Section - B

Valuation of Shares, Accounting and Reporting of Financial Instruments and NBFCs

Valuation of Shares (including Determination of Goodwill, Post-Valuation of Tangible and Intangible Assets)

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SLOB Mapped against the Module

To equip students with in-depth knowledge on the traditional and modern approaches to valuation of business, goodwill and shares based on corporate financial reporting.

Module Learning Objectives

- To make the students understand the perspectives of valuation of shares
- To enrich the students with in depth knowledge about the concept of valuation of a business, of shares, of tangible and intangible assets including goodwill and
- To develop skill in measurement of value of business and shares based on different approaches and by use of different methods.

Valuation of Shares (including Determination of Goodwill, Post-Valuation of Tangible and Intangible Assets)

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The valuation of the shares of a company uses information not restricted to financial statements only and it is also not an integral part of financial accounting in true sense. Valuation of share is essentially connected with valuation of business, valuation of goodwill, valuation of tangible net assets and valuation of other intangible assets.

A share is the smallest unit of ownership of acompany. It happens to be one of the sources by which a company raises funds from the market. The value of a share does not remain static over its life-time. Rather it changes over the period due to various circumstances. Thus, knowing the value of share at a particular point of time is of great importance.

Purpose of Share Valuation

The shares of a company are required to be valued for various purposes. Some of the most important purposes include the following:

1. For selling shares of a shareholder to a purchaser (which are not quoted in the stock exchange)
2. For acquiring a block of shares which may or may not give the holder thereof a controlling interest in the company.
3. To shares by employees of the company where the retention of such shares is limited to the period of their employment.
4. To formulate schemes of merger and acquisition.
5. To acquire interest of dissenting shareholders under a scheme of reconstruction.
6. For granting loans on the basis of security of shares
7. To compensate shareholders on the acquisition of their shares by the government under a scheme of nationalization.
8. For conversion of securities, say preference shares into equity shares.
9. To resolve a deadlock in the management of a company on the basis of the controlling block of shares given to either of the parties.

Factors Affecting Valuation of Shares

The different factors that affect the valuation of shares are:

1. Nature of the industry to which the company belongs
2. The companies past performance
3. Economic conditions of the country

4. Other political and economic factors (e.g., possibility of nationalization, excise duty on goods produced, etc.)
5. Demand and supply of shares
6. Income yielding capacity of the company
7. The availability of sufficient assets over liabilities
8. Proportion of liabilities and capital
9. Rate of proposed dividend and past profit of the company
10. Yield of other related shares of the Stock Exchange.

There are different approaches to valuation and with clear understanding of the purpose of valuation an accountant has to use judgement, experience and knowledge to find the relevant value of a share. The true value remains always unknown and all valuation techniques are applied to find the value nearest to its true value.

The major three approaches to valuation of shares are:

A. Income Approach

B. Net Assets Approach

C. Market Approach

A. Income Approach (Under this approach different alternative terms are used: DCF method, Intrinsic Valuation, Yield value etc.)

The Income Approach indicates the value of a business or equity based on the value of the future income (represented by cash flows, operating profits, net profits or dividends as the case may be) that a business is expected to generate in future. This approach is appropriate in most going concern situations as the worth of a business or equity is generally a function of its ability to earn income/cash flow in future.

The Income approach includes a number of models/Techniques:

(1) Discounted Cash Flow

(2) Dividend Discount Model

(3) Maintainable Profits Basis and

(4) Other bases.

1. Discounted Cash Flow (DCF) model

It indicates the fair market value of a business (or Equity) based on the value of cash flows that the business (or Equity) is expected to earn in future. This method involves the estimation of Net Operating Profits Adjusted Tax (NOPAT) for the projected period, the business's requirement of reinvestment in terms of capital expenditure and incremental working capital and appropriate cost of capital that reflects the risks of the corresponding return.

(a) Merits of DCF model:

(i) Cash flows are unaffected by any differences of accounting policies, principles, conventions and methods.

(ii) It provides the intrinsic or economic value unaffected by market forces.

(b) De-merits of DCF model:

It is hard

(i) to estimate future cash flows, and

(ii) to apply appropriate rate of discounting

(c) Computation of value per share = Value of Equity/ No. of equity shares

Value of Equity = Value of the business less value of Debt Capital

Value of business = Aggregate of future cash flows (or Free Cash flows) discounted at its present worth

(d) Let us see how cash flows are computed so that future cash flows can be projected.

a. Cash Flows (CF) = NOPAT + Depreciation, amortisation, impairment etc. (non-cash expenses charged against profits) + (-) Decrease (Increase) in non-cash working capital

Net Operating Profits Adjusted Tax (NOPAT) = EBIT×(1 -t)

EBIT (Earnings Before Interest and Tax) is Net Operating Profits.

t = Tax Rate = Tax expenses/Earning Before Tax (EBT)

b. Free Cash Flows are of two types: (A) Free Cash Flows to the Firm (FCFF) and (B) Free Cash Flows to the Equity (FCFE)

b1. FCFF = CF – Capex (Capex means capital expenditures made within the business for expansion, replacement etc.)

b2. FCFE {Free Cash Flow to the Equity} = FCFE = Net Income – Increase in non-cash WC – Net Capex + Net Debt Issue

Or, FCFE = FCFF – Interest net of tax + Net Debt Issued

Interest net of tax = Interest × (1 – t)

(e) Terminal Value or continuing value:

As business is a going concern, at the end of the limited period for which future cash flows (CF, FCFF or FCFE) are projected, the terminal value has to be computed by aggregating the discounted cash flows from that moment till infinity. Thus, Terminal Value = ∑DCF commencing from the end of projection period continued up to infinity.

(i) Two assumptions are made for finding terminal value for business valuation:

a. There is an infinite series of cash flows (CF, FCFF or FCFE)

b. Cash flows are either (a) constant or (b) growing at a constant rate

(ii) Growth rate (g) in cash flows is determined by multiplying Re-investment rate (RR) with Return on invested capital (ROIC) or return on capital employed (ROCE in absence of ROIC).

g = RR× ROIC (or, ROCE)

(iii) Re-investment rate = Re-investment/NOPAT, where Re-investment = Net change in non-cash working capital + Net Capex (where, Net Capex = Capex less Depreciation etc.)

(f) Value of business = Aggregate of future cash flows (or Free Cash flows) discounted at its present worth = ∑DCF (for the period future cash flows are projected) + Terminal Value (Continuing Value) discounted at its present worth

Terminal Value (Continuing Value) at constant cash flows assumption = TVn = CF(n+1)/k, where, k is the discounting rate

Terminal Value (Continuing Value) at constant growth rate of cash flows assumption = TVn = CF(n+1)/(k – g), where, k = WACC is the discounting rate

(i) If there is no period of projected cash flows, continuing value is measured at period 0. In that case

Value of business = V0 = Continuing Value = CF1/k (at constant cash flows assumption)

And V0 = CF1/(k – g) [at constant growth rate of cash flows assumption)

(ii) When there is 'n' period of projected cash flows, continuing value is measured at period 'n'. In that case

Value of business = V0 = ∑DCF (for the years 1 to n) + TVn discounted for 'n' years (for the cash flows from n+1 year to infinity)

Illustrative examples of Discounted Cash Flow (DCF) model:

Illustration 1

Yr.	2018	2019	2020	2021	2022	…….
CF (₹)	500	600	700	800	800	continued at 800

(a) Find value of the business on 01-01-2021, given that WACC = 10%.

(b) Find value of the business on 01-01-2020, given that WACC = 10%.

(c) Find value of the business on 01-01-2019, given that WACC = 10%.

Solution:

(a) From the date of valuation all future cash flows are constant at ₹ 800. Thus, in accordance with para 1.6.1 the formula of Continuing value is $V_0 = CF_1/k = V_{1\text{-}1\text{-}21} = CF_{2021}/WACC = 800/10\% = ₹\ 8{,}000$

(b) From the date of valuation future cash flows for 2020 is projected at ₹700 and at the end of the projection period on 01.01.2021 we may apply the formula of Terminal Value which we already found in part (a) at ₹ 8,000. Thus, in accordance with para 1.6.2 the formula of business value is

$V_{1\text{-}1\text{-}20}$ = 700/(1.1) + (800/.1)/(1.1) [DCF for 2020 + PV of the Terminal Value] = 7909

(c) From the date of valuation future cash flows for 2019 and 2020 are projected at ₹600 and ₹700 and at the end of the projection period on 01.01.2021 we may apply the formula of Terminal Value which we already found in part (a) at ₹ 8,000. Thus, in accordance with para 1.6.2 the formula of business value is

$V_{1\text{-}1\text{-}19}$ = 600/(1.1) 700/(1.1)^2 + (800/.1)/(1.1)^2 [DCF for 2019 and 2020 + PV of the Terminal Value]

= **₹7,736 (Approx.)**

Workings: **(₹ in Lakh)**

Particulars	01.01.2019	2019	2020	2021 onwards continued to infinity
CF		600	700	800
Terminal Value (TV)			8,000	
DCF of 2019	545.45455			
DCF of 2020	578.5124			
PV of TV	6611.5702			
$V_{01\text{-}01\text{-}2019}$	**7735.5372**			

Illustration 2

Forthcoming Year 1	₹ in Lakh
Data provided:	
EBIT	700
Depreciation	120
Capex	180
Interest	60
Increase in non-cash working capital	100
Debt Capital	3,000

Further information:

Tax rate = t	25%
WACC	10%
No of equity shares	50,00,000

Find:

(a) NOPAT,

(b) CF,

(c) FCFF,

(d) Value of business based on

  (i) CF;

  (ii) FCFF,

(e) Value of business when growth rate is 5% based on

  (i) CF;

  (ii) FCFF,

(f) Value per share based on FCFF when growth rate id 5% and

(g) Value per share based on FCFE when constant growth rate is 5%.

Solution: (₹ in. Lakh)

(a) NOPAT = EBIT×(1 – t) = 700×(1 - 0.25) = 525

(b) CF = NOPAT + Depreciation - Increase in non-cash working capital = 525 + 120 – 100 = 545

(c) FCFF = CF – Capex = 545 – 180 = 365

(d) Value of business based on

  (i) CF:

  Value of business $= V_0$ = Continuing Value = CF/WACC (at constant cash flows assumption)

  = 545/ 0.1 = 5450

Value of business based on

(ii) FCFF

Value of business = V_0 = Continuing Value = FCFF/WACC (at constant cash flows assumption)
= 365/0.1 = ₹3,650 Lakhs

(e) (i) Value of business = V_0 = Continuing Value at growth rate of 5%= CF/(k – g) = 545/(0.10 – 0.05)
= 545/ 0.05 = ₹ 10,900

(ii) Value of business = V_0 = Continuing Value = FCFF/(k – g) = 365/(0.10 – 0.05) = 365/ 0.05 = ₹7,300

(i) CF; (ii) FCFF

(f) Value per share based on FCFF when constant growth rate is 5%

V_0 = ₹7,300;

Equity = V_0 – Debt Capital = ₹7,300 – ₹3,000 = ₹4,300

No. of equity shares = 50 lakhs

Value per share = ₹4,300/50 = ₹ 86

(f) FCFE = FCFF – Interest net of tax + Net Debt Issued = 365 – 80×(1 – 0.25) + (140 – 90) = 355

Value of equity = FCFE/ (Ke – g) = 355/(0.125 – .05) = 355/0.075 = ₹4,733.33

Value per share = Equity/ n = ₹4,733.33/50 = ₹91.67

(2) Dividend Discount Model

Here, Value per share = Dividend per Share/ Ke [when constant dividend is assumed for infinity]

Value per share = Dividend per Share/ (Ke – g), [when constant growth of dividend is assumed for infinity]

Ke is the cost of equity and g is the growth rate of dividend. This model is based on Gordon's model of share pricing.

(3) Maintainable Profits Basis

Value of equity under Maintainable Profits Basis = Maintainable Profits available to equity/ Equity capitalisation rate (Ke)

Value per share = Value of Equity/no. of equity shares

Average Maintainable Profits are computed to find out expected future earnings of the Equity. Hence all non-recurring or abnormal items of income and expenses are eliminated. Simple or weighted average of past years (excluding any abnormal year) adjusted earnings are computed.

(4) Other bases

(i) Yield-Basis Method:

Yield is the effective rate of return on investments which is invested by the investors. It is always expressed in terms of percentage. Since the valuation of shares is made on the basis of Yield, it is called Yield-Basis Method.

Under Yield-Basis method, valuation of shares is made on either of the following basis:

(a) Profit Basis; or (b) Dividend Basis.

(a) **Under Profit Basis:** Under this method, at first, profit should be ascertained on the basis of past average profit; thereafter, capitalized value of profit is to be determined on the basis of normal rate

of return, and, the same (capitalized value of profit) is divided by the number of shares in order to find out the value of each share.

The following steps are followed for the purpose of valuation:

$$\text{Capitalised Value of Profit} = \frac{\text{Profit}^{1}}{\text{Noramal Rate of Return}} \times 100$$

$$\text{Value of each Equity Share} = \frac{\text{Capitalised Value of Profit}}{\text{Number of Shares}}$$

$$\text{Or, Value of each Equity Share} = \frac{\text{Profit}}{\text{Normal Rate of Return} \times \text{Number of Equity Shares}} \times 100$$

(b) **Under Dividend Basis:** Valuation of shares may be made either (I) on the basis of total amount of dividend, or (II) on the basis of percentage or rate of dividend:

(I) on the basis of Total Value of Dividend:

$$\text{Capitalised Value of Profit} = \frac{\text{Dividend Profit i.e. Total Amount of Dividend}}{\text{Normal Rate of Returni.e. Yield}} \times 100$$

$$\therefore \text{ Value of each Equity Share} = \frac{\text{Capitalised Value of Profit}}{\text{Number of Equity Shares}}$$

$$\text{Or, Value of each Equity Share} = \frac{\text{Divisible Profit} \times 100}{\text{Normal Rate of Return} \times \text{Number of Equity Shares}}$$

(II) On the basis of percentage or Rate of Dividend:

$$\text{Value of each Equity Share} = \frac{\text{Rate of Dividend}}{\text{Normal Rate of Return}} \times \text{Paid-up Value of exach Equity Share}$$

When the Rate of Dividend is not given

$$\text{Rate of Dividend} = \frac{\text{Profit}}{\text{Equity Share Capital (Paid-up)}} \times 100$$

Whether Profit Basis or Dividend Basis method is to be followed for ascertaining the value of shares depends on the shares that are held by the respective shareholders. In other words, the shareholders holding minimum number of shares (i.e., minority holding) may determine the value of shares on dividend basis in order satisfy the rate of dividend which is recommended by the Board of Directors, i.e. such shareholders have no such power to control the affairs of the company.

On the contrary, the shareholders holding maximum number of shares (i.e., majority holding) have got more controlling rights over the affairs of the company including the recommendation for the rate of dividend among others. Under the circumstances, valuation of shares should be made on profit basis. In short, Profit Basis should be followed in the case of Majority Holding, and Dividend Basis should be followed in the case of Non-controlling Holding.

(ii) Fair Value Method:

There are some valuers who do not accept either the Intrinsic Value or the Yield Value for ascertaining the value of shares. They prescribe the Fair Value Method which happens to be the arithmetic mean

of Intrinsic Value Method (net asset method) and Yield Value Method. The same provides a better indication about the value of shares than the earlier two methods.

$$\text{Fair Value} = \frac{(\text{Intrinsic Value} + \text{Yield Value})}{2}$$

B. Net Assets Approach or Asset-Backing Method:

Since the valuation is made on the basis of the assets of the company, it is known as Asset-Basis or Asset-Backing Method. At the same time, the shares are valued on the basis of real internal value of the assets of the company and that is why the method is also termed Intrinsic Value Method or Real Value Basis Method. Under net assets basis value of equity is determined by subtracting ascertained value of liabilities from the value of assets.

This method may be made either:

(a) On a going concern basis; or

(b) On Break-up value basis.

In case of the former, the utility of the assets is to be considered for the purpose of arriving at the value of the assets, but, in the case of the latter, the realizable value of the assets is to be taken.

(1) Valuation of assets and liabilities:

(a) There are three major bases of asset valuation for a going concern:

(I) Book Value;

(II) Net Replacement Value;

(III)Net Realisable Value

Assets include all tangible assets including contingent assets and intangible assets including goodwill.

Liabilities include contingent liabilities also. For valuing equity shares dues of preference shareholders are also considered as liabilities.

(b) In case of liquidation, however, break-up value is computed based on sale value of individual assets and remission value of individual liabilities.

Thus, under net assets approach

Value per share = Net Assets/ no. of equity shares

Net Assets = Value of all tangible assets including contingent assets (using an appropriate basis of valuation) + Value of Goodwill and other Intangible assets – Ascertained value of liabilities including Contingent liabilities and dues of preference shareholders, if any.

Computation of Net Assets

Particulars	₹	₹	₹
Net Assets			
Fixed Assets (PPE)	xxxx		
Investments (Financial assets)	xxxx		
Current Assets	xxxx		
Goodwill if any	xxxx		

Particulars	₹	₹	₹
Total Assets		xxxxx	
Less:			
Current Liabilities (including Contingent Liability)	xxxx		
Debentures	xxxx		
Preference Share Capital (with arrear dividend)	xxxx	xxxxx	
		xxxxx	
Net Assets/Funds Available for Equity Shareholders			xxxxx
Value per share = Net Assets/ No. of equity shares =			xxxxx

Therefore, next we take up valuation of goodwill.

(2) Valuation of Goodwill

Goodwill represents the capacity of the business to earn excess profit for a period of time over normal profit. The value of goodwill is the aggregate of such excess profit for the period of consideration duly discounted to their present worth (or without adjusting for time value of money). The popular measure of determining excess profit or super profit is the average maintainable profits less normal profits. The period for which such excess profit is computed may be assumed to be infinite time or it may be assumed to be limited to certain years (3 to 5 years, for instance).

Accordingly, different methods of valuation of goodwill are broadly classified as follows:

(a) Capitalisation method: It assumes constant super profit for infinite years.

(b) Number of years' purchase method: It assumes constant super profit for limited number of years (usually 3 to 5 years).

(a) Under capitalisation method

(i) aggregate of constant super profits discounted at normal rate of return (= WACC) for infinite number of years is computed.

Goodwill (capitalisation of super profits) = ∑Discounted Super Profits (for infinite years) = Super Profits/Normal rate of return

Super Profits = Average (Simple or Weighted) Maintainable Profits – Normal Profits

Normal Profits = Average Capital Employed×Normal rate of return

[hence, Average Capital Employed = Normal Profits/ Normal rate of return]

Thus, Goodwill = {Average (Simple or Weighted) Maintainable Profits – Normal Profits}/ Normal rate of return

= Average (Simple or Weighted) Maintainable Profits/ Normal rate of return - Normal Profits/ Normal rate of return

Thus, we find:

(ii) Goodwill = Capitalised value of Average Maintainable Profits – Average Capital Employed

[When goodwill is valued in this manner it is not at all different from the capitalisation of super profit method, but it is popularly named as capitalisation of Average Maintainable Profits method]

(b) Number of years' purchase method:

(i) Super profits method:

(I) Goodwill = Super profits × number of years' purchase (without adjusting for time value of money). It is assumed that the business will earn constant super profits for a fixed number of years. Value of goodwill is the aggregate of such super profits.

(II) Goodwill = Super Profits × Present Value of Annuity (It computes the present value worth, and is called Annuity method)

(ii) Average Maintainable Profits method:

Instead of super profits, Average Maintainable Profits are used to find value of goodwill.

(I) Goodwill = Average Maintainable Profits × number of years' purchase (without adjusting for time value of money). It is assumed that the business will earn constant Average Maintainable Profits for a fixed number of years. Value of goodwill is the aggregate of such Average Maintainable Profits.

(II) Goodwill = Average Maintainable Profits × Present Value of Annuity (It computes the present value worth, and is called Annuity method)

[Thus, under Annuity method both super profit and average maintainable profits are used]

Now, we shall see how the values for the following variables are determined for valuation of goodwill:

(i) Average (Simple or Weighted) Maintainable Profits

(ii) Average Capital Employed

(ii) Normal rate of return

Average Maintainable Profits are computed to find out expected future operating income of the business. Hence all non-operating and non-recurring or abnormal items of income and expenses are eliminated.

In the same way corresponding assets (investments etc) and liabilities are also excluded from Average Capital Employed.

Normal Rate Of Return: Weighted Average Cost of Capital (WACC) represents normal rate of return.

WACC = Weight of Equity × Cost of Equity + Weight of Debt Capital × Cost of Debt Capital

(3) Valuation of other intangible assets

Other intangible assets are identifiable and they can be valued on (i) cost basis, (ii) market basis and (iii) income basis.

(i) Value of intangible asset under cost basis is the current replacement cost of the identified intangible asset

(ii) Value of intangible asset under market basis is similar to the market approach for business valuation. Market value of equivalent asset in peer group is related to its base value (such as historical cost, replacement cost or book value or ascertainable income from such asset) and the average of the relatives or multiples is applied on the base value of the required intangible asset.

Thus, Value of intangible asset = Base value × Market value relative or multiple.

(iii) Value of intangible asset under income basis is similar to the income approach for business valuation. As life of other intangible asset is finite capitalisation method is not applicable.

Value of intangible asset = $\sum$DCF (for the years 1 to 'n', where estimated life is n years)

Illustration 3

The following a bridged Balance Sheet as on 31st March, 2021 pertains to S Ltd. (₹ in Lakhs)

Liabilities	(₹)	Assets	(₹)
Share Capital:		Goodwill, at cost	420
180lakh Equity shares of ₹10 each,fully paid up	1,800	Other Fixed Assets	11,166
90lakh Equity shares of ₹ 10each, ₹ 8 paid up	720	Current Assets	2,910
150 lakh Equity shares of ₹5 each, fully paid-up	750	Loans and Advances	933
Reserves and Surplus	5,457		
Secured Loans	4,500		
Current Liabilities	1,242		
Provisions	960		
	15,429		**15,429**

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

(i) Intrinsic value on the basis of book values of Assets and Liabilities including goodwill;

(ii) 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

(iii) Value per share on the basis of EPS.

For the year ended 31st March, 2021 the company has earned ₹1,371 lakh 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.

(A) Calculation of Intrinsic value [Based on book value]

Particulars	₹ in lakhs
Goodwill Fixed Assets Current Assets Loan Advances	420 11,166 2,910 933
Total	15,429
Less: Provision Currentliabilities	960 1,242
Secured loans	4,500
Net Assets available for Equity shareholder	8,727
Add: Notional calls [90 × 2]	180

Particulars	₹ in lakhs
$\frac{\text{Total Assets}}{\text{Equity Share Capital}} = \frac{₹8,907}{1800+900+750} = \frac{₹8,907}{3,450}$	
Intrinsic value per Rupee	₹2.58
Paid up value ₹10 × 2.58 =	₹25.8
Paid up value ₹8 × 2.58 =	₹20.64
Paid up value ₹5 × 2.58 =	₹12.90

$$\text{Dividend Yield} = \frac{\text{Dividend Rate}}{\text{Normal rate of Return}} \times \text{Paid-up Share Capital}$$

$$\text{Paid-up value ₹10} = \frac{20\%}{15\%} \times ₹10 = ₹\ 13.33$$

$$\text{Paid-up value ₹10} = \frac{20\%}{15\%} \times ₹8 = ₹\ 10.67$$

$$\text{Paid-up value ₹10} = \frac{20\%}{15\%} \times ₹5 = ₹\ 6.67$$

(c) Earningper Rupee of Share Capital $= \frac{\text{Earning after Tax}}{\text{Paid-up Share Capital}}$

$$= \frac{1,371}{3,270} = 0.419$$

Earning per fully paid shares 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
Value of fully paid share of ₹10	= 10	= ₹ 20.95
Value of share of ₹10,₹8 paid-up	$= ₹\ \frac{4.19}{2} \times 10$	= ₹16.75
Value of fully paid-up share of ₹5	$= ₹\frac{4.19}{2} \times 10$	= ₹10.50.

Illustration 4

The following is the Balance Sheet (as on 31st December, 2017) of N Ltd.: (₹ in Lakh)

Liabilities	(₹)	Assets	(₹)
Equity Share Capital:		**Fixed Assets:**	
80,000 Equity shares of ₹10 each fully paid-up	8,00,000	Goodwill	1,00,000
50,000 Equity shares of ₹10 each 8 paid-up	4,00,000	Plant and Machinery	8,00,000
36,000 Equity shares of ₹5 each fully paid-up	1,80,000	Land and Building	10,00,000

Liabilities	(₹)	Assets	(₹)
30,000 Equity shares of ₹5 each 4 paid-up	1,20,000	Furniture and Fixtures	1,00,000
		Vehicles	2,00,000
Other Equity:		Investments	3,00,000
General reserve	1,40,000	**Current Assets:**	
Profit and Loss account	3,50,000	Stock	2,10,000
Non-current liabilities:			
3,000 10% Preference shares of ₹100 each fully paid	3,00,000		
12% debentures	2,00,000	Debtors	1,95,000
15% Term Loan	1,50,000	Prepaid Expenses	40,000
Deposits	1,00,000	Advances	45,000
Current Liabilities:		Cash and Bank balance	2,00,000
Bank Loan	50,000		
Creditors	1,50,000		
Outstanding expenses	20,000		
Provision for tax	2,00,000		
Accrued Preference Dividend	30,000		
	31,90,000		**31,90,000**

Additional Information:

(1) In 2015 a new machinery costing ₹50,000 was purchased, but wrongly charged to revenue (no rectification has yet been made for the same).

(2) Stock is overvalued by ₹10,000 in 2016. Debtors are to be reduced by ₹5,000 in 2017, some old furniture (Book value ₹10,000) was disposed of fort ₹6,000.

(3) Fixed assets are worth 5 per cent more than their actual book value. Depreciation on appreciated value of Fixed assets except machinery is not to be considered for valuation of goodwill.

(4) Of the investment 20 per cent is trading and the balance is non-trading. All trade investments are to be valued at 20 per cent below cost. Trade investment were purchased on 1st January, 2017. 50 per cent of the non-trade investments were acquired on 1st January, 2015 and the rest on January, 2016. A uniform rate of dividend of 10 percent is earned on all investments.

(5) Expected increase in expenditure without commensurate increase in selling price ₹20,000.

(6) Research and Development expenses anticipated in future ₹30,000 per annum.

(7) In a similar business a normal return on capital employed is10%.

(8) Profit (after tax) are as follows:

In 2015 — ₹2,10,000, in 2016 — ₹1,90,000 and in 2017 — ₹2,00,000.

(9) Current income tax rate is 50%, expected income tax rate will be 40%. From the above, ascertain the intrinsic value for different categories of Equity shares. For this purpose goodwill may be taken as 3 years purchase of super profits. Depreciation is charged on machinery @10% on reducing system.

Solution:

Computation of Value of Shares:

	₹
Value of Net Assets (As computed for Goodwill)	17,72,073
Value of Goodwill [Refer W.N.3]	1,10,406
Non-trade investments	2,40,000
Net Assets available for Equity Shareholders	21,22,479

Computation of Number of Equivalent Equity Shares:

Equity shares	No. of Equivalent Shares
80,000 shares + 50,000 shares = 1,30,000 shares of ₹10 each $1,30,000 \times \frac{10}{10}$	1,30,000
36,000 shares + 30,000 shares = 66,000 shares of ₹5 each $66,000 \times \frac{5}{10}$	33,000
Total Equivalent Equity Shares of ₹10 each	1,63,000

Calculation of intrinsic value of different categories of Equity Shares of N Ltd.

Value of Net Assets = ₹ 21,22,479

Net assets available to deemed fully paid-up Equity Shareholders

= Net Assets as computed above + Notional Cash from partly paid-up shares

= ₹ 21,22,479 + (50,000 × 2 + 30,000 × 1)

= ₹ 21,22,479 + 1,00,000 + 30,000

= ₹ 22,52,479

Computation of intrinsic value per share*

(i) Value of ₹10 fully paid Equity Share $= \frac{22,53,479}{1,63,000}$ = ₹13.82 per share (approx.)

(ii) Value of ₹8 paid-up Equity Share = 13.82 - 2 = ₹11.82 per share (approx.)

(iii) Value of ₹5 fully paid-up Equity Share $= 13.21 \times \frac{5}{10}$ = ₹6.91per share (approx.)

(iv) Value of ₹4 paid-up Equity Share = 6.91 – 1 = ₹5.91 per share (approx.)

Working Notes:

1. Calculation of Average Capital Employed	**(₹)**	**(₹)**
Fixed Assets:		
Plant and Machinery (including ₹36,450 for a Machine charged in 2013)		8,36,450
Land and Building		10,00,000
Furniture & Fixtures (1,00,000 - 4,000)		96,000
Vehicles		2,00,000
		21,32,450
Add : Appreciation @ 5%		1,06.623
		22,39,073
Trade Investment ($3,00,000 \times \frac{20}{100}) \times \frac{80}{100}$		48,000
Current Assets:		
Stock		2,10,000
Debtors (1,95,000-5,000)		1,90,000
Prepaid Expenses		40,000
Advances		45,000
Cash & Bank Balance		2,00,000
		29,72,073
Less : Outside Liabilities:		
Accrued Preference Dividend*	30,000	
3,000 10% Preference shares of ₹100 each fully paid*	3,00,000	
12% Debentures	2,00,000	
15% Term Loan	1,50,000	
Deposits	1,00,000	
Bank Loan	50,000	
Creditors	1,50,000	
Outstanding Expenses	20,000	
Provision for Tax	2,00,000	12,00,000
Capital employed at the end of the year i.e. Net Assets		17,72,073
Less: 1 of the current year's Accounting Profit after Tax:		
Profit before Tax#	3,80,950	
Less : Tax 40% of ₹3,80,950	1,52,380	
	2,28,570	
50% of ₹2,28,570		1,14,285
Average capital employed		16,57,788

*** Preference Share Capital and accrued preference dividend are liabilities.**

2. Future Maintainable Profits Statement of Average Profit

Particulars	2015 (₹)	2016 (₹)	2017 (₹)
Profit after Tax	2,10,000	1,90,000	2,00,000
Profit before Tax (PAT × $\frac{1}{0.50}$)	4,20,000	3,80,000	4,00,000
Add: Capital expenditure charged to revenue	—	50,000	—
Less : Depreciation of the Machinery	(5,000)	(4,500)	(4,050)
Dividend on Non-Trade Investments	(12,000)	(24,000)	(24,000)
Over-valuation of closing stock	-	(10,000)	—
Add : Overvaluation of opening stock	-	-	10,000
Add: Loss on sale of furniture	-	-	-
(Presumed to be extra ordinary items)	-	-	4,000
Less: Provision for debtors			(5,000)
	4,03,000	3,91,500	3,80,950
Total profit for the three years		11,75,450	
Average Profit = $\frac{₹11,75,450}{3}$		3,91,817	
Less: Depreciation @ 10% on increase in the value of machinery			
$8,36,450 \times \frac{5}{100} \times \frac{10}{100} = ₹41,823 \times \frac{10}{100}$ i.e.	4,182		
Expected increase in expenditure	20,000		
Annual R & D Expenses anticipated in future	30,000	54,182	
Future Maintainable profit before tax		3,37,635	
Less: Tax @ 40% of 3,37,635		1,35,054	
Future Maintainable Profit After Tax		2,02,581	

3. Computation of Goodwill

	₹
Future Maintainable Profit After Tax	2,02,581
Less: Normal Profit (10% of ₹16,57,788)	1,65,779
Super Profit	36,802
Value of Goodwill = Super Profit × No. of years' purchase = ₹36,802 × 3	1,10,406

Illustration 5

Following is the Balance Sheet of Z Ltd. as on 31st March, 2021: (₹ in Lakh)

Liabilities	(₹)	Assets	(₹)
1,00,000 Equity Shares of ₹10 each	10,00,000	Preliminary expenses	5,00,000
10,000 12% Preference Shares of ₹100 each	10,00,000	Goodwill	15,00,000
General Reserve	6,00,000	Buildings Plant	10,00,000
Profit and Loss Account	4,00,000	Plant	4,80,000
15% Debentures	10,00,000	Investment in 10% Stock	6,00,000
Creditors	8,00,000	Stock-in - trade	4,00,000
		Debtors	2,20,000
		Cash	1,00,000
	48,00,000		**48,00,000**

Additional information are given below:

(a) Nominal value of investment is ₹5,00,000 and its market value is ₹5,20,000.

(b) Following assets are revalued:

	(₹)
(i) Building	32,00,000
(ii) Plant	18,00,000
(iii) Stock-in-trade	4,50,000
(iv) Debtors	3,60,000

(a) Average profit before tax of the company is ₹12,00,000 and 12.50% of the profit is transferred to general reserve, rate of taxation being 50%.

(b) Normal dividend expected on equity shares is 8% while fair return on closing capital employed is10%.

(c) Goodwill may be valued at three year's purchase of super profits.

(d) Ascertain the value of each equity share under fair value method.

Solution:

1. Calculation of Capital Employed

Assets:	(₹)
Buildings	32,00,000
Plant	18,00,000
Stock	4,50,000
Debtors	3,60,000
Cash	1,00,000
	59,10,000

Less: Liabilities:	(₹)	(₹)
Creditors	8,00,000	
10,000 12% Preference Shares of ₹100 each	10,00,000	
Debentures	10,00,000	28,00,000
Total Capital Employed		31,10,000

2. Calculation of Acutal Profit

Average Profit before Tax (given)	12,00,000
Less: Income from Investment (5,00,000 × 10%)	50,000
	11,50,000
Less: Income Tax @ 50%	5,75,000
Preference dividend	1,20,000
Actual Profit	4,55,000

3. Profit for Equity Shareholders

Actual Profit (as calculated above)	4,55,000
Less: Transfer to Reserve @ 12.50%	(56,875)
Profit available to Equity Shareholders.	3,98,125

4. Normal Profit

10% of Capital Employed

= 10% of ₹31,10,000 = ₹3,11,000

5. Super Profit = Actual Profit – Normal Profit

= ₹4,55,000 – ₹3,11,000 = ₹1,44,000

6. Goodwill = ₹1,44,000 × 3 = ₹4,32,000

7. Net Assets for Equity Shareholders

= Capital Employed + Goodwill + Investment

= ₹31,10,000 + ₹4,32,000 + ₹4,80,000

= ₹40,22,000

Value per share (Based on Intrinsic Value Method)

$$= \frac{₹\ 40,22,000}{1,00,000\ \text{Shares}} = ₹\ 40.22$$

Value per share (Based on Yield Method)

$$\text{Yield on Equity Share} = \frac{\text{Profit for Equity Shareholders}}{\text{Equity Share Capital}} \times 100$$

$$= \frac{₹\ 3,98,125}{10,00,000} \times 100 = 39.81\%$$

Value per share = $\frac{38.31}{8} \times 10 = ₹ 49.77$

Value of Equity Share Under Fair Value Method

$= \frac{\text{Intrusic value} + \text{yield value}}{2} = \frac{40.22 + 49.77}{2} = \frac{89.99}{2} = ₹ 45$ (approx).

Illustration 6

The Balance Sheet of Q Limited as on 31.12.2021 is as follows : (₹ in Lakh)

Liabilities	(₹)	Assets	(₹)
1,00,000 Equity shares of ₹10 each fully paid-up	10	Goodwill	5
1,00,000 equity shares of ₹6 each fully paid-up	6	Fixed Assets	15
Reserves & Surplus	2	Other Tangible Assets	5
Liabilities	10	Intangible Assets	
		(Market Value)	3
		Misc. Expenditure to the extent	
	28		**28**

Fixed assets are worth ₹24 lakhs. Other tangible assets are valued 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
2014	3.00	11
2015	3.50	12
2016	4.00	13
2017	4.10	14

Normal expectation in the industry to which the company belongs to is 10%. Kamalesh holds 20,000 equity shares of ₹10 each fully paid up and 10,000 equity shares of ₹4 each fully paid up. He wants to sell away his holdings.

(i) Determine the break-up value and market value of both kinds of shares.

(ii) What should be the fair value of shares, if controlling interest is being sold?

Note : Make necessary assumptions, wherever required.

Solution:

(i) Break up value of ₹1 of share capital $= \frac{\text{Net assets available for shareholder}}{\text{Total share capital}}$

$= \frac{₹\ 28.98\ \text{lakhs}}{₹\ 16.00\ \text{lakhs}} = ₹\ 1.81$

Breakup value of ₹10 paid up share = 2.07 × 10 = ₹ 18.10 Breakup value of ₹ 6 paid up share = 2.07 × 6 = ₹ 10.86

Market value of shares

Average dividend $= \frac{11\% + 12\% + 13\% + 14\%}{4} = 12.5\%$

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

Market value of ₹ 6 paid up share $= \frac{12.5\%}{10\%} \times 4 = ₹\ 7.50$

(ii) Breakup value of share will remain as before even if the controlling interest is being sold. But the market value of share will be different as the controlling interest would enable the declaration of dividend upto the limit of disposable profit.

$\frac{\text{Average Profit}}{\text{Paid up value of shares}} \times 100 = \frac{₹\ 3.4\ \text{lakhs}}{₹\ 16\ \text{lakhs}} \times 100 = 21.25\%$

Market value of shares:

Fort 10 paid up share $= \frac{21.25\%}{10\%} \times 10 = 21.25$

For 6 paid up share $= \frac{21.25\%}{10\%} \times 10 \times 10 \times 6 = 12.75$

For value of shares $= \frac{\text{Break up value + Market value}}{2}$

Fair value of ₹10 paid up share $= \frac{18.10 + 21.25}{2} = 19.68$

Fair value of ₹ 6 paid up share $= \frac{18.10 + 12.75}{2} = 11.81$

Working Notes: **(₹ in lakh)**

	Particulars		(₹)
1	**Calculation of average capital employed**		
	Fixed assets		24.00
	Other tangible assets		3.00

	Particulars		(₹)
	Intangible assets		3.00
	Less: Liabilities	10	30.00
	Bonus	1	(11.00)
	Net assets (excluding goodwill/Closing capital employed)		19.00
	Less: ½ of profits [½ (4.10 - 1.0 (i.e. Disputed Bonus)]		(1.55)
	Average Capital Employed		17.45
2.	**Calculation of average super profit for 4 years**		
	Average profit = ¼ [3+3.5+4+4.1 - 1.0(i.e. Bonus)] = ¼ × 13.60		3.400
	Less: Normal Profit 10% of ₹17.45 lakhs		(1.745)
	Super Profit		1.655
3.	**Calculation of goodwill [See Assumption below]**		
	3 years' purchase of average super profit		
	= 3 ×1.655 = ₹4.965 lakhs		
	Increase in value of goodwill = ½ (Book value + 3 years super profit)		
	= ½ (5+ 4.965) = ₹4.9825 lakhs		
	Net assets as valued in W.N. 1 including book value of goodwill Add: Goodwill as per the balance sheet	5.00	19.00
	Add: Increase in goodwill (rounded off)	4.98	9.98
	Net Assets available for shareholders.		28.98

Note: Tax effect on disputed bonus and corporate dividend tax has been ignored.

Assumption: Goodwill has been calculated on the basis of average capital employed. Alternatively it may be calculated on the basis of closing capital employed. Accordingly, the closing capital employed will be ₹19lakhs, super profit will be ₹1.5 lakhs, increase in the value of goodwill will be ₹4.75 lakhs and net assets available for shareholders will be ₹28.75 lakhs. In such a case, the break-up value of ₹1of share capital will be ₹1.80 (instead of 1.81)

Illustration 7

The following is the Balance Sheet of K Ltd. as on 31st March, 2021:

Balance Sheet **(₹ in Lakh)**

Liabilities	(₹)	Assets	(₹)
3,00,000 Equity shares of ₹10 each fully paid	30,00,000	Goodwill	3,00,000
		Building	20,00,000
12.5% Redeemable preference shares of ₹100 each fully paid	19,00,000	Plant & Machinery	22,00,000

Liabilities	(₹)	Assets	(₹)
General Reserve	15,00,000	Furniture	10,00,000
Profit & Loss A/c	3,00,000	Investments	16,00,000
Secured Loan	10,00,000	Stock	12,00,000
Creditors	30,00,000	Debtors	20,00,000
		Bank Balance	4,00,000
	1,07,00,000		**1,07,00,000**

Additional Information:

(i) Fixed assets are worth 20% more than book vaIue. Stock is overvalued by ₹1,00,000. Debtors are to be reduced by ₹40,000. Trade investments, which constitute 10% of the total investments are to be valued at 10% below cost.

(ii) Trade investments were purchased on 1.4.2020. 50% of non-trade investments were purchased on 1.4.2019 and the rest on 1.4.2020. Non-trade investments yielded 15% return on cost.

(iii) In 2019-2020 Furniture with a bookvalue 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.

(iv) In 2018-2019 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) Return on capital employed is 20% in similar business.

(vi) Goodwill is to be valued at two years purchase of super profits based on simple average profits of last four years.

Profits of last four years are as under:

Year	(₹)
2017-2018	13,00,000
2018-2019	14,00,000
2019-2020	16,00,000
2020-2021	18,00,000

(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.

Solution:

1. Calculation of Goodwill

(i) Capital Employed

Particulars	(₹)	(₹)
Fixed assets:		
Building	20,00,000	
Plant and machinery (₹22,00,000 + ₹1,45,800)	23,45,800	
Furniture	10,00,000	
	53,45,800	
Add: 20% Appreciation	10,69,160	
	64,14,960	
Trade investments (₹16,00,000 × 10% × 90%)	1,44,000	
Debtors (₹20,00,000 - ₹40,000)	19,60,000	
Stock (₹12,00,000 - ₹1,00,000)	11,00,000	
Bank Balance	4,00,000	1,00,18,960
Less: Outside liabilities:		
Redeemable preference shares of ₹100 each fully paid	19,00,000	
Secured Loan	10,00,000	
Creditors	30,00,000	(59,00,000)
Capital employed		41,18,960

(ii) Future Maintainable Profit

Calculation of Average Adjusted Profit

Particulars	2017-2018 (₹)	2018-2019 (₹)	2019-2020 (₹)	2020- 2021 (₹)
Profit	13,00,000	14,00,000	16,00,000	18,00,000
Add: Capital Expenditure of Machinery charged to revenue		2,00,000		
Loss on sale of furniture			50,000	
	13,00,000	**16,00,000**	**16,50,000**	**18,00,000**
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 stock				(1,00,000)
Bad debts				(40,000)
Adjusted Profit	13,00,000	15,80,000	15,24,000	14,27,800

Particulars	2017-2018 (₹)	2018-2019 (₹)	2019-2020 (₹)	2020- 2021 (₹)
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) × 20% × 10%				(46,916)
Average Adjusted Profit				14,11,034

(iii) Normal Profit 20% on Capital Employed, i.e. 20% on ₹ 41,18,960 = ₹ 8,23,792

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

= ₹ 14,11,034 – ₹ 8,23,792 = ₹ 5,87,242

(v) Goodwill

= 2 years purchase of super profit

= ₹ 5,87,242 × 2 = ₹ 11,74,484

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

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

Non-trade investment purchased on 1.4.2016 = 50% of ₹ 14,40,000 = ₹ 7,20,000

Non-trade investment purchased on 1.4.2020 = ₹ 14,40,000 - ₹7,20,000 = ₹ 7,20,000

Income from non-trade investment:

In the year 2017-2018	: 7,20,000 × 15%	= ₹ 1,08,000
In the year 2018-2019	: 7,20,000 × 15%	= ₹ 1,08,000
	7,20,000 × 15%	= ₹ 1,08,000
		= ₹ 2,16,000

Calculation of Intrinsic Value of Equity Shares of K Ltd.

Net Assets available for Equity Shareholders.

Particulars	(₹)	(₹)	(₹)
Goodwill (W.N.1)			11,74,484
Sundry fixed assets			64,14,960
Trade and non-trade investments			15,84,000
(₹ 1,44,000 + ₹ 14,40,000)			
Debtors			19,60,000
Stock			11,00,000
Bank balance			4,00,000
Total Assets			1,26,33,444

Particulars	(₹)	(₹)	(₹)
Less: Outside liabilities			
Redeemable preference shares of ₹ 100 each fully paid	19,00,000		
Secured loan	10,00,000		
Creditors	30,00,000	59,00,000	
			(59,00,000)
Net assets available for equity shareholders			67,33,444

$$\text{Value of a equity shares} = \frac{\text{Net Assets available to Equity Shareholders}}{\text{Number of Equity Shares}}$$

$$= \frac{₹\ 67,33,444}{3,00,000} = ₹\ 22.44 \text{ (approx)}$$

Student Note:

The variables which influence the valuation of goodwill are discussed hereunder:

- **Profit:** The term 'profit', here, refers to the past profits earned by the firm. These past profits are required to be adjusted/ modified for any abnormal or non-recurring items (whether gain or loss), which are not expected to arise in the future under normal circumstances. The past profit figures are, thus to be used to determine the 'Future Maintainable Profits' that is expected to be earned by the entity.

- **Simple Average Profit:** When there is no definite trend in the past profits, the past profits are simply aggregated and then divided by the number of years to determine the Average Profit. Since, in this case no weights are used on the past profits, the Average Profit, so determined, is referred to as Simple Average Profit.

  $\therefore$ Simple Average Profit $= \frac{P1 + P2 + \ldots\ldots + Pn}{n}$ where, P = Profit of respective year;

  n = Number of years

- **Weighted Average Profit:** When there exists a clear trend (either increasing or decreasing) in the past profits, the past profits are firstly by multiplied by certain 'weights', and then the products are aggregated. Finally, the aggregate figure is divided by the 'aggregate of all the weights' to arrive at the Weighted Average Profit.

  $\therefore$ Weighted Average Profit $= \frac{P1.W1 + P2.W2 + \ldots\ldots + Pn.Wn}{W1 + W2 + \ldots\ldots + Wn}$ where, P = Profit of respective year;

  W = Weight of respective year;

  n = Number of years

- **Number of Years' Purchase:** For valuation of goodwill, the average profit determined is usually multiplied by a figure referred to as "Number of Years' Purchase". The phrase 'Number of Years' Purchase' refers to the expected number of future years for which the firm is expected to earn the average profit from the year of purchase. In other words, it is assumed to be the time period during which the entity will enjoy the profit earning capacity.

Illustration 8

XY Ltd, a partnership firm, earned profits during the past 5 years as follows:

Year	2017	2018	2019	2020	2021
Profits (₹)	27,000	36,000	37,200	42,000	46,800

Determine the value of goodwill in each of the following independent cases:

Case (a): It was decided to value the Goodwill on the basis of 2 years' purchase of average profit of last five years.

Case (b): It was decided to value the Goodwill on the basis of 3½ years' purchase of average profit of last five years after giving weights of 1, 2, 3, 6 and 8 to the profits chronologically.

Case (c): It was decided to value the Goodwill on the basis of 3 years' purchase of weighted average profit of last five years giving maximum weightage to the recent results.

Case (d): It was decided to value the Goodwill on the basis of 2½ years' purchase of simple average profit of last five years. In this regard the following were observed:

(i) an abnormal loss of ₹ 1,800 was charged against the profit of 2019;

(ii) Profit of 2014 included a non-recurring receipt of ₹ 2,500.

(iii) closing stock of 2015 was over-valued by ₹ 2,400.

Solution:

Case (a):

$$\text{Average profit} = \frac{₹\,27,000 + ₹\,36,000 + ₹\,37,000 + ₹\,42,000 + ₹\,46,800}{5} = ₹\,37,800$$

$\therefore$ Value of Goodwill = ₹ 37,800 × 2 years' purchase = ₹ 75,600

Case (b):

$$\text{Weighted average profit} = \frac{(₹27,000 \times 1) + (₹36,000 \times 2) + (₹37,200 \times 3) + (₹42,000 \times 6) + (₹46,800 \times 8)}{1 + 2 + 3 + 6 + 8}$$

$$= ₹\,41,850$$

$\therefore$ Value of Goodwill = ₹ 41,850 × 3½ years' purchase = ₹ 1,46,475

Case (c):

$$\text{Weighted average profit} = \frac{(₹27,000 \times 1) + (₹36,000 \times 2) + (₹37,200 \times 3) + (₹42,000 \times 4) + (₹46,800 \times 5)}{1 + 2 + 3 + 4 + 5}$$

$$= ₹\,40,840$$

$\therefore$ Value of Goodwill = ₹ 40,840 × 3 years' purchase = ₹ 1,22,520

Case (d):

For valuation of goodwill under simple average method, average profit of last few years is to be multiplied by number of year of purchase. Here, the term 'profit' refers to 'Future Maintainable Profits' that the entity can expect to earn in the future. For determining such maintainable profit, past profits are required to be adjusted/ modified for any abnormal or non-recurring items (whether gain or loss), which are not expected to arise in the future under normal circumstances.

In this case,

Profit of 2019 = Profit (as given) + Abnormal loss sustained in 2019 (which cannot be expected to occur in future)

= ₹ 37,200 + ₹ 1,800 = ₹ 39,000

Profit of 2020 = Profit (as given) – Non-recurring receipt of 2020 (which cannot be expected to occur in future)

= ₹ 42,000 – ₹ 2,500 = ₹ 39,500

Profit of 2021 = Profit (as given) – Overvaluation of closing stock (rectification of profit)

= ₹ 46,800 – ₹ 2,400 = ₹ 44,400

$$\text{Simple Average profit} = \frac{₹27,000 + ₹36,000 + ₹39,000 + ₹39,500 + ₹44,400}{5} = ₹ 37,180$$

∴ Value of Goodwill = ₹ 37,180 × 2½ years' purchase = ₹ 92,950

Super Profit Method:

- As per this method, the value of goodwill depends on the extra (i.e. super) profit earning capacity of an entity.
- Such 'Super Profit' refers to the excess profit earned by the entity over the normal profit that should be earned by a similar firm in the industry.
- Mathematically, Super Profit = Average Future Maintainable Profit – Normal Profit
- i.e. Super Profit = Average Future Maintainable Profit – (Average Capital Employed × Normal rate of return)
- Finally, the value of goodwill is determined by multiplying the Super Profit, so calculated, by certain 'No. of Years' Purchase'.

∴ Value of Goodwill = Super Profit × No. of Years' Purchase

Student Note:

The different variables which influence the valuation of goodwill under 'Super Profit method' are:

- **Super Profit:** Every firm in an industry is expected to earn a normal rate of return. If a particular firm of the industry manages to earn a rate of return that happens to be more than the normal industry rate of return, then such a firm is said to be earning 'Super Profits'. The value of goodwill, under this method, is correlated with this extra profit earning capacity of the firm.
- **Average Future Maintainable Profit:** It refers to the profit that is expected to be earned by the entity in the future under normal circumstances. For this purpose, the past profits that are required to be adjusted/ modified for any abnormal or non-recurring items (whether gain or loss).
- **Capital Employed:** Capital Employed refers to the amount of capital that has been invested in the firm. It is measured as the excess of current value of Total Assets (excluding Goodwill and Fictitious assets) over the current liabilities. Alternatively, it is the aggregate of Owned Capital, Accumulated Profits and Borrowed Capital, if any.
- **Average Capital Employed:** Average Capital Employed is determined by averaging the capital employed at the beginning of the accounting period and that at the end of the accounting period. Mathematically,

$$\text{Average Capital Employed} = \frac{\text{Opening Capital Employed} + \text{Closing Capital Employed}}{2}$$

- **Normal Rate of Return:** It is the rate of return that is usually earned by any firm belonging to a particular industry.
- **Number of Years' Purchase:** For valuation of goodwill, the super profit is usually multiplied by a figure referred to as "Number of Years' Purchase". The phrase 'Number of Years' Purchase' refers to the expected number of future years for which the firm is expected to earn such super profits from the year of purchase.

Illustration 9

XY Ltd, a partnership firm, earned profits during the past 4 years as follows:

Year	2018	2019	2020	2021
Profits (₹)	42,000	46,000	52,000	46,500

Firm has total assets worth ₹ 82,000 and its current liability includes only creditors of ₹ 12,800. The normal rate return is 10%. Determine the value of goodwill on the basis of 2½ year's purchase of super profits.

Solution:

Average Future Maintainable Profit $= \frac{₹42,000 + ₹46,000 + ₹52,000 + ₹46,500}{4} = ₹ 46,625$

Here, Capital employed = Total assets – Current Liabilities = ₹ 82,000 – ₹ 12,800 = ₹ 69,200

Normal profit = Capital employed × Normal rate of return = ₹ 69,200 × 10% = ₹ 6,920

∴ Super profit = Average Future Maintainable Profit – Normal profit

= ₹ 46,625 – ₹ 6,920 = ₹ 39,705

∴ Value of Goodwill = ₹ 39,705 × 2½ years' purchase = ₹ 99,263 (approx.)

Annuity Method:

- This method of goodwill valuation considers the 'time value of money'.
- Under this method, Value of Goodwill = Super Profit × Annuity Value

Student Note:

The different variables which influence the valuation of goodwill under 'Super Profit method' are:

- **Super Profit**: It refers to the excess profit earned by the entity over the normal profit that should be earned by a similar firm in the industry.
- **Annuity:** Annuity refers to a series of continuous cash flows (either cash inflows or cash outflows) of equal amount that occur in every period, over a specified period of time.
- **Annuity Value**: It is determined either from the Annuity Table or may be ascertained from the following formula:

  Annuity Value $= \frac{(1-r)^n}{r(1-r)^n}$ where, r = Rate of Interest per period, and n = Number of periods.

Illustration 10

From the following particulars you are required to determine value of goodwill of ABX Ltd.

Super Profit (Computed)	: ₹ 4,50,000
Normal rate of return	: 12%
Present value of annuity of ₹1 for 4 years @ 12%	: 3.0374

Solution:

Value of goodwill = Super profit × P.V of Annuity of ₹ 1for 4 years @ 12%

= ₹ 4,50,000 × 3.0374 = ₹ 13,66,830

Illustration 11

The following details relate to M/s XYZ, a firm:

Average profit of last four years	: 7,00,000
Average capital employed by the firm	: ₹ 55,00,000
Normal rate of return	: 10%
Present value of annuity of ₹1 for 4 years @ 10%	: 3.1699

Determine the value of goodwill on the basis of annuity of super profit.

Solution:

Super Profit = Average Future Maintainable Profit – Normal Profit

= Average Future Maintainable Profit – (Average Capital Employed X Normal rate of return)

= ₹ 7,00,000 – (₹ 55,00,000 × 10%)

= ₹ 1,50,000

∴ Value of goodwill = Super profit × P.V of Annuity of ₹ 1for 4 years @ 10%

= ₹ 1,50,000 × 3.1699 = ₹ 4,75,485

Capitalisation Method:

- There are two ways of determining the value of goodwill using the capitalisation approach. They are:
  - Capitalisation of Average Profits; and
  - Capitalisation of Super Profits.
- **Capitalisation of Average Profits:** When the average profits are capitalised, then firstly, the 'Capitalised Value of the firm' is determined and there from the 'Net Assets' are deducted to arrive at value of goodwill.

  Mathematically, Capitalised Value of the firm = $\frac{\text{Average Future maintainable profit}}{\text{Normal rate of return (\%)}}$; and

  Value of Goodwill = Capitalised Value of the firm **Less** Net Assets

- **Capitalisation of Super Profits**: When the super profits are capitalised, then the value of goodwill is directly ascertained.

$$\text{Value of Goodwill} = \frac{\text{Super Profit}}{\text{Normal rate of return (\%)}}$$

Student Note:

The different variables which influence the valuation of goodwill under 'Super Profit method' are:

- **Capitalised Value of the firm:** It refers to the standard value of the firm i.e. what ought to be the value of the firm considering its profit earning capacity at the normal rate of return.
- **Net Assets:** It refers to the excess of current value of Total Assets (excluding Goodwill and Fictitious assets) over the external liabilities. In other words, it refers to the Net Worth of the entity.
- **Super Profit**: It refers to the excess profit earned by the entity over the normal profit that should be earned by a similar firm in the industry.

Illustration 16

A firm values goodwill under 'Capitalisation of profits' method. Its average profits for past 4 years has been determined at ₹ 72,000. Net Assets and Capital employed in the business is ₹4,80,000 and ₹ 5,00,000 respectively; and its normal rate of return is 12%.

Determine value of goodwill based on:

(a) Capitalisation of Average Profits

(b) Capitalisation of Super Profits

Solution:

(a) Capitalisation of Average Profits

$$\text{In this case, Capitalised Value of the Business} = \frac{\text{Expected Average Profit}}{\text{Normal rate of Return}} = \frac{₹\ 72{,}000}{12\%} = 6{,}00{,}000$$

$$\therefore \text{ Value of Goodwill} = \text{Capitalised Value of the Business } \textbf{Less} \text{ Net Assets}$$

$$= ₹\ 6{,}00{,}000 - ₹4{,}80{,}000 = ₹\ 1{,}20{,}000$$

(b) Capitalisation of Super Profits

$$\text{In this case, Value of Goodwill} = \frac{\text{Super Profit}}{\text{Normal rate of return (\%)}}$$

$$\text{Super profit} = \text{Average profit} - \text{Normal Profit} = \text{Average profit} - (\text{Capital employed} \times \text{Normal rate of return})$$

$$= ₹\ 72{,}000 - (₹\ 5{,}00{,}000 \times 12\%)$$

$$= ₹\ 72{,}000 - 60{,}000$$

$$= ₹\ 12{,}000$$

$$\therefore \text{ Value of Goodwill} = \frac{\text{Super Profit}}{\text{Normal rate of Return (\%)}} = \frac{12{,}000}{12\%} = ₹\ 1{,}00{,}000$$

C. Market Approach

Under market approach, value of equity is determined by applying relative or multiple to the base value of the company. Relative or multiple is the ratio of market price to some accounting variable of the company taken as the base value.

Most common multiples are price-earnings (P/E) ratio, price-sales (P/S) ratio, price-cash flow from operations (P/CFO) ratio etc. Important point is the relatives have to be computed for the peer group of companies to find the average relationship between the base value and market price. After obtaining the average relationship through relative or multiple, the company finds it calculated market price by applying the average relative to its base value.

The steps involved to find value per share based on market approach:

1. Market capitalisation of each of the peer group of companies is related to any fundamental element of that company (called base value such as Profits, Cash Flows, Net assets, Sales). The ratio obtained is called relative or multiple.
2. To decide what will be the base value on which multiple will be applied. More than one multiple is usually considered in practice.
3. To compute the average of the multiples of the peer group of companies (we call it as Comparator) for each base value.
4. To apply the average multiple (Comparator to a particular base value of the required company for valuation of its equity for that base. Then to find average of the different equity values based on different base values.
5. To divide average value of equity by the no. of shares in order to find value per share.

Market capitalisation is the product of market price of shares and the no. of shares outstanding. Thus, it represents market value of equity. In computation of relative we may find some popular ratios also such as Price Earnings ratio where base value is Earnings and Market to Book Value ratio where base value is Net Assets. But in all circumstances the base values are related to market value of equity.

Relative or multiple = Market Capitalisation/Base value. [where, alternative base values are EAT, EBIT, NOPAT, CF, FCFF, FCFE, Net Assets, Enterprise Value, Sales, or any other fundamental variable]

Illustration 13

X Ltd. has EPS ₹ 12 and no. of shares 1000. Its CF ₹ 15000 and Sales ₹ 80000. Find value per share of X Ltd. based on the data of similar other companies as provided below:

Companies	PAT (₹)	CF (₹)	Sales (₹)	MC (₹)
A	20,000	25,000	1,20,000	1,50,000
B	16,000	20,000	1,40,000	1,75,000
C	25,000	32,000	1,60,000	2,00,000
D	18,000	24,000	1,44,000	1,92,000

Solution:

PAT of X Ltd. = EPS × No. of shares = 12 × 1000 = 12000

For the 4 companies in the peer group Relatives are computed as MC/ Base Value

For PAT as base value M1 is the multiple.

For CF as base value M2 is the multiple.

For Sales as base value M3 is the multiple.

Comparator is the average value of the multiples for the 4 companies.

Value of equity of X for each base = Base Value of X × Comparator

					Multiples		
Companies	**PAT (₹)**	**CF (₹)**	**Sales (₹)**	**MC (₹)**	**M1 = MC/ PAT**	**M2=MC/CF**	**M3 = MC/ Sales**
A	20000	25000	120000	150000	7.5	6	1.25
B	16000	20000	140000	175000	10.9375	8.75	1.25
C	25000	32000	160000	200000	8	6.25	1.25
D	18000	24000	144000	192000	10.66667	8	1.333333
				Comparator	9.276042	7.25	1.270833
			Base of X		PAT	CF	Sales
			Base Value of X ₹		12000	15000	80000
			Value of equity of X ₹		111312.5	108750	101666.7
			No. of equity shares		1000	1000	1000
Value per share based on Base value ₹					111.3125	108.75	101.6667
Average Value per share of X ₹				107.243056			

Solved Case Study(s)

1. Your client is willing to acquire a stake in equity of Desert Ltd. and asks you to find the value per share giving equal importance to the future free cash flows, the net asset value of the business and market price of the shares in peer group. Accordingly, you collected following data about the company:
   (a) EPS is ₹ 3.20
   (b) FCFF for the last year was ₹40 lakhs. Management expects 4% growth pa for the foreseeable future.
   (c) Debt capital amounts to ₹66 lakhs.
   (d) WACC is 14% and Ke is 17%.
   (e) Number of equity shares outstanding is 10 lakhs.
   (f) Net asset value of the business excluding goodwill is ₹300 lakhs.
   (g) The peer group consists of 3 companies with P/E ratios of 11, 12 and 13.
   (h) It earns super profit of ₹ 6 lakhs for forthcoming 5 years only. You calculated the present value of annuity for 5 years is 3.43 at 14% rate of discounting and 3.2 at 17% rate of discounting.

Solution:

A. Value of share based on income approach using DCF method:

FCFF1 = FCFF0 × (1 + 0.04)	= ₹41.6 lakhs
V0 = FCFF1/(WACC – g) = 4.16/(0.14 – 0.04)	= ₹ 416 lakhs
Value of equity = V0 - Debt Capital = 416 – 66	= ₹350 lakhs
Value per share = Value of equity/Number of equity shares = 350/10	= ₹35

B. Value of share based on market approach using EPS as the value driver:

Comparator = Average of P/E of the peer group = (11+12+13)/3	= 12
Value per share = EPS × comparator = 3.2 × 12	= ₹ 38.4

C. Value of share based on net asset approach:

Net asset excluding goodwill	= ₹ 300 lakhs
Goodwill measured at present value of super profit of 5 years purchase = 3.43 × 6	= ₹20.60 lakhs
Value of business = ₹300 + ₹20.60	= ₹320.6
Value per share = ₹320.6/10	= ₹32.06

D. Value per share giving equal importance to A, B and C = (35 + 38.4 + 32.06)/3 = ₹35.15

2. Light Ltd. is contemplating to acquire an equity stake in Twilight Ltd. and requires to know the intrinsic value of its shares on (a) 01-04-2020; (b) 01-04-2021 and (c) 01-04-2022.

The following data of Twilight Ltd. are available: (₹ ' 000)

Year	2019-20	2020-21	2021-22	2022-23
Actual/projected EBIT	800	900	1000	1,100
Interest	80	80	100	100
Depreciation	100	120	125	130
Increase in Current Assets	95	110	100	120
Increase in Current Liabilities	15	20	30	40
Capital Expenditure	140	150	160	170
Debt Capital at the end of the year	4,000	4,000	5,000	5,000
Number of equity shares outstanding = 100000; WACC = 10%; Cost of equity = 15%; Effective tax rate = 25%; FCFF is expected to grow at (I) 0% and at (II)3% p.a. for infinite time from the year 2023-24				

Solution: **(₹'000)**

Year	2019-20	2020-21	2021-22	2022-23
NOPAT	600	675	750	825
Cash Flow	780	885	945	1035
FCFF	640	735	785	865
DCF at 01-04-2020		668	649	
DCF at 01-04-2021			714	
Terminal Value at zero growth			8,650	
Terminal Value at 3% growth			12357	

(₹'000)

Value of	Business		Equity		Share	
	Zero growth	3% growth	Zero growth	3% growth	Zero growth	3% growth
(a) as at 01-04-2020	8466[p]	11529	4466	7529	44.66	75.29
(b) as at 01-04-2021	8577[q]	11947	4577	7947	45.77	79.47
(c) as at 01-04-2022	8650[r]	12357	4450	8157	44.50	81.57

p = 668 +649 + 8650/(1+.10)^2

q = 714 + 8650/(1+.10)^1

r = 8650

Value of Equity = Value of Business – Debt Capital

Value per share = Value of equity/ Number of equity shares

Note: Past FCFF, Interest and Ke are not relevant.

Exercise

A. Theoritical Questions:

Multiple Choice Questions

1. The major three approaches to valuation of shares are:
   a. Income Approach
   b. Net Assets Approach
   c. Market Approach
   d. All of the above
2. The major bases of asset valuation for a going concern:
   a. Book Value
   b. Net Replacement Value
   c. Net Realisable Value
   d. All of the above
3. The Income approach for Valuation of Shares includes the models/Techniques:
   a. Discounted Cash Flow
   b. Dividend Discount Model
   c. Maintainable Profits Basis
   d. All of the above
4. Some of the methods of Goodwill Valuation are
   a. Capitalisation method
   b. Super profits method
   c. Average Maintainable Profits method
   d. All of the above

5. The ways of determining the value of goodwill using the capitalisation approach

   a. Capitalisation of Average Profits

   b. Capitalisation of Super Profits

   c. Both a and b

   d. Capitalisation of Average Future maintainable profit

Answer:

1.	2.	3.	4.	5.
d.	d.	d.	d.	c.

Fill in the Blanks

1. Every firm in an industry is expected to earn a normal rate of return. If a particular firm of the industry manages to earn a rate of return that happens to be more than the normal industry rate of return, then such a firm is said to be earning _____.

2. _____ refers to a series of continuous cash flows (either cash inflows or cash outflows) of equal amount that occur in every period, over a specified period of time.

3. _____ refers to the excess of current value of Total Assets (excluding Goodwill and Fictitious assets) over the external liabilities.

4. The phrase _____ refers to the expected number of future years for which the firm is expected to earn the average profit from the year of purchase.

5. _____ represents the capacity of the business to earn excess profit for a period of time over normal profit.

Answer:

1.	super profits	2.	Annuity
3.	Net Assets	4.	Number of Years of Purchase
5.	Goodwill		

⊙ Short Essay Type Questions

1. State some of the most important purposes of Share Valuation.
2. Enumerate the different factors that affect the valuation of shares.
3. Explain in brief the different variables which influence the valuation of goodwill under 'Super Profit method'.

⊙ Essay Type Questions

1. Under Income Approach how is the value of a business measured using different methods or techniques? Explain. Examine whether capitalisation of income is an application of valuation under income approach.
2. Explain different methods of goodwill valuation. Do you think valuation of goodwill is required to find value per share under (i) income approach; (ii) net asset approach; and (iii) market approach.

B. Numerical Questions:

⊙ Comprehensive Numerical Problems

1.

Year	2018	2019	2020	2021
CF (₹ in Lakhs)	500	600	700	800

(a) Find value of the business on 01-01-2021, if CF remains constant from 2021 to infinity, given that WACC = 10%.

(b) Find value of the business on 01-01-2020 if CF grows at 4% pa from 2022 to infinity, given that WACC = 10%.

(c) Find value of the business on 01-01-2019 if CF remains constant from 2021 to infinity, given that WACC = 10%.

2.

Data provided for forthcoming Year 1	₹ in Lakh
EBIT	800
Depreciation	160
Capex	200
Interest	300
Increase in non-cash working capital	100
Debt Capital at year 0	3000
Debt repaid during year 1	500
Debt issued during year 1	600

Further information:

Tax rate = t	25%
WACC	10%
No of equity shares	6000000

Find:

(a) NOPAT;

(b) CF;

(c) FCFF;

(d) FCFE;

(e) Value of business based on constant (i) CF; (ii) FCFF; (iii) FCFE

(f) Value of business when growth rate is 5% based on (i) CF; (ii) FCFF; (iii) FCFE

(g) Value per share based on FCFF when constant growth rate is 5%.

(h) Value per share based on FCFE when constant growth rate is 5%.

3. The following abridged Balance Sheet as on 31st March, 2021 pertains to K Ltd. (₹ in Lakh)

Liabilities	(₹)	Assets	(₹)
Share Capital :		Goodwill, at cost	600
100 lakh Equity shares of ₹10 each, fully paid up	1,000	Other Fixed Assets	9,030
60 lakh Equity shares of ₹10 each, ₹8 paid up	480	Current Assets	3,000
50 lakh Equity shares of ₹5 each, fully paid-up	250	Loans and Advances	900
Reserves and Surplus	4,000		
Secured Loans	5,000		
Current Liabilities	2,000		
Provisions	800		
	13,530		13,530

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

(i) Intrinsic value on the basis of book values of Net Assets;

(ii) Value per share on the basis of dividend yield.

Normal rate of dividend in the concerned industryis12%, whereas K Ltd. has been paying 15% dividend for the last four years and is expected to maintain it in the next few years; and

(iii) Value per share on the basis of EPS.

For the year ended 31st March, 2021 the company has earned ₹1,740 lakh 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 ₹1.8.

3. AB Ltd, earned profits during the past 5 years as follows:

Year	20 × 1	20 × 2	20 × 3	20 × 4	20 × 5
Profits (₹)	30,000	36,000	40,000	44,000	50,000

Determine the value of goodwill at the end of 20x5 in each of the following independent cases:

Case (a): It was decided to value the Goodwill on the basis of 2 years' purchase of average profit of last five years.

Case (b): It was decided to value the Goodwill on the basis of 4 years' purchase of average profit of last five years after giving weights of 1, 2, 3, 6 and 8 to the profits chronologically.

Case (c): It was decided to value the Goodwill on the basis of 3 years' purchase of weighted average profit of last five years giving maximum weightage to the recent results.

Case (d): It was decided to value the Goodwill on the basis of 3 years' annuity of expected annual profits of ₹ 50,000 at 10% rate of discounting.

Case (e): It was decided to value the Goodwill on the basis of 4 years' purchase of super profits, normal rate of return is 10%. Average capital employed is ₹ 4,00,000. Future maintainable profit is the simple average profit of last five years.

Case (f): It was decided to value the Goodwill on the basis of capitalization of super profits, capitalization rate is 10%. Average capital employed is ₹ 4,00,000. Future maintainable profit is ₹ 50,000.

Case (g): It was decided to value the Goodwill on the basis of 2½ years' purchase of simple average profit of last five years. In this regard the following were observed:

(i) an abnormal loss of ₹ 1,000 was charged against the profit of 20x3;

(ii) Profit of 20x4 included a non-recurring receipt of ₹ 2,000.

(iii) closing stock of 2015 was over-valued by ₹ 3,000.

4. The following is the Balance Sheet (extract) of Z Ltd. as on 31st March, 2021:

Balance Sheet **(₹ in Lakh)**

Equity and Liabilities	(₹)	Assets	(₹)
3,00,000 Equity shares of ₹10 each fully paid	30,00,000	Building	20,00,000
12% Redeemable preference shares of ₹100 each fully paid	19,00,000	Plant & Machinery	22,00,000
General Reserve	15,00,000	Furniture	10,00,000
Profit & Loss A/c	3,00,000	Investments	16,00,000
Secured Loan	10,00,000	Stock	12,00,000
Creditors	27,00,000	Debtors	20,00,000
		Bank Balance	4,00,000
	1,04,00,000		1,04,00,000

Additional Information:

(i) PPE are worth 10% more than book value. Stock is overvalued by ₹2,00,000. Debtors are to be reduced by ₹80,000. Trade investments, which constitute 10% of the total investments are to be valued at 20% below cost.

(ii) Trade investments were purchased on 01.04.2020. 50% of non-trade investments were purchased on 01.04.2019 and the rest on 01.04.2020. Non-trade investments yielded 15% return on cost.

(iii) In 2019-2020 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.

(iv) In 2018-2019 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) Return on capital employed is 18% in similar businesses.

(vi) Profits of last four years are as under:

Year	₹ in Lakhs
2017-2018	13,00,000
2018-2019	14,00,000
2019-2020	17,00,000
2020-2021	20,00,000

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

(viii) Depreciation on the overall increased value of PPE (worth 10% 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.

Compute Goodwill at three years purchase of super profits based on simple average profits of last four years.