (a) The cost of an item of fixed asset comprises its purchase price, including import duties and other non-refundable taxes or levies, any trade discounts and rebates are deducted in arriving at the purchase price.
- (b) Any directly attributable cost of bringing the asset to its working condition for its intended use;
- (c) Administration and other general overhead expenses are usually excluded from the cost of fixed assets because they do not relate to a specific fixed asset.
- (d) The expenditure incurred on start-up and commissioning of the project, including the expenditure incurred on test runs and experimental production, is usually capitalised as an indirect element of the construction cost.
- (e) If the interval between the date a project is ready to commence commercial production and the date at which commercial production actually begins is prolonged, all expenses incurred during this period are charged to the profit and loss statement.

The same principles that apply to value purchased fixed assets at original cost will apply to self-constructed assets also.

Improvement: Expenditure which increase the future benefits from the existing asset is treated as cost of improvement. This cost of improvement or of any addition or extension which becomes integral part of the existing fixed asset is to be added to the value of the asset.

Revaluation: Revaluation of fixed assets may be made to show the assets at their current costs, particularly in context of the historical cost losing relevance in inflationary situation. Increase in value of fixed assets is shown as revaluation reserve which is not distributable. The loss on revaluation, however, transferred to profit and loss account.

Government Grants related to specific fixed assets, as per AS 12, can be deducted from the cost of the said assets.

Impairment of assets: When the recoverable amount of an asset falls below its carrying amount, as per AS 28, the carrying amount has to be reduced to the recoverable amount and the loss on impairment should be charged to profit and loss account in addition to the depreciation. If subsequently the recoverable amount rises the reversal, i.e., addition shall be

9.3 Financial Reporting

made to the already reduced carrying amount.

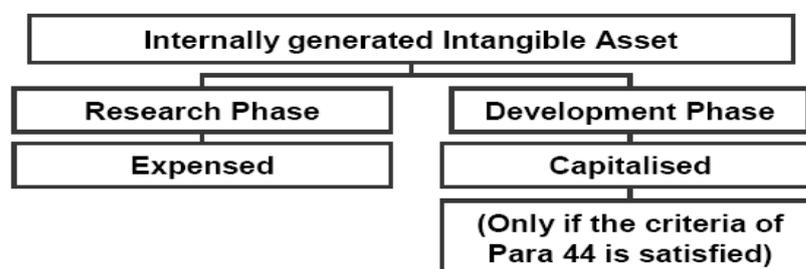
VALUATION OF INTANGIBLES (AS 26): Meaning - An intangible asset is an identifiable non-monetary asset, without physical substance, held for use in the production or supply of goods or services, for rental to others, or for administrative purposes.

Types- Intangible fixed assets can be classified as **identifiable intangibles and not identifiable intangibles**. The identifiable intangibles include patents, trademarks and designs and brands whereas the not identifiable intangibles are clubbed together as goodwill.

When to Recognize - An intangible asset should be recognised if, and only if:

- (a) It is probable that the future economic benefits that are attributable to the asset will flow to the enterprise; and
- (b) The cost of the asset can be measured reliably.

If the intangible asset is **internally generated**:



Para 50 of the AS 26 clearly states that 'Internally generated brands, mastheads, publishing titles, customer lists and items similar in substance should not be recognized as intangible assets'.

- For other types of intangible assets Para 41 (AS 26) stated that 'No intangible asset arising from research (or **from the research phase** of an internal project) should be recognised' and
- Para 44 requires that 'An intangible asset arising **from development** (or from the development phase of an internal project) should be recognised if, and only if, all of the conditions specified therein are satisfied'.

When not recognized the expenditure on intangible item would be **treated as expense** and when recognised the expenditure on the intangible item **would be capitalized**.

Subsequent expenditure on an intangible asset after its purchase or its completion should be added to the cost of the intangible asset if:

- (a) It is probable that the expenditure will enable the asset to generate future economic benefits in excess of its originally assessed standard of performance; and (b) the expenditure

can be measured and attributed to the asset reliably.

Brand Valuation

- **No valuation** shall be made for **internally generated brand**.
- When the **brand is acquired separately**, the valuation would be made **at initial cost of acquisition** (with subsequent addition to cost, if any).

All identifiable intangible assets including Patents, Copyrights, Know-how and Designs which are acquired separately valuation would be made at initial cost of acquisition (with subsequent addition to cost, if any).

The depreciable amount of an intangible asset should be allocated on a systematic basis over the best estimate of its useful life. There is a rebuttable presumption that the useful life of an intangible asset will not exceed ten years from the date when the asset is available for use.

Amortization should commence when the asset is available for use.

Valuation of Goodwill – Purchased goodwill can be defined as being the excess of fair value of the purchase consideration over the fair value of the separable net assets acquired. Para 36 of AS-10 Accounting for Fixed Assets' states that only purchased goodwill should be recognised in the accounts.

Goodwill is a thing which is not so easy to describe but in general words good-name, reputation and wide business connection which helps the business to earn more profits than the profit could be earned by a newly started business. The monetary value of the advantage of earning more profits is known as goodwill. Goodwill is an attractive force, which brings in customers to old place of business. Goodwill is an intangible but valuable asset. In a profitable concern it is not a fictitious asset.

Future maintainable profit is ascertained taking either simple or weighted average of the past profits or by fitting trend line. If the past profits do not have any definite trend, average is taken to arrive at the future maintainable profit. If the past profits show increasing or decreasing trend, linear trend equation gives better estimation of the future maintainable profit. If the past profits show increasing or decreasing trend, then more weights are given to the profit figures of the immediate past years and less weight to the profit figures of the furthest past.

The following adjustments from past profits are generally made:

- (i) Elimination of abnormal loss arising out of strikes, lock-out, fire, etc. Profit/loss figures which contain abnormal loss should either be ignored or eliminated. Similarly, if there is any abnormal gain included in past profits that needs elimination.
- (ii) Interest/dividend or any other income from non-trading assets needs elimination because 'capital employed' used for valuation of goodwill comprises only of trading assets.

9.5 Financial Reporting

- (iii) If there is a change in rate of tax, tax charged at the old rate should be added back and tax should be charged at the new rate.
- (iv) Effect of change in accounting policies should be neutralised to have profit figures which are arrived at on the basis of uniform policies.

Valuation of Liabilities: The different bases of valuation of liabilities are:

- (a) *Historical cost.*
- (b) *Current cost.*
- (c) *Realisable (settlement) value.* Liabilities are carried at their settlement values, that is, the undiscounted amounts of cash or cash equivalents expected to be required to settle the liabilities in the normal course of business.
- (d) *Present value.*

The liability items of the balance sheet are generally carried at the settlement values.

Liabilities may be carried at the present value in case of finance lease.

In case of a finance lease, the lessee should recognize a liability equal to the fair value of the leased asset at the inception of the lease.

In regard provision, the valuation is based on settlement value and not on present value.

Valuation of Shares: For transactions concerning relatively small blocks of shares which are quoted on the stock exchange, generally the ruling stock exchange price (average price) provides the basis.

Principally two basic methods are used for share valuation; one on the basis of *net assets* and the other on the basis of *earning capacity* or *yield* (which, nevertheless, must take into consideration net assets used).

Net Asset Basis: According to this method, value of equity share is determined as follows:

$$\frac{\text{Net assets available to equity shareholders}}{\text{Number of equity shares}}$$

Yield Basis: Broadly, the following steps are envisaged in a yield based valuation considering the rate of return:

- (i) Determination of future maintainable profit;
- (ii) Ascertaining the normal rate of return;
- (iii) Finding out the capitalization factor or the multiplier;
- (iv) Multiplying the future maintainable profit, by the multiplier; and
- (v) Dividing the results obtained in (iv) by the number of shares.

The steps necessary to arrive at the future maintainable profits of a company are: (a)

calculation of past average taxed earnings, (b) projection of the future maintainable taxed profits, and (c) adjustment of preferred rights.

Mean between asset and yield based valuation: Average of book value and yield based value incorporates the advantages of both the methods. That is why such average is called the fair value of share.

Valuation of Preference Shares: For valuation of preference shares the following factors are generally considered:

- (i) Risk free rate plus small risk premium (i.e. market expectation rate).
- (ii) Ability of the company to pay dividend on a regular basis.
- (iii) Ability of the company to redeem preference share capital.

Ability to pay preference dividend may be judged by using the following ratio:

$$\frac{\text{Profit after tax}}{\text{Preference dividend}}$$

The value of each preference shares can be derived as below:

$$\frac{\text{Preference dividend rate}}{\text{Market expectation rate}} \times 100$$

Valuation of Business: Value of business is different from that of the aggregate value of assets.

Two alternative approaches are available for business valuation: (i) going concern and (ii) liquidation.

The following methods are used for business valuation taking it as a going concern:

- (i) Historical cost valuation
- (ii) Current cost valuation
- (iii) Economic valuation
- (iv) Asset valuation.

For piecemeal sale of the business, only 'net realisable value' basis is appropriate.

Historical cost valuation: It is also called book value method. All assets are taken at their respective historical cost. Value of goodwill is ascertained and added to such historical cost of assets.

Historical cost value of business = Historical cost of all assets + Value of goodwill.

Current cost valuation: Current cost of assets is taken for this purpose instead of historical cost.

Economic valuation: Under this method value of the business is given by the sum of

9.7 Financial Reporting

discounted value of future earnings or cash flows.

Fair value: NAV on the basis of fair value of assets and liabilities is computed in the same way as computed on the basis of book value except that the fair values of assets and liabilities are considered instead of balance sheet values. The implication of fair value also varies with the objective of valuation, whether the objective is to find the going concern value or the liquidation value.

Earning based valuation of business: Earning based valuation of business = Earning capacity value per share X number of equity shares + Preference share capital + Debt capital. (Book values of preference capital and debt capital should be taken)

Market value model: This is simply the aggregate of the market capitalization and market value of preference capital and debt capital. Market capitalization means market value of equity multiplied by the number of outstanding share. The quoted price of the stock exchanges provides the market value of equity at any moment.

Valuation of Intangibles

Question 1

Discuss methods of valuation of intangible assets in brief.

Answer

Valuation of intangible assets is a complex exercise, as the non-physical form of intangible assets poses the difficulty of identifying the future economic benefits that the enterprise can expect to derive from them. There are three main approaches for valuing intangible assets:

- (1) *Cost approach:* In cost approach, historical expenditure incurred in developing the asset is aggregated. Cost is measured by purchase price, where the asset has been acquired recently.
- (2) *Market value approach:* In comparable market value approach, intangible assets are valued with reference to transactions involving similar assets that have cropped up recently in similar markets. This approach is possible when there is an active market in which arm's length transactions have occurred recently involving comparable intangible assets and adequate information of terms of transactions is available.
- (3) *Economic value approach:* This approach is based on the cash flows or earnings attributable to those assets and the capitalization thereof, at an appropriate discount rate or multiple. Some of the key parameters used in this approach are projected revenues, projected earnings, discount rate, rate of return etc. The information required can be derived from either internal sources, external sources or both. Under this approach, the valuer has to identify cash flows or earnings directly associated with the intangible assets

like the cash flows arising from the exploitation of a patent or copyright, licensing of an intangible asset etc. This approach can be put to practice only if cash flows arising from the intangible assets are identifiable from the management accounts and budgets, forecasts or plans of the company. In most situations of valuation of intangible assets, the economic based approach is used, because of the uniqueness of intangible assets and the lack of comparable market data for the use of market value approach.

Average Capital Employed

Question 2

Find out the average capital employed of ND Ltd. from its summarized Balance Sheet as at 31st March, 2017:

Liabilities	(₹ in lakhs)	Assets	(₹ in lakhs)
<i>Share Capital:</i>		<i>Fixed Assets:</i>	
Equity shares of ₹ 10 each	50.00	Land and buildings	25.00
9% Preference shares fully paid up	10.00	Plant and machinery	80.25
<i>Reserve and Surplus:</i>		Furniture and fixture	5.50
General reserve	12.00	Vehicles	5.00
Profit and Loss	19.50	Investments	10.00
<i>Secured loans:</i>		Inventory	6.75
16% Debentures	5.00	Trade Receivables	4.90
16% Term loan	18.00	Cash and bank	10.40
Cash credit	13.30		
Trade Payables	2.70		
Provision for taxation	6.40		
<i>Dividend payable on:</i>			
Equity shares	10.00		
Preference shares	0.90		
	<u>147.80</u>		<u>147.80</u>

Non-trade investments were 20% of the total investments.

Balances as on 1.4.2016 to the following accounts were:

Profit and Loss account ₹ 8.20 lakhs, General reserve ₹ 6.50 lakhs.

9.9 Financial Reporting

Answer

Computation of Average Capital employed

	(₹ in lakhs)	
Total Assets as per Balance Sheet		147.8
Less: Non-trade investments (20% of ₹ 10 lakhs)		<u>(2.00)</u>
		145.80
Less: Outside Liabilities:		
16% Debentures	5.00	
16% Term Loan	18.00	
Cash Credit	13.30	
Trade Payables	2.70	
Provision for Taxation	<u>6.40</u>	<u>(45.40)</u>
Capital Employed as on 31.03.2017		100.40
Less: ½ of profit earned:		
Increase in Reserve balance	5.50	
Increase in Profit & Loss A/c	11.30	
Dividend	<u>10.90</u>	
	<u>27.70</u>	
50% of Total		<u>13.85</u>
Average capital employed		<u>86.55</u>

Valuation of Goodwill

Question 3

The following is the extract from the Balance Sheets of Popular Ltd.:

Liabilities	As at 31.3.2016 ₹ in lakhs	As at 31.3.2017 ₹ in lakhs	Assets	As at 31.3.2016 ₹ in lakhs	As at 31.3.2017 ₹ in lakhs
Share capital	500	500	Fixed assets	550	650
General reserve	400	425	10% Investment	250	250
Profit and Loss account	60	90	Inventory	260	300
18% Term loan	180	165	Trade Receivables	170	110
Trade Payables	35	45	Cash at bank	46	45

Provision for tax	11	13	Fictitious assets	10	8
Dividend payable	<u>100</u>	<u>125</u>		<u> </u>	<u> </u>
	<u>1,286</u>	<u>1,363</u>		<u>1,286</u>	<u>1,363</u>

Additional information:

- (i) Replacement values of fixed assets were ₹ 1,100 lakhs on 31.3.16 and ₹ 1,250 lakhs on 31.3.2017 respectively.
- (ii) Rate of depreciation adopted on fixed assets was 5% p.a.
- (iii) 50% of the inventory is to be valued at 120% of its book value.
- (iv) 50% of investments were trade investments.
- (v) Trade Receivables on 31st March, 2017 included foreign trade receivables of \$ 35,000 recorded in the books at ₹ 35 per U.S. Dollar. The closing exchange rate was \$ 1 = ₹ 39.
- (vi) Trade Payables on 31st March, 2017 included foreign trade payables of \$ 60,000 recorded in the books at \$ 1 = ₹ 33. The closing exchange rate was \$ 1 = ₹ 39.
- (vii) Profits for the year 2016-2017 included ₹ 60 lakhs of government subsidy which was not likely to recur.
- (viii) ₹ 125 lakhs of Research and Development expenditure was written off to the Profit and Loss Account in the current year. This expenditure was not likely to recur.
- (ix) Future maintainable profits (pre-tax) are likely to be higher by 10%.
- (x) Tax rate during 2016-2017 was 50%, effective future tax rate will be 40%.
- (xi) Normal rate of return expected is 15%.

One of the directors of the company Arvind, fears that the company does not enjoy goodwill in the prevalent market circumstances.

Critically examine this and establish whether Popular Ltd. has or has not any goodwill.

If your answers were positive on the existence of goodwill, show the leverage effect it has on the company's result.

Industry average return was 12% on long-term funds and 15% on equity funds.

Answer

1. Calculation of Capital employed (CE)	₹ in lakhs	
	As on 31.3.16	As on 31.3.17
Replacement Cost of Fixed Assets	1,100.00	1,250.00
Trade Investment (50%)	125.00	125.00

9.11 Financial Reporting

Current cost of inventory		
$130 + 130 \times \frac{120}{100}$	286.00	
$150 + 150 \times \frac{120}{100}$		330.00
Trade Receivables	170.00	111.40
Cash at Bank	<u>46.00</u>	<u>45.00</u>
Total (A)	<u>1,727.00</u>	<u>1,861.40</u>
Less: Outside Liabilities		
18% term loan	180.00	165.00
Trade Payables	35.00	48.60
Provision for tax	<u>11.00</u>	<u>13.00</u>
Total (B)	<u>226.00</u>	<u>226.60</u>
Capital employed (A-B)	<u>1501.00</u>	<u>1634.80</u>
Average Capital employed at current value		
= $\frac{\text{Opening capital employed} + \text{closing capital employed}}{2}$		
= $\frac{1501 + 1634.80}{2} = 1567.90$ lakhs		
2. Future Maintainable Profit		₹ in lakhs
Increase in General Reserve	25	
Increase in Profit and Loss Account	30	
Dividends	<u>125</u>	
Profit After Tax	180	
Pre-tax Profit = $\frac{180}{1-0.5}$		360
Less: Non-Trading investment income (10% of ₹ 125)	12.50	
Subsidy	60.00	
Exchange Loss on Trade Payables [0.6 lakhs × (39-33)]	3.60	

Additional Depreciation on increase in value of Fixed Assets (current year) $(1,250 - 650) \times \frac{5}{100}$ i.e.,	<u>30.00</u>	<u>(106.10)</u>
		253.90
Add: Exchange Gain on trade receivables [0.35 lakhs \times (39-35)]	1.40	
Research and development expenses written off	125.00	
Inventory Adjustment (30-26)	<u>4.00</u>	<u>130.40</u>
		384.30
Add: Expected increase of 10%		<u>38.43</u>
Future Maintainable Profit before Tax		422.73
Less: Tax @ 40% (40% of ₹ 422.73)		<u>(169.09)</u>
Future Maintainable Profit		<u>253.64</u>
3. Valuation of Goodwill		₹ in lakhs
(i) According to Capitalisation of Future Maintainable Profit Method		
Capitalised value of Future Maintainable Profit		1,690.93
$= \frac{253.64}{15} \times 100$		
Less: Closing capital employed		<u>1,634.80</u>
Value of Goodwill		<u>56.13</u>
Or		
(ii) According to Capitalization of Super Profit Method		
Future Maintainable Profit		253.64
Less: Normal Profit @ 15% on average capital employed (1,567.90 \times 15%)		<u>235.19</u>
Super Profit		<u>18.45</u>
Capitalised value of super profit $\frac{18.45}{15} \times 100$ i.e. Goodwill		123.00

Goodwill exists; hence director's fear is not valid.

Leverage Effect on Goodwill

	₹ in lakhs
Future Maintainable Profit on equity fund	253.64

9.13 Financial Reporting

Future Maintainable Profit on Long-term Trading Capital employed		
Future Maintainable Profit After Tax	253.64	
Add: Interest on Long-term Loan (Term Loan)		
(After considering Tax) $165 \times 18\% = 29.7 \times \frac{(100 - 40)}{100} = 17.82$		
Add: 10% Increase of FMP = <u>1.78</u>	<u>19.602</u>	273.242
Average capital employed (Equity approach)		1,567.90
Add: 18% Term Loan $(180+165)/2$		<u>172.50</u>
Average capital employed (Long-term Fund approach)		<u>1,740.40</u>
Value of Goodwill		
(A) Equity Approach		
Capitalised value of Future Maintainable Profit = $\frac{273.242}{15} \times 100 =$		1,690.93
Less: Average capital employed		<u>(1,567.90)</u>
Value of Goodwill		<u>123.03</u>
(B) Long-Term Fund Approach		
Capitalized value of Future Maintainable Profit = $\frac{271.46}{12} \times 100$		2277.00
Less: Average capital employed		<u>(1,740.40)</u>
Value of Goodwill		<u>536.62</u>

Comments on Leverage effect of Goodwill: Adverse Leverage effect on goodwill is 413.59 lakhs (i.e., ₹ 536.62 – 123.03). In other words, Leverage Ratio of Popular Ltd. is low for which its goodwill value has been reduced when calculated with reference to equity fund as compared to the value arrived at with reference to long term fund.

Working Notes:

		₹ in lakhs
(1)	Inventory adjustment	
	(i) Excess current cost of closing inventory over its Historical cost (330 – 300)	30.00
	(ii) Excess current cost of opening inventory over its Historical cost (286-260)	<u>26.00</u>
	(iii) Difference [(i– ii)]	<u>4.00</u>
(2)	Trade Receivables' adjustment	
	(i) Value of foreign exchange Trade Receivables at the closing exchange rate ($\$35,000 \times 39$)	13.65

(3)	(ii)	Value of foreign exchange Trade Receivables at the original exchange rate (\$35,000×35)	<u>12.25</u>
	(iii)	Difference [(i) – (ii)]	<u>1.40</u>
	Trade Payables' adjustment		
	(i)	Value of foreign exchange Trade Payables at the closing exchange rate (\$ 60,000×39)	23.40
	(ii)	Value of foreign exchange Trade Payables at the original exchange rate(\$60,000×33)	<u>19.80</u>
	(iii)	Difference [(i) – (ii)]	<u>3.60</u>

Question 4

The summarised Balance Sheet of Domestic Ltd. as on 31st March, 2017 is as under:

Liabilities	(₹ in lakhs)	Assets	(₹ in lakhs)
Equity shares of ₹ 10 each	3,000	Patent	744
Reserves (including provision for taxation of ₹ 300 lakhs)	1,000	Premises and Land at cost	400
5% Debentures	2,000	Plant and Machinery	3,000
Secured loans	200	Motor vehicles	40
Trade Payables	300	(purchased on 1.10.16)	920
Profit & Loss A/c:		Raw materials at cost	130
Balance from previous year	32	Work-in-progress at cost	180
Profit for the year (after taxation)	<u>1,100</u>	Finished goods at cost	400
	1,132	Trade Receivables	1,600
		Investment (meant for replacement of plant and machinery)	192
		Cash at bank and cash in hand	10
		Discount on debentures	16
		Underwriting commission	16
	<u>7,632</u>		<u>7,632</u>

1. The resale value of premises and land is ₹ 1,200 lakhs and that of plant and machinery is ₹ 2,400 lakhs. Patent appearing in the balance sheet is of no use and should be ignored for the valuation purpose.
2. Depreciation @ 20% is applicable to motor vehicles.

9.15 Financial Reporting

3. Applicable depreciation on premises and land is 2% and that on plant and machinery is 10%.
4. Market value of the investments is ₹ 1,500 lakhs.
5. 10% of trade receivables is bad.
6. The company also revealed that the depreciation was not charged to Profit and Loss account and the provision for taxation already made is sufficient.
7. In a similar company the market value of equity shares of the same denomination is ₹ 25 per share and in such company dividend is consistently paid during last 5 years @ 25%. Contrary to this, Domestic Ltd. is having a marked upward or downward trend in the case of dividend payment.
8. In 2011-2012 and in 2012-2013, the normal business was hampered. The profit earned during 2011-2012 is ₹ 67 lakhs, but during 2012-2013 the company incurred a loss of ₹ 1,305 lakhs.

Past 3 years' profits of the company were as under:

2013-2014	₹ 469 lakhs
2014-2015	₹ 546 lakhs
2015-2016	₹ 405 lakhs

The unusual negative profitability of the company during 2012-2013 was due to the lock out in the major manufacturing unit of the company which happened in the beginning of the second quarter of the year 2011-2012 and continued till the last quarter of 2012-2013.

Value the goodwill of the company on the basis of 4 years' purchase of the super profit.

Answer

1. Rectification of current year's profit i.e. 2016-2017

Profit After Tax	= ₹ 1,100 lakhs
Provision for taxation	= ₹ 300 lakhs
Profit Before Tax	= PAT + Provision for taxation
	= ₹ 1,100 lakhs + ₹ 300 lakhs = ₹ 1,400 lakhs

$$\text{Rate of tax} = \frac{\text{Provision for tax}}{\text{Profit before tax}} \times 100 = \frac{300}{1,400} \times 100 = 21.43\% \text{ (approx.)}$$

	₹ in lakhs
Profit for the year after tax	1,100
Less: Depreciation net of tax on motor vehicles (₹ 40 lakhs x 20% x 6/12) x (100-21.43)%	(3.1428)

Depreciation net of tax on Premises and Land (₹ 400 lakhs x 2%) x (100-21.43)%	(6.2856)
Depreciation net of tax on Plant and Machinery (₹ 3,000 lakhs x 10%) x (100-21.43)%	(235.71)
Provision for doubtful receivables net of tax (₹ 400 lakh x 10%) x (100-21.43)%	<u>(31.428)</u>
Rectified profit of 2016-2017	<u>823.43</u>

2. Calculation of Capital Employed

	(₹ in lakhs)	(₹ in lakhs)
Premises and land		1,200
Plant and machinery		2,400
Motor vehicles (book value less depreciation for ½ year)		36
Raw materials		920
Work-in-progress		130
Finished goods		180
Trade Receivables (400 x 90%)		360
Investments (market value)		1,500
Cash at bank and in hand		<u>192</u>
		6,918
Less: Liabilities:		
Provision for taxation	300	
5% Debentures	2,000	
Secured loans	200	
Trade Payables	<u>300</u>	<u>(2,800)</u>
Total capital employed on 31.3.2017		4,118
Less: Half of current year's rectified profit (823.43 x 1/2)		<u>(411.72)</u>
Average Capital Employed		<u>3,706.28</u>

3. Calculation of Future Maintainable Profits

	(₹ in lakhs)			
	2013-14	2014-15	2015-16	2016-17
Profit after tax	469	546	405	823.43
Less: Depreciation net of tax on Premises and Land (₹ 400 lakhs x 2%) x				

9.17 Financial Reporting

(100-21.43)%	(6.29)	(6.29)	(6.29)	
Depreciation net of tax on Plant and Machinery (₹ 3,000 lakhs x 10%) x (100-21.43)%	(235.71)	(235.71)	(235.71)	
Adjusted Profit	<u>227</u>	<u>304</u>	<u>163</u>	<u>823.43</u>
Average adjusted profit (227+304+163+823.43)/4				379.36
Less: Excess depreciation (net of tax) due to upward revaluation of premises and land [(1,200-400) x 2%] x (100 - 21.43)%				(12.57)
Depreciation on motor vehicle (net of tax) for remaining six months (in future depreciation on motor vehicle will be charged for full year) (₹ 40 lakhs x 20% x 6/12) x (100-21.43)%				(3.14)
Add: Short depreciation (net of tax) due to downward revaluation of plant and machinery [(3,000 - 2,400) x 10%] x (100 - 21.43)%				<u>47.14</u>
Future Maintainable Profit				<u>410.79</u>

4. Calculation of General Expectation

Similar Company pays ₹ 2.5 as dividend (25%) for each share of ₹ 10.

Market value of an equity share of the same denomination is ₹ 25 which fetches dividend of 25%.

Therefore, share of ₹ 10 (Face value of shares of Domestic Ltd.) is expected to fetch $(2.5/25) \times 100 = 10\%$ return.

A nominal rate of 1% or 2% may be added as Risk premium, to the normal rate of return for uncertainty associated with dividend distribution.

Since, Domestic Ltd. is not having a stable record in payment of dividend, therefore, the expectation from it may be assumed to be slightly higher, say 11% instead of 10%.

5. Calculation of value of goodwill of Domestic Ltd.

	(₹ in lakhs)
Future maintainable profit	410.79
Less: Normal profit i.e. 11% of average capital employed (3,706.28x11%)	<u>(407.69)</u>
Super Profit	<u>3.1</u>
Goodwill at 4 years' purchase of Super Profit (3.1 × 4)	<u>12.4</u>

Notes:

- (1) It is assumed that 'Provision for Taxation' included in reserves is made in the current year only.
- (2) It is assumed that plant and machinery given in the balance sheet is at cost.
- (3) It is assumed that depreciation on 'Premises and Land' and 'Plant and Machinery' is charged on Straight Line method.
- (4) It is assumed that resale value of 'Premises and Land' and 'Plant and Machinery' given in the question is for depreciated value of respective assets. Therefore, no adjustment for depreciation has been made in such assets while calculating capital employed.
- (5) It is assumed that profit for the year 2013-2014, 2014-2015 and 2015-2016 given in the questions is after tax and no depreciation was charged in the earlier years also.
- (6) Average Capital employed has been taken for valuation of goodwill.
- (7) While considering past profits for determining average profit, the years 2011-2012 and 2012-2013 have been left out, as during these years normal business was hampered.

Question 5

From the following information, determine the possible value of brand as per potential earning model:

		₹ in lakhs
(i)	Profit After Tax (PAT)	2,500
(ii)	Tangible fixed assets	10,000
(iii)	Identifiable intangible other than brand	1,500
(iv)	Weighted average cost of capital (%)	14%
(v)	Expected normal return on tangible assets weighted average cost (14%) + normal spread 4%	18%
(vi)	Appropriate capitalisation factor for intangibles	25%

Answer**Calculation of possible value of brand**

	₹ in lakhs
Profit after Tax	2,500
Less: Profit allocated to tangible assets [18% of ₹ 10,000]	<u>(1,800)</u>
Profit allocated to intangible assets including brand	<u>700</u>

9.19 Financial Reporting

Capitalisation factor 25%	
Capitalised value of intangibles including brand $\left[\frac{700}{25} \times 100 \right]$	2,800
Less: Identifiable intangibles other than brand	<u>(1,500)</u>
Brand value	<u>1,300</u>

Question 6

The Balance Sheet of D Ltd. on 31st March, 2017 is as under:

Liabilities	₹	Assets	₹
1,25,000 shares of ₹100 each fully paid up	1,25,00,000	Goodwill	10,00,000
Bank overdraft	46,50,000	Building	80,00,000
Trade Payables	52,75,000	Machinery	70,00,000
Provision for taxation	12,75,000	Inventory	80,00,000
Profit and loss account	<u>53,00,000</u>	Trade receivables (all considered good)	50,00,000
	<u>2,90,00,000</u>		<u>2,90,00,000</u>

In 2000, when the company started its activities the paid up capital was the same. The Profit/Loss for the last five years is as follows:

2012-2013: Loss (13,75,000), 2013-2014: Profit ₹ 24,55,000, 2014-2015: Profit ₹ 29,25,000, 2015-2016: Profit ₹ 36,25,000, 2016-2017: Profit ₹ 42,50,000.

Income-tax rate so far has been 40% and the above profits have been arrived at on the basis of such tax rate. From 2016-2017, the rate of income-tax should be taken at 45%. 10% dividend in 2013-2014, 2014-2015 and 15% dividend in 2015-2016 and 2016-2017 has been paid. Market price of this share on 31st March, 2017 is ₹125. With effect from 1st April, 2017, the Managing Directors remuneration will be ₹ 20,00,000 instead of ₹ 15,00,000. The company has secured a contract from which it can earn an additional ₹ 10,00,000 per annum for the next five years.

Calculate the value of goodwill at 3 years purchase of super profit. (For calculation of future maintainable profits weighted average is to be taken).

Answer**(i) Future Maintainable Profit**

Year	Profit (P) ₹	Weight (W)	Products (PW) ₹
2013-2014	24,55,000	1	24,55,000
2014-2015	29,25,000	2	58,50,000
2015-2016	36,25,000	3	1,08,75,000
2016-2017	42,50,000	<u>4</u>	<u>1,70,00,000</u>
		<u>10</u>	<u>3,61,80,000</u>
Weighted average annual profit (after tax)* = $\frac{3,61,80,000}{10}$ = ₹ 36,18,000			
Weighted average annual profit before tax is 36,18,000 × $\frac{100}{60}$			60,30,000
Less: Increase in Managing Director's remuneration			<u>(5,00,000)</u>
			55,30,000
Add: Contract advantage			<u>10,00,000</u>
			65,30,000
Less: Tax @ 45%			<u>(29,38,500)</u>
Future maintainable profit			<u>35,91,500</u>

(ii) Average Capital Employed

	₹	₹
Assets		
Building		80,00,000
Machinery		70,00,000
Inventory		80,00,000
Trade Receivables		<u>50,00,000</u>
		2,80,00,000
Liabilities		
Bank Overdraft	46,50,000	

* Loss amounting ₹ 13,75,000 for the year 2012-2013 has not been considered in calculation of weighted average profit assuming that the loss was due to abnormal conditions.

** Additional provision for taxation 5% of ₹ 70,83,333 (₹ 42,50,000/60%) has also been created assuming that the necessary rectification is being done in the financial statements for the year 2016-2017.

9.21 Financial Reporting

Trade Payables	52,75,000	
Provision for taxation	12,75,000	
Additional provision for taxation**	<u>3,54,167</u>	<u>(1,15,54,167)</u>
Capital employed at the end of the year		1,64,45,833
Less: ½ profit after tax for the year [(42,50,000-3,54,167)/2]		<u>(19,47,917)</u>
Average capital employed		<u>1,44,97,916</u>

(iii) Normal Profit

Average dividend for the last four years

$$\frac{10 + 10 + 15 + 15}{4} = 12.5$$

Market Price of share = ₹ 125

$$\text{Normal rate of return}^* = \frac{12.5}{125} \times 100 = 10\%$$

Normal profit 10% of ₹ 1,44,97,916

₹ 14,49,792

(iv) Valuation of Goodwill

	₹
Future maintainable profit	35,91,500
Less: Normal profit	<u>(14,49,792)</u>
Super Profit	<u>21,41,708</u>
Goodwill at 3 years' purchase of super profits (₹ 21,41,708 x 3)	64,25,124

Question 7

Find out Leverage effect on Goodwill in the following case:

(i)	Current cost of capital employed	₹ 10,40,000
(ii)	Profit earned after current cost adjustments	₹ 1,72,000
(iii)	10% long term loan	₹ 4,50,000
(iv)	Normal rate of return:	
	On equity capital employed	15.6%
	On long-term capital employed	13.5%

* Normal rate of return has been computed by dividend yield method.

Answer

			₹
a	Profit for equity fund after current cost adjustment		1,72,000
b	Profit (as per Long-term fund approach)		
	Profit for equity fund	1,72,000	
	Add: Interest on Long-term loan (4,50,000 x 10%)	<u>45,000</u>	2,17,000
c	Current cost of capital employed (by Equity approach)		10,40,000
d	Capital employed as per Long-term fund approach		
	Current cost of capital employed (by Equity approach)	10,40,000	
	Add: 10% Long term loan	<u>4,50,000</u>	14,90,000
e	Value of Goodwill		
	(A) By Equity Approach		
	Capitalised value of Profit as per equity approach = $\frac{1,72,000}{15.60} \times 100$		11,02,564
	Less: Capital employed as per equity approach		<u>(10,40,000)</u>
	Value of Goodwill		<u>62,564</u>
	(B) By Long-Term Fund Approach		
	Capitalized value of Profit as per Long-term fund approach = $\frac{2,17,000}{13.5} \times 100$		16,07,407
	Less: Capital employed as per Long-term fund approach		<u>(14,90,000)</u>
	Value of Goodwill		<u>1,17,407</u>

Leverage effect on Goodwill:

Adverse Leverage effect on goodwill is ₹ 54,843 (i.e. ₹ 1,17,407 – ₹ 62,564).

Question 8

A Company Q is willing to sell its business. The purchaser has sought professional advice for the valuation of the goodwill of the company. He has the last audited financial statements together with some additional information. Help him to ascertain the correct price for the purpose of purchase:

9.23 Financial Reporting

The extract of the Balance Sheet as on 31-3-2016 is as under:

Liabilities	₹	Assets	₹
Equity Share Capital (shares of ₹ 100 each)	9,50,000	Land & Building	5,45,000
8% Preference Share Capital (shares of ₹ 100 each)	2,25,000	Plant & Machinery	4,55,000
Reserves & Surplus	7,50,500	Investments in shares	4,85,000
9% Debentures	5,60,000	Inventories	3,80,000
Current Liabilities	3,25,640	Trade Receivables (net)	4,25,620
	28,11,140	Cash & Bank balance	5,20,520
			28,11,140

- (1) The purchaser wants to acquire all the equity shares of the company.
- (2) The Debentures will be redeemed at a discount of 25% of the value in Balance Sheet and investments in share will be sold at their present market value which is quoted as ₹ 4,95,200. The above will be prior to the purchase of the equity shares.

For the purpose of pricing of Goodwill:

- (3) The normal rate of return on net assets for equity shares is 10%.
- (4) Profits for the past three years after debenture interest but before Preference Share Dividend have been as under:

31-3-2016	₹ 2,95,000
31-3-2015	₹ 4,99,000
31-3-2014	₹ 3,25,000

- (5) Goodwill is valued at three years purchase of the adjusted average super profit.
- (6) In the year 2015, 20% of the profit mentioned above was due to non-recurring transaction resulting in increase of profit.
- (7) The Land & Building has a current rental value of ₹ 62,400 and 8% return is expected from the property.
- (8) On 31-3-2016, 8% of debtors existing on the date had been written as bad and charged to Profit and Loss Account as Provision for Bad debts. The same are now recoverable Tax is applicable at 35%.
- (9) A claim of compensation long contingent of ₹ 25,000 has perspired and is to be accounted for.

(10) No Debenture interest shall be payable in future due to its redemption.

Answer

Valuation of goodwill: Super profits method

Particulars	₹	₹
Net trading assets attributable to equity share holders As computing in (WN 1)	23,18,506	
Less: Preference share Capital	<u>(2,25,000)</u>	20,93,506
Normal Rate of Return (NRR) to equity share holders		10%
Normal Profit available to equity share holders (a × b)		2,09,351
Future Maintainable Profits (FMP) to equity share holders As computed in (WN 3)	3,75,096	
Less: Preference dividend* (8% of 2,25,000)	<u>(18,000)</u>	<u>3,57,096</u>
Super profits to equity share holders		<u>1,47,745</u>
Goodwill (1,47,745 × 3)		4,43,235

*Since, NRR is given as percentage of net assets attributable to equity shareholders, preference share capital and preference share dividend have been deducted from the net assets and future maintainable profit respectively.

Value Per Equity Share

Net Trading Assets attributable to equity shareholders	₹ 20,93,506
Add: Goodwill	₹ <u>4,43,235</u>
	₹ <u>25,36,741</u>

Number of Equity Shares = 9,500 shares,

$$\text{Value per share} = \frac{25,36,741}{9,500} = ₹ 267 \text{ (approx.)}$$

Working Notes:

1. **Computation of net trading assets**

Particulars	₹	₹
Sundry assets		
i Land & Building (62,400 ÷ 8%)	7,80,000	
ii Plant and Machinery	4,55,000	
iii Inventory	3,80,000	
iv Trade receivables (4,25,620 ÷ 92%)	4,62,630	
v Bank balance (given balance 5,20,520 + Sale of		

9.25 Financial Reporting

investment 4,95,200 - redemption of debentures 5,60,000 × 75%)	<u>5,95,720</u>	26,73,350
Less: Outside liabilities:		
i Current Liabilities	3,25,640	
ii Contingent Liability now to be accounted for	25,000	
iii Tax provision (WN 2)	<u>4,204</u>	<u>(3,54,844)</u>
Net assets		<u>23,18,506</u>

2. Calculation of tax provision

	₹
Profit on reversal of provision for bad debts	37,010
Loss on recognizing omitted claim (assuming tax deductible)	<u>(25,000)</u>
Net incremental profit on which tax is payable	<u>12,010</u>
Tax provision 35%	<u>4,204</u>

3. Computation of future maintainable profit for the year ended on 31st March

Particulars	2014	2015	2016
Profit after tax	3,25,000	4,99,000	2,95,000
Less: Non-recurring profits (after tax) (20% of 2015 Profit)	-	(99,800)	-
Less: Claims not recorded (after tax) [25,000 × (1-35%)]	-	-	(16,250)
Add: Provision no longer required (net of tax) [4,25,620 × 8/92 × (1-35%)]	<u>-</u>	<u>-</u>	<u>24,057</u>
Adjusted profits after tax	<u>3,25,000</u>	<u>3,99,200</u>	<u>3,02,807</u>

Simple average of the profits (as profits are fluctuating)	3,42,336
Adjustments for items which will not be reflected in future	
Add: Debenture interest (net of tax) [5,60,000 × 9% × (1 – 0.35)]	<u>32,760</u>
Future maintainable profit [for shareholders- both preference and equity)	<u>3,75,096</u>

Assumptions

1. Tax effect has been ignored on profit on sale of investments and discount on redemption of debentures.
2. Assets and liabilities are recorded at realizable value or fair value. In the absence of information, book values are assumed to be fair values.
3. Additional depreciation on revaluation of property is ignored.
4. Profits for past three years given in the question have been assumed as profits after tax.

Valuation of Bonds**Question 9**

Agile Limited is a manufacturer-cum-dealer of 'R Tuff' brand of trousers. With passage of time, its brand has been well accepted in the market. The company has been approached by a foreign company engaged in the same trade to enter as partner in its business. Agile, in order to negotiate the deal wants to get its brand valued. The following information based on market research is available:

- (i) *Garment industry of which Agile is a constituent, is expected to grow by 9% per annum during the next five years. The present market size of the industry is ₹ 7,500 crores.*
- (ii) *There are other brands both national and international in the market. The existence of duplicate brands is unavoidable. The share of such players is estimated to be 63% of the total industry market. The market share of other national brands will increase @ 0.25% year on year basis in the next 5 years. The share of international brands is expected to grow 1.5 times of national brands. But the existence of duplicate brands is to fall by 2.5% over the period of next 5 years, spread equally.*
- (iii) *The expected foreign partner needs the production line of the company to be re-engineered which will lead to an increase in the yield of the company by 3% after one year over the present yield of 10% followed thereafter by further increase of 5% year on year.*

Following the market oriented approach, determine the brand value to be used for negotiation with the foreign company, considering the discount factor for 1st five years as 0.909; 0.826; 0.751; 0.683 and 0.621 (Monetary values in crores to be rounded off to nearest 2 decimal places).

Answer**Market Share of Agile Ltd.**

Calculation of last year's market share = 100% – 63% = 37%

Increase or decrease in market share of other players $[0.25 + (.25 \times 150\%) - 2.5/5] = 0.125\%$ i.e. increase in others' market share every year over the period of 5 years. Hence, market share of Agile Ltd. is expected to decrease by 0.125% every year over the period of 5 years, from the current level of 37%.

9.27 Financial Reporting

Brand Valuation under Market Approach

Year	Market Size (₹ in Crores)	Market Share of Agile Ltd.	Market Share (₹ in Crores)	Expected Profit (₹ in Crores)	Discount Factor	Discounted Cash Flow (₹ in Crores)
1	7500 x 109% = 8,175	36.875%	3014.53	@ 10% = 301.45	0.909	274.02
2	8,175 x 109% = 8910.75	36.75%	3274.70	@ 13% = 425.71	0.826	351.64
3	8,910.75 x 109% = 9712.72	36.625%	3557.28	@18% = 640.31	0.751	480.87
4	9,712.72 x 109% = 10,586.86	36.5%	3864.20	@23% = 888.77	0.683	607.03
5	10,586.86 x 109% = 11,539.68	36.375%	4197.56	@28% = 1,175.32	0.621	<u>729.87</u>
	Brand Value					<u>2,443.43</u>

Brand Value of Agile Ltd. under Market Oriented Approach is ₹ 2,443.43 crores.

Valuation of Shares

Question 10

Write short note on capital market information - P/E ratio, yield ratio and market value/book value of shares.

Answer

Capital market information-P/E ratio, yield ratio and market value/book value of shares: Frequently share prices data are punched with the accounting data to generate new set of information. These are (i) Price Earnings Ratio, (ii) Yield Ratio, (iii) Market Value/Book Value per share.

$$\text{Price - Earnings Ratio (P/E Ratio)} = \frac{\text{Average Share Price}}{\text{EPS}}$$

(Sometimes it is also calculated with reference to closing share price)

$$\text{P/E Ratio} = \frac{\text{Closing Share Price}}{\text{EPS}}$$

It indicates the pay-back period to the investors or prospective investors. The P/E ratio can be interpreted on a comparison with the industry P/E. A low P/E in comparison to the Industry can indicate that there are prospects for growth in share price and hence could be an indicator to buy/hold the shares. A high P/E ratio in comparison to the Industry can be an indicator to sell the shares.

$$\text{Yield} = \frac{\text{Dividend}}{\text{Average Share Price}} \times 100$$

$$\text{or } \frac{\text{Dividend}}{\text{Closing Share Price}} \times 100$$

This ratio indicates return on investment; this may be on average investment or closing investment. Dividend (%) indicates return on paid up value of shares. But yield (%) is the indicator of true return in which share capital is taken at its market value.

$$\frac{\text{Market Value per share}}{\text{Book Value per share}} = \frac{\text{Average Share Price}}{\text{Net Worth/No. of Equity Shares}} \text{ or } \frac{\text{Closing Share Price}}{\text{Net Worth/No. of Equity Shares}}$$

This ratio indicates market response of the shareholders' investment. Undoubtedly, higher the ratio better is the shareholders' position in terms of return and capital gains.

Question 11

From the following data, compute the 'Net Assets' value of each category of equity shares of Smith Ltd.:

Shareholders' funds

10,000 'A' Equity shares of ₹ 100 each, fully paid

10,000 'B' Equity shares of ₹ 100 each, ₹ 80 paid

10,000 'C' Equity shares of ₹ 100 each, ₹ 50 paid

Retained Earnings ₹ 9,00,000

Answer

(i) Computation of Net assets

Worth of net assets is equal to shareholders' fund, i.e.

		₹
Paid up value of 'A' equity shares	10,000 x ₹ 100	10,00,000
Paid up value of 'B' equity shares	10,000 x ₹ 80	8,00,000
Paid up value of 'C' equity shares	10,000 x ₹ 50	5,00,000
Retained earnings		<u>9,00,000</u>
Net assets		<u>32,00,000</u>

(ii) Net asset value of equity share of ₹ 100 paid up

Notional calls of ₹ 20 and ₹ 50 per share on 'B' and 'C' equity shares respectively will make all the 30,000 equity shares fully paid up at ₹ 100 each. In that case,

9.29 Financial Reporting

	₹
Net assets	32,00,000
Add: Notional calls (10,000 x ₹ 20 + 10,000 x ₹ 50)	<u>7,00,000</u>
	<u>39,00,000</u>

Value of each equity share of ₹ 100 fully paid up = ₹ 39,00,000 / 30,000 = ₹ 130

(iii) Net asset values of each category of equity shares

	₹
Value of 'A' equity shares of ₹ 100 fully paid up	130
Value of 'B' equity shares of ₹ 100 each, out of which ₹ 80 paid up (130-20)	110
Value of 'C' Equity shares of ₹ 100 each, out of which ₹ 50 paid up (130-50)	80

Alternatively value of an equity share may also be calculated as follows:

<i>Total paid-up capital</i>		₹
'A' equity shares (10,000 x ₹ 100)		10,00,000
'B' equity shares (10,000 x ₹ 80)		8,00,000
'C' equity shares (10,000 x ₹ 50)		<u>5,00,000</u>
		23,00,000
Retained earnings		<u>9,00,000</u>
Net assets value of all shares		<u>32,00,000</u>
Value per rupee of paid up capital = $\frac{\text{Net assets value of all shares}}{\text{Paid up capital}}$ =		$\frac{32,00,000}{23,00,000}$ = ₹ 1.391
Therefore,		
Net assets value of ₹ 100 paid up share	₹ 1.391 x 100	₹ 139.10
Net assets value of ₹ 80 paid up share	₹ 1.391 x 80	₹ 111.28
Net assets value of ₹ 50 paid up share	₹ 1.391 x 50	₹ 69.55

Question 12

The summarized Balance Sheet of RNR Limited as on 31.12.2016 is as follows:

<i>Liabilities</i>	<i>(₹ in lakhs)</i>	<i>Assets</i>	<i>(₹ in lakhs)</i>
1,00,000 equity shares of ₹ 10 each fully paid	10	Goodwill	5
1,00,000 equity shares of ₹ 6 each, fully paid up	6	Fixed assets	15
		Other tangible assets	5
		Intangible assets (market)	3

Reserves and Surplus	2	value)	
Liabilities	<u>10</u>		
	<u>28</u>		<u>28</u>

Fixed assets are worth ₹ 24 lakhs. Other Tangible assets are revalued at ₹ 3 lakhs. The company is expected to settle the disputed bonus claim of ₹ 1 lakh not provided for in the accounts. Goodwill appearing in the Balance Sheet is purchased goodwill. It is considered reasonable to increase the value of goodwill by an amount equal to average of the book value and a valuation made at 3 years' purchase of average super-profit for the last 4 years.

After tax, profits and dividend rates were as follows:

Year	PAT (₹ in lakhs)	Dividend %
2013	3.0	11%
2014	3.5	12%
2015	4.0	13%
2016	4.1	14%

Normal expectation in the industry to which the company belongs is 10%.

Akbar holds 20,000 equity shares of ₹ 10 each fully paid and 10,000 equity shares of ₹ 6 each, fully paid up. He wants to sell away his holdings.

- Determine the break-up value and market value of both kinds of shares.
- What should be the fair value of shares, if controlling interest is being sold?

Answer

$$(i) \text{ Break up value of ₹ 1 of share capital} = \frac{\text{₹ 28.98 lakhs}}{\text{₹ 16.00 lakhs}} = ₹ 1.81$$

$$\text{Break up value of ₹ 10 paid up share} = ₹ 1.81 \times ₹ 10 = ₹ 18.10$$

$$\text{Break up value of ₹ 6 paid up share} = ₹ 1.81 \times ₹ 6 = ₹ 10.86$$

Market value of shares:

$$\text{Average dividend} = \left(\frac{11\% + 12\% + 13\% + 14\%}{4} \right) = 12.5\%$$

$$\text{Market value of ₹ 10 paid up share} = \frac{12.5\%}{10\%} \times 10 = ₹ 12.50$$

$$\text{Market value of ₹ 6 paid up share} = \frac{12.5\%}{10\%} \times 6 = ₹ 7.50$$

(c) Calculation of goodwill

3 Years' purchase of average super-profit = $3 \times 1.655 = ₹ 4.965$ lakhs

Increase in value of goodwill = $\frac{1}{2}$ (book value + 3 years' super profit)
 = $\frac{1}{2}$ (5 + 4.965)
 = ₹ 4.9825 lakhs

Net assets as revalued including book value of goodwill (19 + 5)	24.00
Add: Increase in goodwill (rounded-off)	<u>4.98</u>
Net assets available for shareholders	<u>28.98</u>

Note: In the above solution, tax effect of disputed bonus and corporate dividend tax has been ignored. Also the increase in value of goodwill has been calculated on the basis of the capital employed (excluding purchased goodwill).

Question 13

The following is the summarized Balance Sheet of N Ltd. as on 31st March, 2017:

Balance Sheet

Liabilities	₹	Assets	₹
4,00,000 Equity shares of ₹ 10 each fully paid	40,00,000	Building	24,00,000
13.5% Redeemable preference shares of ₹ 100 each fully paid	20,00,000	Machinery	22,00,000
General Reserve	10,00,000	Furniture	10,00,000
Profit and Loss Account	3,20,000	Vehicles	18,00,000
Bank Loan (Secured against fixed assets)	12,00,000	Investments	16,00,000
Trade Payables	37,00,000	Inventory	11,00,000
		Trade Receivables	18,00,000
		Bank Balance	<u>3,20,000</u>
	<u>1,22,20,000</u>		<u>1,22,20,000</u>

Further information:

- (i) Return on capital employed is 20% in similar businesses.
- (ii) Fixed assets are worth 30% more than book value. Inventory is overvalued by ₹ 1,00,000, Trade Receivables are to be reduced by ₹ 20,000. Trade investments, which constitute 10% of the total investment are to be valued at 10% below cost.
- (iii) Trade investments were purchased on 1.4.2016. 50% of Non-Trade Investments were purchased on 1.4.2014 and the rest on 1.4.2015. Non-Trade Investments yielded 15% return on cost.

9.33 Financial Reporting

- (iv) In 2014-2015 new machinery costing ₹ 2,00,000 was purchased, but wrongly charged to revenue. This amount should be adjusted taking depreciation at 10% on reducing value method.
- (v) In 2015-2016 furniture with a book value of ₹ 1,00,000 was sold for ₹ 60,000.
- (vi) For calculating goodwill two years purchase of super profits based on simple average profits of last four years are to be considered. Profits of last four years are as under:
2013-2014 ₹ 16,00,000, 2014-2015 ₹ 18,00,000, 2015-2016 ₹ 21,00,000, 2016-2017 ₹ 22,00,000.
- (vii) Additional depreciation provision at the rate of 10% on the additional value of Plant and Machinery alone may be considered for arriving at average profit.

Find out the intrinsic value of the equity share. Income-tax and Dividend tax are not to be considered.

Answer

Calculation of intrinsic value of equity shares of N Ltd.

1. Calculation of Goodwill

(i) Capital employed

Fixed Assets	₹	₹
Building	24,00,000	
Machinery (₹ 22,00,000 + ₹ 1,45,800)	23,45,800	
Furniture	10,00,000	
Vehicles	<u>18,00,000</u>	
	75,45,800	
Add: 30% increase	<u>22,63,740</u>	
	98,09,540	
Trade investments (₹ 16,00,000 × 10% × 90%)	1,44,000	
Trade Receivables (₹ 18,00,000 – ₹ 20,000)	17,80,000	
Inventory (₹ 11,00,000 – ₹ 1,00,000)	10,00,000	
Bank balance	<u>3,20,000</u>	1,30,53,540
Less: Outside liabilities		
Bank Loan	12,00,000	
Trade Payables	<u>37,00,000</u>	(49,00,000)
Capital employed		<u>81,53,540</u>

(ii) Future maintainable profit

Calculation of average profit

	2013-2014 ₹	2014-2015 ₹	2015-2016 ₹	2016-2017 ₹
Profit given	16,00,000	18,00,000	21,00,000	22,00,000
Add: Capital expenditure of machinery charged to revenue		2,00,000		
Loss on sale of furniture			40,000	
	16,00,000	20,00,000	21,40,000	22,00,000
Less: Depreciation on machinery		(20,000)	(18,000)	(16,200)
Income from non-trade investments		(1,08,000)	(2,16,000)	(2,16,000)
Reduction in value of inventory				(1,00,000)
Bad debts				(20,000)
Adjusted profit	16,00,000	18,72,000	19,06,000	18,47,800
				₹
Total adjusted profit for four years (2013-2014 to 2016-2017)				72,25,800
Average profit (₹ 72,25,800/4)				18,06,450
Less: Depreciation at 10% on additional value of machinery (22,00,000 + 1,45,800) × 30/100 i.e. ₹ 7,03,740				(70,374)
Adjusted average profit				17,36,076

(iii) Normal Profit: 20% on capital employed i.e. 20% on ₹ 81,53,540 = ₹ 16,30,708

(iv) Super profit: Expected profit – normal profit

$$₹ 17,36,076 - ₹ 16,30,708 = ₹ 1,05,368$$

(v) Goodwill: 2 years' purchase of super profit

$$₹ 1,05,368 \times 2 = ₹ 2,10,736$$

2. Net assets available to equity shareholders

	₹	₹
Goodwill as calculated in 1(v) above		2,10,736
Sundry fixed assets		98,09,540
Trade and Non-trade investments		15,84,000
Trade Receivables		17,80,000
Inventory		10,00,000

9.35 Financial Reporting

Bank balance		<u>3,20,000</u>
		1,47,04,276
Less: Outside liabilities		
Bank loan	12,00,000	
Trade Payables	<u>37,00,000</u>	
		(49,00,000)
Preference share capital		<u>(20,00,000)</u>
Net assets for equity shareholders		<u>78,04,276</u>

3. Valuation of equity shares

$$\begin{aligned} \text{Value of equity share} &= \frac{\text{Net assets available to equity shareholders}}{\text{Number of equity shares}} \\ &= \frac{\text{₹ } 78,04,276}{4,00,000} = \text{₹ } 19.51 \end{aligned}$$

Note:

1. Depreciation on the overall increased value of assets (worth 30% more than book value) has not been considered. Depreciation on the additional value of only plant and machinery has been considered taking depreciation at 10% on reducing value method while calculating average adjusted profit.
2. Loss on sale of furniture has been taken as non-recurring or extraordinary item.
3. It has been assumed that preference dividend has been paid till date.

Question 14

The Capital Structure of XYZ Ltd., on 31st March, 2017 was as follows:

	₹
Equity Capital – 18,000 Shares of ₹ 100 each	18,00,000
12% Preference Capital – 5,000 Shares of ₹ 100 each	5,00,000
12% Secured Debentures	5,00,000
Reserves	5,00,000
Profit earned before Interest and Taxes during the year	7,20,000
Tax Rate	40%
Generally the return on equity shares of this type of Industry is 15%.	

Subject to:

- The profit after tax covers Fixed Interest and Fixed Dividends at least 4 times.
- The Debt Equity ratio shall be at least 2;
- Yield on shares is calculated at 60% of distributed profits and 10% of undistributed profits;
- The Company has been paying regularly an Equity dividend of 15%.
- The risk premium for Dividends is generally assumed at 1%.

Find out the value of Equity shares of the Company.

Answer

Calculation of profit after tax (PAT)	₹	₹
Profit before interest & tax (PBIT)		7,20,000
Less: Debenture interest (₹ 5,00,000 × 12/100)		<u>(60,000)</u>
Profit before tax (PBT)		6,60,000
Less: Tax @ 40%		<u>(2,64,000)</u>
Profit after tax (PAT)		3,96,000
Less: Preference dividend $\left(₹ 5,00,000 \times \frac{12}{100} \right)$	60,000	
Equity dividend $\left(₹ 18,00,000 \times \frac{15}{100} \right)$	<u>2,70,000</u>	<u>(3,30,000)</u>
Retained earnings (undistributed profit)		<u>66,000</u>

Calculation of Interest and Fixed Dividend Coverage

$$= \frac{\text{PAT} + \text{Debenture interest}}{\text{Debenture interest} + \text{Preference dividend}} = \frac{₹ 3,96,000 + ₹ 60,000}{₹ 60,000 + ₹ 60,000} = \frac{₹ 4,56,000}{₹ 1,20,000} = 3.8 \text{ times}$$

Calculation of Debt Equity Ratio

$$\begin{aligned} \text{Debt Equity Ratio} &= \frac{\text{Debt (long term loans)}}{\text{Equity (shareholders' funds)}} \\ &= \frac{\text{Debentures}}{\text{Preference share capital} + \text{Equity share capital} + \text{Reserves}} \\ &= \frac{₹ 5,00,000}{₹ 5,00,000 + ₹ 18,00,000 + ₹ 5,00,000} \end{aligned}$$

9.37 Financial Reporting

$$\text{Debt Equity Ratio} = \frac{\text{₹ } 5,00,000}{\text{₹ } 28,00,000} = .179$$

The ratio is less than the prescribed ratio.

Calculation of Yield on Equity Shares

Yield on equity shares is calculated at 60% of distributed profits and 10% of undistributed profits:

60% of distributed profits (60% of ₹ 2,70,000)	1,62,000
10% of undistributed profits (10% of ₹ 66,000)	<u>6,600</u>
	<u>1,68,600</u>

$$\text{Yields on equity shares} = \frac{\text{Yield on shares}}{\text{Equity share capital}} \times 100 = \frac{\text{₹ } 1,68,600}{\text{₹ } 18,00,000} \times 100 = 9.37\%$$

Calculation of Expected Yield on Equity Shares	
Normal return expected	15%
Add: Risk premium for low interest and fixed dividend coverage (3.8 < 4)	1%*
Risk for debt equity ratio not required	<u>Nil**</u>
	<u>16%</u>
Value of an Equity Share	
= $\frac{\text{Actual yield}}{\text{Expected yield}} \times \text{Paid up value of a share} = \frac{9.37}{16} \times 100 = \text{₹ } 58.56$	

* When interest and fixed dividend coverage is lower than the prescribed norm, the riskiness of equity investors is high. They should claim additional risk premium over and above the normal rate of return.

** The debt equity ratio is lower than the prescribed ratio that means outside funds (Debts) are lower as compared to shareholders' funds. Therefore, the risk is less for equity shareholders. Therefore, no risk premium is required to be added in this case.

Question 15

The following abridged Balance Sheet as at 31st March, 2017 pertains to Glorious Ltd.

Liabilities	₹ in lakhs	Assets	₹ in lakhs
Share Capital:		Goodwill, at cost	420
180 lakhs Equity shares of ₹ 10 each, fully paid up	1,800	Other Fixed Assets	11,166
90 lakhs Equity shares of ₹ 10		Current Assets	2,910
		Loans and Advances	933

each, ₹ 8 paid up	720		
150 lakh Equity shares of ₹ 5 each, fully paid-up	750		
Reserves and Surplus	5,457		
Secured Loans	4,500		
Current Liabilities	1,242		
Provisions	<u>960</u>		
	<u>15,429</u>		<u>15,429</u>

You are required to calculate the following for each one of the three categories of equity shares appearing in the above mentioned Balance Sheet:

- Intrinsic value on the basis of book values of Assets and Liabilities including goodwill;
- Value per share on the basis of dividend yield.

Normal rate of dividend in the concerned industry is 15%, whereas Glorious Ltd. has been paying 20% dividend for the last four years and is expected to maintain it in the next few years; and

- Value per share on the basis of EPS.

For the year ended 31st March, 2017 the company has earned ₹ 1,371 lakhs as profit after tax, which can be considered to be normal for the company. Average EPS for a fully paid share of ₹ 10 of a Company in the same industry is ₹ 2.

Answer

- Intrinsic value on the basis of book values**

	₹ in lakhs	₹ in lakhs
Goodwill		420
Other Fixed Assets		11,166
Current Assets		2,910
Loans and Advances		<u>933</u>
		15,429
Less: Secured loans	4,500	
Current liabilities	1,242	
Provisions	<u>960</u>	<u>(6,702)</u>
		8,727
Add: Notional call on 90 lakhs equity shares @ ₹ 2 per share		<u>180</u>
		<u>8,907</u>

Equivalent number of equity shares of ₹ 10 each.

9.39 Financial Reporting

	<i>No. of Equity shares</i>
Fully paid shares of ₹ 10 each	180
Partly-paid shares after notional call	90
Fully paid shares of ₹ 5 each, $\left[\frac{150 \text{ lakhs}}{10} \times 5 \right]$	<u>75</u>
	<u>345</u>

$$\text{Value per equivalent share of ₹ 10 each} = \frac{8,907 \text{ lakhs}}{345 \text{ lakhs}} = ₹ 25.82$$

Hence, intrinsic values of each equity share are as follows:

Value of fully paid share of ₹ 10 = ₹ 25.82 per equity share.

Value of share of ₹ 10, ₹ 8 paid-up = ₹ 25.82 – ₹ 2 = ₹ 23.82 per equity share.

Value of fully paid share of ₹ 5 = $\frac{25.82}{2} = ₹ 12.91$ per equity share.

(ii) Valuation on dividend yield basis:

$$\text{Value of fully paid share of ₹ 10} = \frac{20}{15} \times 10 = ₹ 13.33$$

$$\text{Value of share of ₹ 10, ₹ 8 paid-up} = \frac{20}{15} \times 8 = ₹ 10.67$$

$$\text{Value of fully paid share of ₹ 5} = \frac{20}{15} \times 5 = ₹ 6.67$$

(iii) Valuation on the basis of EPS:

Profit after tax = ₹ 1,371 lakhs

Total share capital = ₹ (1,800 + 720 + 750) lakhs = ₹ 3,270 lakhs

$$\text{Earning per rupee of share capital} = \frac{1,371 \text{ lakhs}}{3,270 \text{ lakhs}} = ₹ 0.419$$

Earning per fully paid share of ₹ 10 = ₹ 0.419 × 10 = ₹ 4.19

Earning per share of ₹ 10 each, ₹ 8 paid-up = ₹ 0.419 × 8 = ₹ 3.35

Earning per share of ₹ 5, fully paid-up = ₹ 0.419 × 5 = ₹ 2.10

$$\text{Value of fully paid share of ₹ 10} = \frac{4.19}{2} \times 10 = ₹ 20.95$$

$$\text{Value of share of ₹ 10, ₹ 8 paid-up} = \frac{3.35}{2} \times 10 = ₹ 16.75$$

$$\text{Value of fully paid share of ₹ 5} = \frac{2.10}{2} \times 10 = ₹ 10.50$$

Question 16

The directors of a public limited company are considering the acquisition of the entire share capital of an existing company X Ltd engaged in a line of business suited to them. The directors feel that acquisition of X will not create any further risk to their business interest.

The following is the summarized Balance Sheet of X Ltd., as at 31st December, 2016:

Liabilities	₹	Assets	₹
Share Capital: 4,000 equity shares of ₹ 100 each fully paid-up	4,00,000	Fixed assets	6,00,000
General reserve	3,00,000	Current assets:	
Bank overdraft	2,40,000	Inventory	2,00,000
Trade Payables	<u>3,00,000</u>	Trade Receivables	3,40,000
	<u>12,40,000</u>	Cash and bank balances	1,00,000
			<u>12,40,000</u>

X's financial records for the past five years were as under:

	2016 ₹	2015 ₹	2014 ₹	2013 ₹	2012 ₹
Profits	80,000	74,000	70,000	60,000	62,000
Extra-ordinary item(s)	3,500	4,000	(6,000)	(8,000)	(1,000)
	83,500	78,000	64,000	52,000	61,000
Less: Dividends	48,000	40,000	40,000	32,000	32,000
	35,500	38,000	24,000	20,000	29,000

Additional information:

- There were no changes in the issued capital of X during this period.
- The estimated values of X Ltd.'s assets on 31.12.2016 are:

	Replacement cost ₹	Realizable value ₹
Fixed assets	8,00,000	5,40,000
Inventory	3,00,000	3,20,000

9.41 Financial Reporting

- (iii) It is anticipated that 1% of the Trade Receivables may prove to be difficult to be realized.
- (iv) The cost of capital to the acquiring company is 10%.
- (v) The current return of an investment of the acquiring company is 10%. Quoted companies with similar businesses and activities as X have a P/E ratio approximating to 8, although these companies tend to be larger than X.

Required:

Estimate the value of the total equity capital of X Ltd., on 31.12.2016 using each of the following bases:

- (a) Balance sheet value
- (b) Replacement cost
- (c) Realizable value
- (d) P/E ratio model.

Answer

			₹	₹
(a)	Balance Sheet Value			
	Capital		4,00,000	
	Reserve		<u>3,00,000</u>	7,00,000
(b)	Replacement cost value			
	Capital		4,00,000	
	Reserve		3,00,000	
	Appreciation:			
	Fixed assets	2,00,000		
	Inventory	<u>1,00,000</u>	<u>3,00,000</u>	10,00,000
(c)	Realizable value			
	Capital		4,00,000	
	Reserve		3,00,000	
	Appreciation in inventory		1,20,000	
	Depreciation in fixed assets		(60,000)	
	Book debts (Bad)*		<u>(3,400)</u>	7,56,600

- (d) P/E ratio model:** Comparable quoted companies have a P/E ratio of 8. X Ltd. is prima facie small company.

* It has been assumed that estimated bad debts would not be relevant for estimating values under bases (a) and (b).

If a P/E ratio of 6 is adopted, the valuation will be $80,000 \times 6 = ₹ 4,80,000$

If a P/E ratio of 7 were to be adopted, the valuation will be $80,000 \times 7 = ₹ 5,60,000$

Question 17

P Limited is considering the acquisition of R Limited. The financial data at the time of acquisition being:

	<i>P Limited</i>	<i>R Limited</i>
<i>Net profit after tax (₹ in lakhs)</i>	60	12
<i>Number of shares (lakhs)</i>	12	5
<i>Earnings per share (₹)</i>	5	2.40
<i>Market price per share (₹)</i>	150	48
<i>Price earnings ratio</i>	30	20

It is expected that the net profit after tax of the two companies would continue to be ₹ 72 lakhs even after the amalgamation.

Explain the effect on EPS of the merged company under each of the following situations:

(i) *P Ltd. offers to pay ₹ 60 per share to the shareholders of R Ltd.*

(ii) *P Ltd. offers to pay ₹ 78 per share to the shareholders of R Ltd.*

The amount in both cases is to be paid in the form of shares of P Ltd.

Answer

(i) In this case, P Ltd. offers to pay ₹ 60 per share.

The share exchange ratio would be $\frac{60}{150} = 0.4$

It means, P Ltd. would give 0.4 shares for every one share of R Ltd. In other words, P Ltd. would give 2 shares for 5 shares of R Ltd.

The total number of shares to be issued by P Ltd. to R Ltd.

$$= 5,00,000 \times 0.4 = 2,00,000 \text{ shares}$$

or

$$5,00,000 \times \frac{2}{5} = 2,00,000 \text{ shares}$$

Total number of shares of P Ltd. after acquisition of R Ltd.

$$= 12,00,000 + 2,00,000 = 14,00,000 \text{ shares}$$

9.43 Financial Reporting

Calculation of E.P.S. of the amalgamated company

$$= \frac{\text{Total Net Profit after Interest and Tax}}{\text{Total Number of shares}} = \frac{72,00,000}{14,00,000} = ₹ 5.14 \text{ per share}$$

After amalgamation, The EPS of P Ltd., will improve from ₹ 5 to ₹ 5.14 whereas EPS of former shareholders of R Ltd would reduce from present 2.40 per share to $5.14 \times 0.4 = ₹ 2.056$ per share after merger.

- (ii) In this case, P Ltd. offers ₹ 78 per share to the shareholders of R Ltd.

The Exchange Ratio would be $\frac{78}{150} = 0.52$ shares of P Ltd. for each share of R Ltd. In other words, P Ltd would give 52 shares for per 100 shares of R Ltd.

P Ltd would issue $5,00,000 \times 0.52 = 2,60,000$ shares to shareholders of R Ltd.

$$\text{E.P.S. of the Merged Company} = \frac{72,00,000}{12,00,000 + 2,60,000} = 4.93$$

After Merger, there is a dilution in the E.P.S., of P Ltd. from 5 to 4.93.

After Merger E.P.S. of former shareholders of R Ltd.

$$= 4.93 \times 0.52 = 2.56$$

There is a gain of ₹ 0.16 in E.P.S. of merged company in comparison to E.P.S. of R Ltd. of ₹ 2.40 before merger.

Comments: Initial increase in and decrease in earnings per share are possible in both cases of Merger. Generally, the dilution in E.P.S. will occur wherever the Price Earnings ratio of acquired company calculated on the basis of price paid exceed the P/E ratio of acquirer company and vice-versa.

In Situation (i) - The price offered by P Ltd. per share of R Ltd. is ₹ 60 and E.P.S. of R Ltd. is 2.4, which would become the earnings of P Ltd. after merger.

Price Earning (P/E) Ratio of P Ltd. after merger = $\frac{60}{2.40} = 25$. It is lower than the P/E

Ratio of P Ltd. before merger i.e., 30, the E.P.S. of P Ltd. after merger increases to ₹ 5.14.

In Situation (ii) -The price earnings (P/E) ratio offered for Merger is $\frac{78}{2.4} = 32.5$ which is

higher than P/E Ratio of P Ltd. before Merger. Hence, the E.P.S. of P Ltd after merger would get diluted.

Question 18

The following is the Balance Sheet of Bat Ltd. as on 31st March 2017:

Liabilities	₹	Assets	₹
3,00,000 Equity Shares of ₹ 10 each fully paid	30,00,000	Building	20,00,000
12.5% Redeemable preference shares of ₹ 100 each fully paid	20,00,000	Plant & Machinery	22,00,000
General Reserve	11,00,000	Furniture	10,00,000
Profit & Loss A/c	3,00,000	Investments	16,00,000
Secured Loan	10,00,000	Inventory	12,00,000
Trade Payables	30,00,000	Trade Receivables	20,00,000
		Bank Balance	4,00,000
	1,04,00,000		1,04,00,000

Additional Information:

- Fixed assets are worth 20% more than book value. Inventory is overvalued by ₹ 1,00,000. Trade Receivables are to be reduced by ₹ 40,000. Trade investments, which constitute 10% of the total investment are to be valued at 10% below cost.
- Trade investments were purchased on 1.4.2016. 50% of non-trade investments were purchased on 1.4.2015 and the rest on 1.4.2016. Non-trade investments yielded 15% return on cost.
- In 2015-2016, Furniture with a book value of ₹ 1,00,000 was sold for ₹ 50,000. This loss should be treated as non-recurring or extraordinary item for the purpose of calculating adjusted average profit.
- In 2014-2015, new machinery costing ₹ 2,00,000 was purchased, but wrongly charged to revenue. This amount should be adjusted taking depreciation at 10% on reducing value method.
- Return on capital employed is 20% in similar business.
- Goodwill is to be valued at two years purchase of super profits based on simple average profits of last four years.

Profit of last four years are as under:

Year	Amount (₹)
2013-2014	13,00,000
2014-2015	14,00,000
2015-2016	16,00,000
2016-2017	18,00,000

9.45 Financial Reporting

(vii) It is assumed that preference dividend has been paid till date.

(viii) Depreciation on the overall increased value of assets (worth 20% more than book value) need not be considered. Depreciation on the additional value of only plant and machinery to be considered taking depreciation at 10% on reducing value method while calculating average adjusted profit.

Find out the intrinsic value of the equity share. Ignore income tax and dividend tax.

Answer

Calculation of Intrinsic Value of Equity Shares of Bat Ltd.

Net Assets available for Equity Shareholders.

		₹	₹
Goodwill (W.N.1)			4,14,484
Sundry fixed assets			64,14,960
Trade and non-trade investments (1,44,000+14,40,000)			15,84,000
Trade Receivables			19,60,000
Inventory			11,00,000
Bank balance			4,00,000
Total Assets			1,18,73,444
Less: Outside liabilities			
Secured loan	10,00,000		
Trade Payables	30,00,000	40,00,000	
Preference share capital		20,00,000	(60,00,000)
Net assets available for equity shareholders			<u>58,73,444</u>

$$\begin{aligned} \text{Value of an equity share} &= \frac{\text{Net Assets Available to Equity Shareholders}}{\text{Number of Equity Shares}} \\ &= \frac{\text{₹ } 58,73,444}{3,00,000} = \text{₹ } 19.59 \text{ (approx.)} \end{aligned}$$

Working Notes:

1. Calculation of Goodwill

(i) Capital Employed

	₹	₹
Fixed assets:		
Building	20,00,000	

Plant and machinery (₹ 22,00,000 + ₹ 1,45,800)	23,45,800	
Furniture	<u>10,00,000</u>	
	53,45,800	
Add: 20% Appreciation	<u>10,69,160</u>	
	64,14,960	
Trade investments (₹ 16,00,000 x 10% x 90%)	1,44,000	
Trade Receivables (₹ 20,00,000 – ₹ 40,000)	19,60,000	
Inventory (₹ 12,00,000 – ₹ 1,00,000)	11,00,000	
Bank Balance	<u>4,00,000</u>	1,00,18,960
Less: Outside liabilities:		
Secured Loan	10,00,000	
Trade Payables	<u>30,00,000</u>	<u>(40,00,000)</u>
Capital employed		<u>60,18,960</u>

(ii) Future Maintainable Profit

Calculation of Average Adjusted Profit

	2013-2014	2014-2015	2015-2016	2016-2017
	₹	₹	₹	₹
Profit	13,00,000	14,00,000	16,00,000	18,00,000
Add: Capital expenditure on Machinery charged to revenue	-	2,00,000	-	-
Loss on sale of furniture		-	<u>50,000</u>	-
	<u>13,00,000</u>	<u>16,00,000</u>	<u>16,50,000</u>	<u>18,00,000</u>
Less: Depreciation on machinery	-	(20,000)	(18,000)	(16,200)
Income from non-trade investments (W.N.2)			(1,08,000)	(2,16,000)
Reduction in the value of inventory	-	-	-	(1,00,000)
Bad debts	-	-	-	(40,000)
Adjusted Profit	<u>13,00,000</u>	<u>15,80,000</u>	<u>15,24,000</u>	<u>14,27,800</u>
Total adjusted profit for four years				58,31,800
Average profit (₹ 58,31,800/4)				14,57,950
Less: Depreciation at 10% on Additional Value of Machinery (22,00,000 + 1,45,800) x 20% x 10%				<u>(46,916)</u>
Average Adjusted Profit				<u>14,11,034</u>

9.47 Financial Reporting

(iii) Normal Profit @ 20% on Capital Employed,

i.e. 20% on ₹ 60,18,960 = ₹ 12,03,792

(iv) Super Profit = Average Adjusted profit–Normal profit

= ₹ 14,11,034 – ₹ 12,03,792 = ₹ 2,07,242

(v) Goodwill

= 2 years' purchase of super profit = ₹ 2,07,242 x 2 = ₹ 4,14,484

2. Trade investments = ₹ 16,00,000 x 10% x 90% = ₹ 1,44,000

Non-trade investment = ₹ 16,00,000 - ₹ 1,60,000 = ₹ 14,40,000

Non-trade investment purchased on 1.4.2010 = 50% of ₹ 14,40,000 = ₹ 7,20,000

Non-trade investment purchased on 1.4.2011 = ₹ 14,40,000 – ₹ 7,20,000 = ₹ 7,20,000

Income from non-trade investment:

In the year 2015-2016 : 7,20,000 x 15% = ₹ 1,08,000

In the year 2016-2017 : 7,20,000 x 15% = ₹ 1,08,000

7,20,000 x 15% = ₹ 1,08,000

₹ 2,16,000

Question 19

The Balance Sheet of Mulyan Ltd. as on 31st December, 2016 is as follows:

Liabilities	₹	₹	Assets	₹
<i>Share Capital:</i>				
Equity shares of ₹ 10 each less, calls in arrear (₹ 2 for final call)	5,00,000		<i>Fixed Assets:</i>	
	<u>10,000</u>	4,90,000	Machinery	2,30,000
8% Preference shares of ₹ 10 each fully paid		2,00,000	Factory shed	3,00,000
<i>Reserve and Surplus:</i>			Vehicles	60,000
General Reserve		1,50,000	Furniture	25,000
Profit & Loss A/c		1,40,000	Investments	1,00,000
<i>Current Liabilities:</i>			<i>Current Assets:</i>	
Trade Payables		2,70,000	Inventory	2,10,000
Bank Loan		1,00,000	Trade Receivables	3,50,000
			Cash at bank	75,000
		<u>13,50,000</u>		<u>13,50,000</u>

Additional Information:

- (i) Fixed assets are worth 20% above their actual book value, depreciation on appreciated portion of fixed assets is to be ignored for valuation of goodwill.
- (ii) Of the investments, 80%, is non-trading and the Balance is trading. All trade investments are to be valued at 20% below cost. A uniform rate of dividend of 10% is earned on all investments.
- (iii) For the purpose of valuation of shares, Goodwill is to be considered on the basis of 6 year's purchase of the super profits based on simple average profit of the last 3 years. Profits after tax @ 50%, are as follows:

Year	₹
2014	1,90,000
2015	2,00,000
2016	2,50,000

- (iv) In a similar business, return on capital employed is 20%. In 2014, a new furniture costing ₹ 10,000 was purchased but wrongly charged to revenue. No effect has yet been given for rectifying the same. Depreciation is charged on furniture @ 10% p.a. (Diminishing Balance Method).

Find out the value of each fully paid and partly paid equity share.

Answer

Valuation of an equity share

$$\begin{aligned} \text{Value of an equity share} &= \frac{\text{Net assets available to equity shareholders (W.N. 6)}}{\text{Number of equity shares}} \\ &= 9,47,746 / 50,000 = ₹ 18.95492 \end{aligned}$$

Value of a ₹ 10 fully paid up share = ₹ 18.95492 per share

Value of ₹ 10 share, ₹ 8 per share paid up = (₹ 18.95492 – ₹ 2) per share
= ₹ 16.95492 per share

Working Notes:**1. Capital employed**

	₹	₹
Fixed Assets:		
Machinery	2,30,000	
Factory shed	3,00,000	
Furniture (₹ 25,000 + ₹ 7,290)	32,290	

9.49 Financial Reporting

Vehicles	<u>60,000</u>	
	6,22,290	
Add: 20% increase	<u>1,24,458</u>	
	7,46,748	
Trade investments (₹ 1,00,000 × 20% × 80%)	16,000	
Inventory in trade	2,10,000	
Trade Receivables	3,50,000	
Cash at bank	<u>75,000</u>	13,97,748
Less: Outside liabilities:		
Bank Loan	1,00,000	
Trade Payables	<u>2,70,000</u>	<u>(3,70,000)</u>
Capital employed		<u>10,27,748</u>

2. Calculation of average adjusted profit

	2014 ₹	2015 ₹	2016 ₹
Profit after tax	1,90,000	2,00,000	2,50,000
Add: Tax @ 50%	<u>1,90,000</u>	<u>2,00,000</u>	<u>2,50,000</u>
Profit before tax	3,80,000	4,00,000	5,00,000
Add: Capital expenditure on furniture	10,000		
Less: Depreciation on furniture*	(1,000)	(900)	(810)
Income from non-trade investments	<u>(8,000)</u>	<u>(8,000)</u>	<u>(8,000)</u>
	3,81,000	3,91,100	4,91,190
Less: Tax @ 50%	<u>(1,90,500)</u>	<u>(1,95,550)</u>	<u>(2,45,595)</u>
Adjusted profit	<u>1,90,500</u>	<u>1,95,550</u>	<u>2,45,595</u>

	₹
Total adjusted profit for three years (1,90,500 + 1,95,550 + 2,45,595)	6,31,645
Adjusted Average profit (₹ 6,31,645/3)	2,10,548

3. Normal Profit: 20% on capital employed i.e. 20% on ₹ 10,27,748 = ₹ 2,05,550

* Furniture is assumed to be purchased at the beginning of the year and therefore, depreciation is charged for the whole year in 2014.

4. Super profit: Average Adjusted profit – Normal profit
= ₹ 2,10,548 – ₹ 2,05,550 = ₹ 4,998
5. Goodwill: 6 years' purchase of super profit
= ₹ 4,998 × 6 = ₹ 29,988
6. Net assets available to equity shareholders

	₹
Capital employed (W.N.1)	10,27,748
Goodwill (W.N.5)	29,998
Add: Non-trade investments	<u>80,000</u>
	11,37,746
Less: Preference share capital	<u>(2,00,000)</u>
	9,37,746
Add: Notional calls received for calls in arrears	<u>10,000</u>
Net assets for equity shareholders	<u>9,47,746</u>

Question 20

From the following information, calculate the value of a share if you want to

- (i) buy a small lot of shares;
(ii) buy a controlling interest in the company.

Year	Profit (₹)	Capital Employed (₹)	Dividend %
2013	55,00,000	3,43,75,000	12
2014	1,60,00,000	8,00,00,000	15
2015	2,20,00,000	10,00,00,000	18
2016	2,50,00,000	10,00,00,000	20

The market expectation is 12%.

Answer

- (i) **Buying a small lot of shares:** If the purpose of valuation is to provide data base to aid a decision of buying a small (non-controlling) position of the equity of a company, dividend yield method is most appropriate. Dividend rate is rising continuously, weighted average will be more appropriate for calculation of average dividend.

Year	Rate of dividend	Weight	Product
2013	12	1	12
2014	15	2	30

9.51 Financial Reporting

2015	18	3	54
2016	20	<u>4</u>	<u>80</u>
		<u>10</u>	<u>176</u>

$$\text{Average dividend} = \frac{176}{10} = 17.6\%$$

Value of share on the basis of dividend for buying a small lot of shares will be

$$\frac{\text{Average dividend rate}}{\text{Market expectation rate}} \times 100 = \frac{17.6}{12} \times 100 = ₹ 146.67 \text{ per share.}$$

- (ii) **Buying a controlling interest in the company:** If the purpose of valuation is to provide data base to aid a decision of buying controlling interest in the company, total profit will be relevant to determine the value of shares as the shareholders have capacity to influence the decision of distribution of profit. As the profit is rising, weighted average will be more appropriate for calculation of average profit/yield.

Year	Yield % (Profit/Capital employed) x 100	Weight	Product
2013	16	1	16
2014	20	2	40
2015	22	3	66
2016	25	<u>4</u>	<u>100</u>
		<u>10</u>	<u>222</u>

$$\text{Average yield} = \frac{222}{10} = 22.2\%$$

If controlling interest in the company is being taken over, then the value per share will be

$$= \frac{\text{Average yield rate}}{\text{Market expectation rate}} \times 100 = \frac{22.2}{12} \times 100 = ₹ 185 \text{ per share.}$$

Question 21

The majority shareholders of MSL Limited desire to sell their holdings to Influx Funds. The following information has been provided by MSL Limited: ₹ in lacs

Particulars	2014	2015	2016
Equity and Liabilities			
12,000 Equity shares of ₹ 100 each	12.00	12.00	12.00
General Reserve	6.85	7.75	9.00

Profit and Loss Account	2.64	5.95	8.25
Current Liabilities	<u>6.80</u>	<u>5.45</u>	<u>3.85</u>
	<u>28.29</u>	<u>31.15</u>	<u>33.10</u>
Assets			
Tangible Assets	12.00	13.00	14.00
Intangible Assets			
Goodwill	6.30	5.30	4.30
Current Assets			
Inventories	6.28	7.34	8.51
Other Current Assets	<u>3.71</u>	<u>5.51</u>	<u>6.29</u>
	<u>28.29</u>	<u>31.15</u>	<u>33.10</u>

- (i) The valuation of tangible assets has been done by a professional valuer and increase of 10% in year 2013-2014 and 2014-2015 and 12.5% in 2015-2016 is estimated over the given book value.
- (ii) The inventories have been valued at ₹ 6.32 lacs as on 31st March 2014, ₹ 8.47 lacs as on 31st March 2015 and ₹ 10.68 lacs as on 31st March, 2016.
- (iii) The company has been charging depreciation @ 10% p.a.
- (iv) The balance of Profit and Loss account and General Reserve on 1st April, 2013 was ₹ 2.18 lacs and ₹ 4.25 lacs respectively.
- (v) Tax rate was 30% in all the years.
- (vi) The goodwill shall be revalued based on 4 years purchase of average super profits of last three years.
- (vii) The normal expectation in the industry is 10%.

Calculate the fair value of shares of MSL Limited.

Answer

1. Calculation of Capital Employed

₹ in lacs

	2013-14	2014-15	2015-16
Tangible assets (Refer W.N.)	13.08	14.17	15.58
Inventories	6.32	8.47	10.68
Other current assets	<u>3.71</u>	<u>5.51</u>	<u>6.29</u>
	23.11	28.15	32.25
Less: Current Liabilities	<u>(6.80)</u>	<u>(5.45)</u>	<u>(3.85)</u>

9.53 Financial Reporting

Net assets / Closing capital employed	16.31	22.70	28.70
Opening capital employed (by net worth method for the year 2013-2014 = 12 + 2.18 + 4.25 = 18.43)	18.43	16.31	22.70
Average capital employed (Opening capital employed + closing capital employed) / 2	17.37	19.51	25.70

2. Calculation of Future Maintainable Profit

₹ in lacs

	2013-14	2014-15	2015-16
Closing balance of Profit and Loss Account as on 31 st March	2.64	5.95	8.25
Add back: Transfer to General reserve (in the year 2013-2014 = 6.85 - 4.25 = 2.60)	<u>2.60</u>	<u>0.90</u>	<u>1.25</u>
	5.24	6.85	9.50
Less: Opening Balance	<u>(2.18)</u>	<u>(2.64)</u>	<u>(5.95)</u>
Profit after tax earned during the year	3.06	4.21	3.55
Add back: Tax @ 30%	<u>1.31</u>	<u>1.80</u>	<u>1.52</u>
Profit before tax	4.37	6.01	5.07
Add back: Amortisation of goodwill (see assumption)	-	1.00	1.00
Less: Extra depreciation on upward revaluation	<u>(0.12)</u>	<u>(0.13)</u>	<u>(0.175)</u>
	4.25	6.88	5.895
Add: Upward valuation of closing inventories	0.04	1.13	2.17
Less: Upward valuation of opening inventories	<u>-</u>	<u>(0.04)</u>	<u>(1.13)</u>
	4.29	7.97	6.94
Less: Tax @ 30%	<u>(1.29)</u>	<u>(2.39)</u>	<u>(2.08)</u>
Future Maintainable Profit	<u>3.00</u>	<u>5.58</u>	<u>4.86</u>

3. Calculation of Goodwill

₹ in lacs

	2013-14	2014-15	2015-16
Future Maintainable Profit	3.00	5.58	4.86
Less: Normal profit @ 10% of Average capital employed	<u>(1.74)</u>	<u>(1.95)</u>	<u>(2.57)</u>
Super Profit	1.26	3.63	2.29
Average super profit (1.26 + 3.63 + 2.29)/3			2.39
Goodwill (2.39 x 4 years)			9.56

4. For valuation of shares as per fair value method

A. Value of an Equity Share on net assets basis ₹ in lacs

Net assets as on 2015-2016 excluding goodwill	28.70
Add: Goodwill	<u>9.56</u>
Total net assets	<u>38.26</u>
Number of equity shares	12,000 shares

$$\text{Value of an Equity Share on net assets basis} = \frac{38,26,000}{12,000} = ₹ 318.83$$

B. Value of an equity share on yield basis

	₹ in lacs
Average Future Maintainable Profit [(3.00 + 5.58 + 4.86)/3]	4.48
Less: Transfer to General Reserve - Average transfer [(2.60+0.90+1.25)/3]	<u>(1.58)</u>
Profit available to equity shareholders	<u>2.90</u>
Capitalised value of the profit = $\frac{2.90}{10} \times 100$	29.00

Number of Equity Shares = 12,000 shares

$$\text{Value of an equity share on yield basis} = \frac{29,00,000}{12,000} = ₹ 241.67$$

Fair value of an equity share

$$= \left(\frac{\text{Value of share as per Net assets method} + \text{Value of share as per yield method}}{2} \right)$$

$$= \frac{318.83 + 241.67}{2} = ₹ 280.25 \text{ per share}$$

Working Note:

Value of Tangible Assets for the purpose of calculation of Capital Employed

	2013-14	2014-15	2015-16
Tangible asset as per the Balance Sheet	12.00	13.00	14.00
Add: Upward increase in the value of the asset	<u>1.20</u>	<u>1.30</u>	<u>1.75</u>
	13.20	14.30	15.75
Less: Additional depreciation on the increased value of the asset	<u>(0.12)</u>	<u>(0.13)</u>	<u>(0.175)</u>
	<u>13.08</u>	<u>14.17</u>	<u>15.58</u>

9.55 Financial Reporting

Assumption:

1. Original cost of Goodwill is assumed as ₹ 6.30 lacs only. However, this goodwill has no relevance in future. Therefore, it is a non-recurring item. Hence, while computing future maintainable profit the amortisation of goodwill has been reverted back.
2. Since every year transfer to General reserve was made, so we have also made the necessary adjustment while calculating the profit available to equity shareholders. However, from the information given in the question it was clear that no fixed amount has been transferred to General reserve every year. Therefore, in the absence of the information transfer to General Reserve has been taken as an average of transfers of last 3 years.

Note: The solution given above has been done on the assumption that goodwill is calculated on the basis of Average capital employed. If the solution is done on the basis of closing capital employed then the value of goodwill will be ₹ 8.88 lacs and fair value of an equity share will be ₹ 277.42 per share.

Question 22

Following information is given of the two companies for the year ended 31st March, 2017:

<i>Particulars</i>	<i>Company A</i> ₹ in lakhs	<i>Company B</i> ₹ in lakhs
Equity shares of ₹ 100 each	12.00	15.00
10% Preference shares of ₹ 100 each	9.00	6.00
Profit after tax	4.50	4.50

Assuming market expectation is 15% and 80% of the profits are distributed, what would you pay for the equity shares of the company, if

- (i) You are buying in a small lot?
- (ii) You are buying controlling interest in the company?

Answer

- (i) **Buying a small lot of equity shares:** If the purpose of valuation is to provide data base to aid a decision of buying a small lot (non-controlling position) of the company, dividend capitalization method is most appropriate. Under this method, value of an equity share will be:

Dividend per share/Market capitalization rate × 100

Company A : $(24/15) \times 100 = ₹ 160$ per eq. share

Company B : $(20.80/15) \times 100 = ₹ 138.67$ per eq. share

- (ii) **Buying controlling interest in the company:** If the purpose of valuation is to provide data base to aid a decision of buying controlling interest in the company, EPS method is most appropriate. Under this method, value of an equity share will be:-

Earnings per share/Market capitalization rate x 100

Company A : $(30/15) \times 100 = ₹ 200$ per eq. share

Company B : $(26/15) \times 100 = ₹ 173.33$ per eq. share

Working Note:

Calculation of dividend

	Company A ₹ in lakhs	Company B ₹ in lakhs
Profit after tax	4.50	4.50
Less: Preference dividend	0.90	0.60
	3.60	3.90
No. of shares	12,000	15,000
Earnings for equity share holders	30.00	26.00
Dividend (80%)	24.00	20.80

Valuation of Business

Question 23

Timby Ltd. is in the business of making sports equipment. The Company operates from Thailand. To globalise its operations, Timby has identified Fine Toys Ltd. an Indian Company, as a potential takeover candidate. After due diligence of Fine Toys Ltd. the following information is available:

(a)

Cash Flow Forecasts										(₹ in crore)
Year	10	9	8	7	6	5	4	3	2	1
Fine Toys Ltd.	24	21	15	16	15	12	10	8	6	3
Timby Ltd.	108	70	55	60	52	44	32	30	20	16

- (b) *The net worth of Fine Toys Ltd. (₹ in lakhs) after considering certain adjustments suggested by the due diligence team reads as under:*

Tangible	750
Inventories	145
Receivables	<u>75</u>

9.57 Financial Reporting

		970
Less:		
Trade Payables	165	
Bank Loans	250	(415)
Represented by equity shares of ₹ 1,000 each		555

Talks for takeover have crystalized on the following:

1. Timby Ltd. will not be able to use Machinery worth ₹ 75 lakhs which will be disposed of by them subsequent to take over. The expected realization will be ₹ 50 lakhs.
2. The inventories and receivables are agreed for takeover at values of ₹ 100 and ₹ 50 lakhs respectively which is the price they will realize on disposal.
3. The liabilities of Fine Toys Ltd. will be discharged in full on take over alongwith an employee settlement of ₹ 90 lakhs for the employees who are not interested in continuing under the new management.
4. Timby Ltd. will invest a sum of ₹ 150 lakhs for upgrading the Plant of Fine Toys Ltd. on takeover. A further sum of ₹ 50 lakhs will also be incurred in the second year to revamp the machine shop floor of Fine Toys Ltd.
5. The Anticipated Cash Flows (in ₹ crore) post takeover are as follows:

Year	1	2	3	4	5	6	7	8	9	10
Cash Flows	18	24	36	44	60	80	96	100	140	200

You are required to advise the management the maximum price which they can pay per share of Fine Toys Ltd. if a discount factor of 20 per cent is considered appropriate.

Answer

Calculation of Maximum Price that can be quoted for takeover of Fine Toys Ltd.

	₹ in lakhs	₹ in lakhs
Present (Discounted) value of incremental cash flows (Refer Working Note)		7,845.02
Add: Proceeds from disposal of fixed assets	50.00	
Proceeds from disposal of inventories	100.00	
Receipts from Trade Receivables	<u>50.00</u>	<u>200.00</u>
		8,045.02
Less: Settlement of Trade Payables	165.00	
Bank Loans	250.00	

Employee settlement	90.00	
Renovation of Plant	150.00	
Revamp of machine shop floor (₹ 50 lakhs × 0.6944)*	<u>34.72</u>	<u>(689.72)</u>
Maximum value that can be offered		<u>7,355.30</u>
Maximum price per share of Fine Toys Ltd. (₹ 7,355.30 lakhs / 55,500 shares)		₹ 13,252.79

Working Note:**Present Value of Incremental Cash Flows**

(₹ in lakhs)

Year	Cash flow after takeover	Cash flows before takeover	Incremental Cash flows	Discount factor @ 20%	Discounted Cash flows
1	1,800	1600	200	0.8333	166.66
2	2,400	2000	400	0.6944	277.76
3	3,600	3000	600	0.5787	347.22
4	4,400	3200	1200	0.4823	578.76
5	6,000	4400	1600	0.4019	643.04
6	8,000	5200	2800	0.3349	937.72
7	9,600	6000	3600	0.2791	1,004.76
8	10,000	5500	4500	0.2326	1,046.70
9	14,000	7000	7000	0.1938	1,356.60
10	20,000	10800	9200	0.1615	<u>1,485.80</u>
					<u>7,845.02</u>

Question 24

The summarized Balance Sheet of R Ltd. for the year ended on 31st March, 2015, 2016 and 2017 are as follows:

Liabilities	(₹ in thousands)		
	31.3.2015	31.3.2016	31.3.2017
3,20,000 equity shares of ₹ 10 each, fully paid	3,200	3,200	3,200
General reserve	2,400	2,800	3,200
Profit and Loss account	280	320	480
Trade Payables	1,200	1,600	2,000
	<u>7,080</u>	<u>7,920</u>	<u>8,880</u>

* Discount factor of year 2 @ 20%.

9.59 Financial Reporting

Assets			
Goodwill	2,000	1,600	1,200
Building and Machinery less, depreciation	2,800	3,200	3,200
Inventory	2,000	2,400	2,800
Trade Receivables	40	320	880
Bank balance	240	400	800
	7,080	7,920	8,880

Additional information:

(a) Actual valuations were as under

Building and machinery less, depreciation	3,600	4,000	4,400
Inventory	2,400	2,800	3,200
Net profit (including opening balance after writing off depreciation, goodwill, tax provision and transferred to general reserve)	840	1,240	1,640

- (b) Capital employed in the business at market value at the beginning of 2014-2015 was ₹ 73,20,000 which included the cost of goodwill. The normal annual return on average capital employed in the line of business engaged by R Ltd. is 12½%.
- (c) The balance in the general reserve on 1st April, 2014 was ₹ 20 lakhs.
- (d) The goodwill shown on 31.3.2015 was purchased on 1.4.2014 for ₹ 20 lakhs on which date the balance in the Profit and Loss account was ₹ 2,40,000. Find out the average capital employed in each year.
- (e) Goodwill is to be valued at 5 year's purchase of Super profit (Simple average method). Find out the total value of the business as on 31.3.2017.

Answer

Total value of business	₹
Total net Asset as on 31.3.2017	84,80,000
Less: Goodwill as per Balance Sheet	(12,00,000)
Add: Goodwill as calculated in Working Note 2	<u>41,12,500</u>
Value of Business	<u>1,13,92,500</u>

Working Notes:**1. Capital Employed at the end of each year**

	31.3.2015 ₹	31.3.2016 ₹	31.3.2017 ₹
Goodwill	20,00,000	16,00,000	12,00,000
Building and Machinery (Revaluation)	36,00,000	40,00,000	44,00,000
Inventory (Revalued)	24,00,000	28,00,000	32,00,000
Trade Receivables	40,000	3,20,000	8,80,000
Bank Balance	<u>2,40,000</u>	<u>4,00,000</u>	<u>8,00,000</u>
Total Assets	82,80,000	91,20,000	104,80,000
Less: Trade Payables	<u>(12,00,000)</u>	<u>(16,00,000)</u>	<u>(20,00,000)</u>
Closing Capital	70,80,000	75,20,000	84,80,000
Add: Opening Capital	<u>73,20,000</u>	<u>70,80,000</u>	<u>75,20,000</u>
Total	<u>1,44,00,000</u>	<u>1,46,00,000</u>	<u>1,60,00,000</u>
Average Capital	72,00,000	73,00,000	80,00,000

Since the goodwill has been purchased, it is taken as a part of Capital employed.

2. Valuation of Goodwill

	31.3.2015	31.3.2016	31.3.2017
(i) Future Maintainable Profit			
Net Profit as given	8,40,000	12,40,000	16,40,000
Less: Opening Balance	(2,40,000)	(2,80,000)	(3,20,000)
Adjustment for Valuation of Opening Inventory	-	(4,00,000)	(4,00,000)
Add: Adjustment for Valuation of closing inventory	4,00,000	4,00,000	4,00,000
Goodwill written off	-	4,00,000	4,00,000
Transferred to General Reserve	<u>4,00,000</u>	<u>4,00,000</u>	<u>4,00,000</u>
Future Maintainable Profit	14,00,000	17,60,000	21,20,000
Less: 12.50% Normal Return	<u>(9,00,000)</u>	<u>(9,12,500)</u>	<u>(10,00,000)</u>
(ii) Super Profit	5,00,000	8,47,500	11,20,000

(iii) **Average Super Profit** = ₹ (5,00,000 + 8,47,500 + 11,20,000) ÷ 3 = ₹ 8,22,500

(iv) **Value of Goodwill** at five years' purchase = ₹ 8,22,500 × 5 = ₹ 41,12,500.

9.61 Financial Reporting

Question 25

NRPL (Nuclear Reactors Private Limited) is engaged in the business of design and construction of nuclear reactors that are supplied exclusively to the Atomic Energy Department. The core component of such reactors is outsourced by NRPL from FIL (Fusion Industrials Ltd.) the sole manufacturer of this item. NRPL wants to gain leadership in this industry and seeks to take over FIL. NRPL estimates that its Goodwill in the industry will increase by a minimum of ₹ 300 crores consequent on the acquisition. NRPL has made the following calculation of the economic benefits presently available and that foreseen as a result of the acquisition.

(i) Projected Cash Flows of NRPL for the next 5 years:

Year	1	2	3	4	5
Cash flow (₹ in crores)	1,000	1,500	2,000	2,500	3,000

(ii) Projected Cash Flow of FIL for the next 5 years.

Year	1	2	3	4	5
Cash flow (₹ in crores)	400	400	600	800	1,000

(iii) Audited net worth of FIL

	₹ in crores
Fixed assets	2,000
Investments (non-trade)	1,000
Current assets	<u>1,000</u>
Total	4,000
Current liabilities	<u>1,000</u>
Net worth	<u>3,000</u>

(iv) Other information:

- 10% of the fixed assets of FIL will not be required in the event of the acquisition and the same has ready buyers for ₹ 100 crore.
- Current Assets include surplus inventory of ₹ 20 crore that can realize ₹ 30 crore.
- Investments have a ready market for ₹ 1,500 crore.
- The current liabilities are to be paid off immediately; ₹ 510 crores are payable on account of a compensation claim awarded against FIL, which has been treated as a contingent liability in the accounts on which 20 percent was provided for.

(v) NRPL has estimated the combined cash flows post merger as under:

Year	1	2	3	4	5
Cash flow (₹ in crores)	1,500	2,000	2,500	3,000	3,500

You are required to advise NRPL the maximum value it can pay for takeover of FIL; also show the current valuation of FIL as a 'Stands Alone' entity. The Discount rate of 15% is advised appropriate, values for which are given below:

Year	P.V
1	0.870
2	0.756
3	0.658
4	0.572
5	0.497

Answer

(1) Calculation of operational synergy expected to arise out of merger

(₹ in crores)

Year	1	2	3	4	5
Projected cash flows of NRPL after merger with FIL	1,500	2,000	2,500	3,000	3,500
Less: Projected cash flows of NRPL Ltd. without merger	<u>(1,000)</u>	<u>(1,500)</u>	<u>(2,000)</u>	<u>(2,500)</u>	<u>(3,000)</u>
	<u>500</u>	<u>500</u>	<u>500</u>	<u>5,00</u>	<u>500</u>

(2) Valuation of FIL in case of merger

Year	Cash Flows from operations (₹ in crores)	Discount Factor	Discounted Cash Flow (₹ in crores)
1	500	0.870	435.00
2	500	0.756	378.00
3	500	0.658	329.00
4	500	0.572	286.00
5	500	0.497	<u>248.50</u>
			<u>1,676.50</u>

9.63 Financial Reporting

(3) Maximum value to be quoted

	₹ in crores	₹ in crores
Value as per discounted cash flows from operations		1,676.50
Add: Increase in goodwill of NRPL on acquisition of FIL		<u>300</u>
		1,976.50
Add: Cash to be collected immediately by disposal of assets:		
Fixed Assets	100	
Investments	1,500	
Inventory	<u>30</u>	<u>1,630.00</u>
		3,606.50
Less: Current liabilities (1,000 – 102) (See Note below)	898	
Compensations claim	<u>510</u>	<u>(1,408.00)</u>
		<u>2,198.50</u>

So, NRPL can quote as high as ₹ 2,198.50 crores for taking over the business of FIL.

(4) Valuation of FIL ignoring merger (as a 'Stand Alone' entity)

Year	Cash Flows (₹ in crores)	Discount Factor	Discounted Cash Flow (₹ in crores)
1	400	0.870	348.00
2	400	0.756	302.40
3	600	0.658	394.80
4	800	0.572	457.60
5	1,000	0.497	<u>497.00</u>
			<u>1,999.80</u>

Note: As per adjustment (d) given in point (iv), Provision of ₹ 102 crores (i.e. 20% on ₹ 510 crores) was made for contingent liabilities. It implies that this provision is included in the current liabilities covered under point (iii). Therefore, payment of current liabilities has been paid after deduction of the provision amount of ₹ 102 crores and full payment of contingent liability of ₹ 510 crores has been made to avoid double payment of same item.

Question 26

The summarized Balance Sheet of Rose Limited for the year ended on 31st March, 2015, 2016 and 2017 are as follows:

	(₹ in thousands)		
	31 st March, 2015	31 st March 2016	31 st March 2017
Liabilities			
6,40,000, Equity shares of ₹ 10 each fully paid up	6,400	6,400	6,400
General Reserves	4,800	5,600	6,400
Profit and Loss Account	560	640	960
Trade Payable	2,400	3,200	4,000
Total	14,160	15,840	17,760
Assets			
Goodwill	4,000	3,200	2,400
Tangible Assets (Net)	5,600	6,400	6,400
Inventories	4,000	4,800	5,600
Trade Receivable	80	640	1,760
Cash and Cash Equivalents	480	800	1,600
Total	14,160	15,840	17,760

Additional Information:

(i) Actual valuations were as under:

Tangible Assets	7,200	8,000	8,800
Inventories	4,800	5,600	6,400
Net Profit (Including Opening Balance after writing off depreciation, goodwill, tax provision and transfers to general reserves)	1,680	2,480	3,280

(ii) Capital employed in the business at market value at the beginning of 2014-2015 was ₹ 1,46,40,000 which included cost of goodwill. The normal annual return on average capital employed in the line of business in which Rose Limited is engaged is 12.50%.

(iii) The balance in general reserve as on 1st April, 2014 was ₹ 40 lacs.

(iv) The goodwill shown as on 31st March, 2015 was purchased on 1st April, 2014 for ₹ 40 lacs and the balance in profit and loss account as on 1st April, 2014 was ₹ 4,80,000.

(v) Goodwill is to be valued at 5 years' purchase of super profit by using simple average method.

Find out the average capital employed in each year and total value of business as on 31st March, 2017.

Answer**Total value of business as on 31.03.2017**

	<i>₹ in thousands</i>
Closing Capital Employed as on 31.3.2017	16,960
Less: Goodwill appearing in the Balance Sheet as purchased goodwill	(2,400)
Add: Goodwill	<u>8,225</u>
Total Value of Business	<u>22,785</u>

Working Notes:**1. Calculation of Average Capital Employed**

	<i>31.3.2015 ₹ in thousands</i>	<i>31.3.2016 ₹ in thousands</i>	<i>31.3.2017 ₹ in thousands</i>
Purchased Goodwill*	4,000	3,200	2,400
Tangible Assets	7,200	8,000	8,800
Inventories	4,800	5,600	6,400
Trade Receivables	80	640	1,760
Cash & Cash Equivalents	<u>480</u>	<u>800</u>	<u>1,600</u>
	16,560	18,240	20,960
Less: Trade payables	<u>(2,400)</u>	<u>(3,200)</u>	<u>(4,000)</u>
Closing Capital Employed	14,160	15,040	16,960
Add: Opening Capital Employed	<u>14,640</u>	<u>14,160</u>	<u>15,040</u>
Total	<u>28,800</u>	<u>29,200</u>	<u>32,000</u>
Average Capital Employed (ACE)	<u>14,400</u>	<u>14,600</u>	<u>16,000</u>

*Since the goodwill has been purchased, it is taken as a part of capital employed. However, writing off of the goodwill is an extra-ordinary item, therefore not considered while calculating Future Maintainable Profit.

2. Valuation of Goodwill**(i) Future Maintainable Profit**

	<i>31.3.2015 ₹ in thousands</i>	<i>31.3.2016 ₹ in thousands</i>	<i>31.3.2017 ₹ in thousands</i>
Future Maintainable Profit	1,680	2,480	3,280
Less : Opening Profit	(480)	(560)	(640)

Add: Appreciation of closing inventory	800	800	800
Less: Appreciation of opening inventory	-	(800)	(800)
Add: Transferred to General Reserve	800	800	800
Goodwill written off		<u>800</u>	<u>800</u>
	2,800	3,520	4,240
Less: Normal Return @ 12.5% on ACE	<u>(1,800)</u>	<u>(1,825)</u>	<u>(2,000)</u>
(ii) Super Profit	<u>1,000</u>	<u>1,695</u>	<u>2,240</u>

$$(iii) \text{ Average Super Profit} = \left[\frac{1,000 + 1,695 + 2,240}{3} \right] = 1,645 \text{ thousands}$$

$$(iv) \text{ Value of Goodwill at five years' purchase} \\ = ₹ 1,645 \text{ thousands} \times 5 = ₹ 8,225 \text{ thousands.}$$

Exercise

Question 1

The summarised Balance Sheets of X Ltd. are as follows:

	(₹ in lakhs)	
	As at 31.3.2016	As at 31.3.2017
Liabilities		
Share Capital	1,000.0	1,000.0
General Reserve	800.0	850.0
Profit and Loss Account	120.0	175.0
Term Loans	370.0	330.0
Trade Payables	70.0	90.0
Provision for Tax	22.5	25.0
Dividend payable	<u>200.0</u>	<u>250.0</u>
	<u>2,582.5</u>	<u>2,720.0</u>
Assets		
Fixed Assets and Investments (Non-trade)	1,600.0	1,800.0
Inventory	550.0	600.0
Trade Receivables	340.0	220.0
Cash and Bank	<u>92.5</u>	<u>100.0</u>
	<u>2,582.5</u>	<u>2,720.0</u>

9.67 Financial Reporting

Other Information:

1. Current cost of fixed assets excluding non-trade investments on 31.3.2016 ₹ 2,200 lakhs and on 31.3.2017 ₹ 2,532.8 lakhs.
2. Current cost of inventory on 31.3.2016 ₹ 670 lakhs and on 31.3.2017 ₹ 750 lakhs.
3. Non-trade investments in 10% government securities ₹ 490 lakhs.
4. Trade Receivables include foreign exchange Trade Receivables amounting to \$ 70,000 recorded at the rate of \$ 1 = ₹ 17.50 but the closing exchange rate was \$ 1 = ₹ 21.50.
5. Trade Payables include foreign exchange Trade Payables amounting to \$ 1,20,000 recorded at the rate of \$ 1 = ₹ 16.50 but the closing exchange rate was \$ 1 = ₹ 21.50.
6. Profit included ₹ 120 lakhs being government subsidy which is not likely to recur.
7. ₹ 247 lakhs being the last instalment of R and D cost were written off the profit and loss account. This expenditure is not likely to recur.
8. Tax rate during 2016-2017 was 50% effective future tax rate is estimated at 40%.
9. Normal rate of return is expected at 15%.

Based on the information furnished, Mr. Iral, a director contends that the company does not have any goodwill. Examine his contention.

[Answer: Capital employed as at 31.3.14 and 31.3.15 will be ₹ 2840 and ₹ 3,154.6 lakhs respectively; average capital employed ₹ 2,997.3 lakhs; Future maintainable profit ₹ 488.88 lakhs; Goodwill ₹ 39.28 lakhs]

Question 2

Capital structure of Lot Ltd. as at 31.3.2017 as under:

	(₹ in lakhs)
Equity share capital	10
10% preference share capital	5
15% debentures	8
Reserves	4

Lot Ltd. earns profits of ₹ 5 lakhs annually on an average before deduction of interest on debentures and income tax which works out to 40%.

Normal return on equity shares of companies similarly placed is 12% provided:

- (a) Profit after tax covers fixed interest and fixed dividends at least 3 times.
- (b) Capital gearing ratio is .75.
- (c) Yield on share is calculated at 50% of profits distributed and at 5% on undistributed profits.

Lot Ltd. has been regularly paying equity dividend of 10%.

Compute the value per equity share of the company considering the paid up value of ₹ 100 per share.

[Answer: Profit for calculation of interest and fixed dividend coverage ₹ 3,48,000; Calculation of interest and fixed dividend coverage: $\frac{3,48,000}{1,70,000} = 2.05$ times; Capital gearing ratio:

$\frac{13,00,000}{14,00,000} = 0.93$ (approximately); Yield on equity shares: $\frac{53,900}{10,00,000} \times 100 = 5.39\%$; Expected yield

of equity shares: 13.00; Value per equity share: = $\frac{5.39}{13.00} \times ₹ 100 = ₹ 41.46$]

Question 3

Write short notes on:

- (i) Difficulties in brand accounting
- (ii) Market value model of business valuation
- (iii) Cost approach of valuation

Question 4

From the following particulars of three companies, ascertain the value of goodwill. Terms and conditions are as follows:

- (i) Assets are to be revalued.
- (ii) Goodwill is to be valued at four years' purchase of average super profits for three years. Such average is to be calculated after adjustment of depreciation at ten per cent on the amount of increase/decrease on revaluation of fixed assets. Income tax is to be ignored.
- (iii) Normal profit on capital employed is to be taken at 10 per cent, capital employed being considered on the basis of net revalued amounts of tangible assets.

The summarized Balance Sheets and relevant information are given below:

(₹ in lakhs)							
Liabilities	P Ltd.	Q Ltd.	R Ltd.	Assets	P Ltd.	Q Ltd.	R Ltd.
Equity shares of ₹ 10 each	12.00	14.00	6.00				-
Reserves	2.00		2.00	Net tangible block	16.00	12.00	10.00
10% Debentures	4.00	-	2.00	Current assets	6.00	5.00	2.00
Trade Payables	4.00	3.00	2.00				
	<u>22.00</u>	<u>17.00</u>	<u>12.00</u>		<u>22.00</u>	<u>17.00</u>	<u>12.00</u>

9.69 Financial Reporting

	<i>P Ltd.</i>	<i>Q Ltd.</i>	<i>R Ltd.</i>
	₹	₹	₹
<i>Revaluation of tangible block</i>	20,00,000	10,00,000	12,00,000
<i>Revaluation of current assets</i>	7,00,000	2,80,000	1,60,000
<i>Average annual profit for three years before charging debenture interest</i>	3,60,000	2,88,000	1,56,000

[Answer: Goodwill of P Ltd. ₹ 7,60,000, Q Ltd. and R Ltd. Nil. Capital employed of P Ltd. ₹19,00,000, Q Ltd. ₹9,80,000 and R Ltd. ₹9,60,000]