ILLUSTRATION 24 (Valuation of fully paid and partly paid shares)

Net asset value ₹ *59,50,000*

Equity Shares : *A type : 1,00,000 shares of* ₹ *10 each fully called up, out of this there are calls in arrears on 25,000 shares @* ₹ *2 per* share

B type : 1,00,000 shares of ₹ 5 *each fully paid up*

Calculate intrinsic value of different classes of shares.

SOLUTION

	₹
Net assets value	59,50,000
Add : Notional Call (25,000 × ₹ 2)	50,000
	60,00,000

Equivalent number of ₹ 10 shares = ₹ 1,00,000 + 1,00,000 × $\frac{5}{10}$ = ₹ 1,50,000

Intrinsic value of ₹ 10 fully paid up share = $\frac{₹\ 60,00,000}{1,50,000}$ = ₹ 40

Intrinsic value of ₹ 10, ₹ 8 paid up share = ₹ 40 – ₹ 2 = ₹ 38

Intrinsic value of ₹ 5 fully paid up share = ₹ 40 × $\frac{5}{10}$ = ₹ 20

Verification:		
75,000 × ₹ 40 =	₹	30,00,000
25,000 × ₹ 38 =	₹	9,50,000
1,00,000 × ₹ 20 =	₹	20,00,000
	₹	59,50,000

ILLUSTRATION 25 (Valuation of fully paid and partly paid shares)

The summarised Balance Sheet of K.L. Ltd. as at 31st March, 2023 is as follows:

Particulars	Note No.	₹
I EQUITY AND LIABILITIES		
1. Shareholders' Funds		
(a) Share Capital	1	3,80,000
(b) Reserves and Surplus	2	1,70,000
2. Non-current Liabilities		
Long-term Borrowings (11% Debentures)		1,00,000
3. Current Liabilities		90,000
Total		7,40,000
II ASSETS		
1. Non-current Assets		
(a) Property, Plant and Equipment		4,50,000
(b) Intangible Assets (Goodwill)		70,000
2. Current Assets		2,20,000
Total		7,40,000

Notes to Accounts

Particulars	₹
1. Share Capital	
30,000 Equity Shares of ₹ 10 each fully paid up	3,00,000
10,000 Equity Shares of ₹ 10 each ₹ 8 paid up	80,000
	3,80,000
2. Reserves and Surplus	
General Reserve	1,80,000
Surplus in the statement of profit and loss (debit balance)	(10,000)
	1,70,000

The goodwill is independently valued at ₹ 50,000 and tangible assets at ₹ 4,20,000. There was a contingent liability of ₹ 20,000 which has become payable. Determine the value of both the shares under net assets method.

SOLUTION

		₹
Sundry Assets		
Goodwill		50,000
Property, Plant and Equipment		4,20,000
Current Assets		2,20,000
		6,90,000
Less: Liabilities		
11% Debentures	1,00,000	
Current Liabilities	90,000	

Contingent Liability Payable	20,000	2,10,000
Net Assets (before notional call)		4,80,000
Add: Notional Call (10,000 × ₹ 2)		20,000
		5,00,000

Number of equity shares (30,000 + 10,000) = 40,000

Intrinsic value per ₹ 10 fully paid up share

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

$$= \frac{₹\ 5,00,000}{40,000} = ₹\ 12.50$$

Intrinsic value per ₹ 10, ₹ 8 paid up equity share = ₹ 12.50 – ₹ 2 = ₹ 10.50

ILLUSTRATION 26 (Valuation of fully paid and partly paid shares).

Balance Sheet of John Engg. Ltd. as on 31st March, 2023 is given below:

Particulars	*Note No.*	₹
I EQUITY AND LIABILITIES		
1. Shareholders' Funds		
(a) Share Capital	*1*	*3,30,000*
(b) Reserves and Surplus	*2*	*30,000*
2. Non-current Liabilities		
Long-term Borrowings (Loan from Bank)		*1,40,000*
3. Current Liabilities		
Trade payables		*80,000*
Total		*5,80,000*
II ASSETS		
1. Non-current Assets		
(a) Property, Plant and Equipment		*3,80,000*
(b) Non-current Investments		*40,000*
2. Current Assets		
Inventories		*80,000*
Trade Receivables		*40,000*
Cash and cash equivalents (cash and bank balance)		*40,000*
Total		*5,80,000*

Notes to Accounts

Particulars	₹
1. ***Share Capital***	
15,000 Equity Shares of ₹ 10 each fully paid up	*1,50,000*
20,000 Equity Shares of ₹ 10 each ₹ 6 paid up	*1,20,000*
6,000 9% Cumulative preference shares of ₹ 10 each fully paid up	*60,000*
	3,30,000
2. ***Reserves and Surplus***	
Surplus i.e. Balance in the Statement of profit and loss	*30,000*
3. ***Contingent Liability and Commitments (Contingent liability)***	
	20,000

Other information:

(1) Current cost of Tangible Assets is ₹ 3,70,000; and that of stock is ₹ 1,00,000; (2) Investments could fetch only ₹ 10,000. (3) 50% debtors are doubtful. (4) Preference dividend is in arrears for last five years. The articles of association of the company provide that the preference shareholders are entitled to arrears of preference dividend in the event of liquidation of the company.

Find out the value per share of John Engg. by the Net Assets method.

SOLUTION

Sundry Assets		₹
Tangible Assets		3,70,000
Investments		10,000
Stock		1,00,000
Debtors		20,000
Cash and Bank		40,000
		5,40,000
Less : Liabilities and Claims of Preference Shareholders		
Long-term Loans	1,40,000	
Sundry Creditors	80,000	
Preference Share Capital	60,000	
Arrears of Preference Dividend (₹ 5,400 × 5)	27,000	3,07,000
Net assets available for equity shareholders		2,33,000
Add : Notional Call (20,000 × ₹ 4)		80,000
		3,13,000
Number of equity shares (15,000 + 20,000)		35,000

Intrinsic value of ₹ 10 fully paid equity share $= \frac{₹\ 3,13,000}{35,000} =$ ₹ 8.94

Intrinsic value of ₹ 10, ₹ 6 paid up equity share = ₹ 8.94 – ₹ 4 = ₹ 4.94

ILLUSTRATION 27 (Valuation of Preference and Equity Shares).

The following is the Balance Sheet of Shuchi Ltd. as at 31st March, 2023

Particulars	Note No.	₹
I EQUITY AND LIABILITIES		
1. Shareholders' Funds		
(a) Share Capital	*1*	*4,00,000*
(b) Reserves and Surplus	*2*	*(12,000)*
2. Non-current Liabilities		
Long-term Borrowings (10% Debentures)		*50,000*
3. Current liabilities		
Trade payables		*95,000*
Total		*5,40,000*
II ASSETS		
1. Non-current Assets		
(a) Property, Plant and Equipment	*3*	*5,33,000*
(b) Other Non-Current Assets (Discount on Issue of Deb.)		*7,000*
		5,40,000

Notes to Accounts

Particulars	₹
1. Share Capital	
10,000 12% Preference Shares of ₹ 10 each	*1,00,000*
30,000 Equity Shares of ₹ 10 each	*3,00,000*
	4,00,000
2. Reserves and Surplus	
General Reserve	*10,000*
Debenture Redemption Reserve	*20,000*
Surplus (Deficit) in the statement of profit and loss (Debit Balance)	*(42,000)*
	(12,000)
3. Property, Plant and Equipment	
Plant and Machinery	*5,48,000*
Less: Accumulated Depreciation	*15,000*
	5,33,000

Debenture interest is owing for six months and dividends on preference shares are in arrears for one year. Assuming the assets are worth their book values, show the approximate valuation of shares if—

(i) Preference share are preferential as to capital and arrears are payable in winding up; and

(ii) Preference shares are preferential as to capital but arrears of preference dividends are not payable in winding up.

SOLUTION

		₹
Sundry Assets		5,48,000
Less : Provision for Depreciation		15,000
		5,33,000
Less : Liabilities		
10% Debentures	50,000	
Sundry Creditors	95,000	
Debenture Interest	2,500	1,47,500
		3,85,500

Case (i)

Value of a preference share = $\frac{₹\ 1,00,000 + ₹\ 12,000}{10,000} = ₹\ 11.20$

Value of an equity share = $\frac{₹\ 3,85,500 - ₹\ 1,12,000}{30,000}$ ₹ 9.12 (App.)

Case (ii)

Value of a preference share = $\frac{₹\ 1,00,000}{10,000} = ₹\ 10$

Value of an equity share = $\frac{₹\ 3,85,500 - ₹\ 1,00,000}{30,000}$ ₹ 9.12 (App.)

ILLUSTRATION 28 (Valuation of preference and equity shares)

The following figures were extracted from the books of M/s Prosperous Limited

		₹
Share Capital		
9% Preference Shares of ₹ 100 each		*3,00,000*
1,000 Equity Shares of ₹ 100 each, ₹ 50 called up		*50,000*
1,000 Equity Shares of ₹ 100 each, ₹ 25 called up		*25,000*
1,000 Equity Shares of ₹ 100 each fully called up		*1,00,000*
		4,75,000
Reserves and Surplus		
General Reserve	*2,00,000*	
Profit and Loss Account	*50,000*	*2,50,000*
		7,25,000

On a fair valuation of all the assets of the company, it is found that they have an appreciation of ₹ 75,000.

The articles of association provided that, in case of liquidation, the preference shareholders will have further claim to the extent of 10% of the surplus assets. Ascertain the value of each preference and equity share, assuming liquidation. Ignore expenses of winding up.

Note : Net assets available for equity shareholders can also be calculated as follows :

		₹
Share Capital		XXX
Add: Notional Call		XXX
Reserves and Surplus		XXX
Profit on revaluation of assets and liabilities		XXX
		XXX
Less : Loss on revaluation of assets and liabilities	XXX	
Deferred expenses not written off	XXX	
Profit and Loss Account (Debit Balance)	XXX	XXX
Net Assets available for shareholders		XXX
Less : Amount payable to preference shareholders		XXX
Net assets available for equity shareholders		XXX

SOLUTION

	₹
Share Capital	4,75,000
Add : Notional Call on equity shares [(1,000 × ₹ 50) + (1,000 × ₹ 75)]	1,25,000
Reserves and Surplus	2,50,000
Appreciation in the value of assets	75,000
Amount available for preference and equity shareholders	9,25,000
Less : 9% Preference Share Capital	3,00,000
	6,25,000
Less : Equity Share Capital (3,000 × ₹ 100)	3,00,000
Surplus assets	3,25,000
Less : Preference Shareholders' claim in surplus assets (10% of 3,25,000)	32,500
Surplus assets available for equity shareholders	2,92,500
Total amount available for equity shareholders (3,00,000 + 2,92,500)	5,92,500

Value of ₹ 100 fully paid equity share (5,92,500/3,000)	197.50
Value of ₹ 100, ₹ 50 called up equity share (197.50 – 50)	147.50
Value of ₹ 100, ₹ 25 called up equity share (197.50 – 75)	122.50
Value of ₹ 100 each fully paid preference share (3,32,500/3,000)	110.83

ILLUSTRATION 29 (Valuation of fully paid and partly paid shares)

From the following information relating to a company, calculate the value of its equity shares as per intrinsic value method :

Issued equity share capital : 10,000 shares of ₹ 10 each, ₹ 8 paid up

8% Preference share capital : 10,000 shares of ₹ 10 each, fully paid up

Rate of Tax	*50%*
Expected profit (before tax)	*₹ 2,00,000*
Annual transfer to General Reserve	*20%*
Reserves and Surplus	*2,50,000*
Normal rate of dividend	*20%*
External liabilities	*₹ 75,000*
Fictitious Assets	*₹ 20,000*

[B.Com., Delhi 2017]

SOLUTION

Calculation of net assets for equity shareholders		₹
Preference Share Capital		*1,00,000*
Equity Share Capital		*80,000*
Reserves and Surplus		*2,50,000*
External Liabilities		*75,000*
		5,05,000
Less : External Liabilities	75,000	
Fictitious Assets	20,000	
	95,000	95,000
Net assets available for preference and equity shareholders		4,10,000
Less : Preference share capital		1,00,000
		3,10,000

$$\text{Intrinsic value per share} = \frac{\text{Net assets for equity shareholders}}{\text{Number of equity shares}} = \frac{₹\ 3,10,000}{10,000} = ₹\ 31$$

Merits of Net Assets Method

Following are the merits of net assets basis of valuation of shares :

(1) This method is very useful for valuation of shares of those companies which are being liquidated.

(2) This method takes into consideration both current and non-current assets, whether tangible or intangible, for valuation of shares.

(3) In this method, there is no difficulty in valuation of different classes of shares.

Demerits of Net Asset Method

Net assets method of valuation of shares suffers from the following limitations :

(1) It is difficult to estimate the net realisable value/current cost of all the assets.

(2) There is possibility that the estimates may be influenced by the personal bias of the valuer.

(3) It is not easy to calculate the value of goodwill.

(4) This method ignores the dividend policy and earnings of the company.

Suitability of Net Assets Method

Net assets method of valuation of shares is suitable in the following circumstances :

(1) When the company is about to be liquidated.

(2) When there is no reliable information regarding the future profitability of the company.

(3) When a company has been continuously incurring losses and there are no prospects of earning profits in future.

(4) When the statute requires the valuation of shares by this method. Statute generally prescribes stock exchange price for quoted shares and net assets based valuation for unquoted equity shares and average of net assets and yield methods in valuing shares of investment companies.

VALUATION OF SHARES ON YIELD OR EARNING BASIS

We have seen that net assets basis of valuation of shares is suitable for the companies which are going to be liquidated soon or those companies in respect of which reliable information about profit potential is not available. But in most of the cases an investor is interested in the rate of earnings or the rate of dividend. For a large block of shares, which can give the buyer a virtual control over the company, rate of earnings is appropriate; and for a small block of shares, the rate of dividend should be basis of valuation of shares.

The following methods are based on yield, or earnings :

(*a*) Dividend Yield Method or Dividend Capitalisation Method

(*b*) Earnings Capitalisation Method.

(*a*) Dividend Yield Method or Dividend Capitalisation Method

This method of valuation of shares is suitable for small block of shares. Under this method, expected rate of dividend is compared with the normal rate of dividend. If the expected rate of dividend is more than the normal rate, the value of the share would be proportionately higher than its paid up value. For example, if the expected rate of dividend is 20% and the normal rate is 10%, the value of the share will be double than that of its paid up value. Similarly, if the rate of dividend is less than the normal rate, the value of the share will be proportionately lower.

The formula for computing the dividend yield value of an equity share is :

$$\text{Dividend Yield Value of an Equity Share} = \frac{\text{Expected Dividend Rate}}{\text{Normal Rate of Return or Dividend}} \times \text{Paid up Value of the Share}$$

It can also be calculated as follows :

$$\text{Dividend Yield Value of an Equity Share} = \frac{\text{Expected Dividend in Rupees per Share}}{\text{Normal Rate of Return or Dividend}} \times 100$$

Expected rate of dividend depends on (*a*) past dividend rates and (*b*) maximum possible dividend. Maximum possible dividend is calculated as follows :

The following formula can be used for calculating maximum rate of dividend :

$$\text{Maximum rate dividend} = \frac{\text{Earnings for Equity Shareholders} - \text{Transfer to Reserves}}{\text{Paid up Equity Share Capital}} \times 100$$

Dividend yield method should be used for valuation of small block of shares. This can be used in the question if details of maximum possible dividend are available in the question.

Normal rate of return of a company can be calculated as follows :

Normal rate of return for the industry	XXX
In case of poor dividend track record	+ 0.5%
In case of good dividend track record	– 0.5%
In case of poor debt-equity ratio	+ 0.5%
In case of poor dividend coverage ratio	+ 0.5%
In case of poor asset backing	+ 0.5%
Normal rate of return for the company	XXX

The formulas for calculating debt-equity ratio, dividend coverage ratio and asset-backing ratio are as follows :

$$\text{Debt-Equity Ratio} = \frac{\text{Long Term Debt}}{\text{Shareholders Funds}}$$

$$\text{Dividend Coverage Ratio} = \frac{\text{Profit after Tax - Preference Divided}}{\text{Equity Dividend}}$$

$$\text{Asset Backing Ratio} = \frac{\text{Intrinsic Value}}{\text{Paid up value of a share}}$$

Earnings or Future maintainable profits or earnings for equity shareholders can be calculated as follows:

	₹
Future maintainable profits (for the purpose of valuation of goodwill)	**XXX**
***Add* : Non-operating Income (net of tax)**	**XXX**
***Less* : Non-operating Expenses**	**XXX**
***Less* : Preference dividend and dividend distribution tax on pref. dividend**	**XXX**
Future maintainable profits for equity shareholders for valuation of shares purposes	**XXX**

In case of future maintainable profits for the purpose of valuation of goodwill only operating income is considered, but in case of dividend yield method total profit after tax should also include non-operating items of income and expense.

Merits of dividend yield method

Dividend yield method taken into consideration the dividend rate which is ignored in case of net asset method of valuation of shares.

Demerits of dividend yield method

(1) ***Too much importance to dividend factor:*** The main demerit of dividend yield method is that it gives too much weightage to the dividend factor. If a company earns huge amount of profit but declares dividend at a lower rate than the normal rate, the value of the share according to this method would be less than the paid up value which is not true in practice.

(2) ***Net assets ignored:*** The method does not taken into consideration the net assets of the company, although some adjustment may be made in the normal rate of return or dividend depending on the net asset backing. As stated earlier, the higher the asset backing per share the greater would be the confidence of the investors. Normally 1.5 to 2 times asset backing is considered satisfactory.

(3) ***Difficult to determine normal rate of return:*** The determination of expected rate of dividend and normal rate of return is not easy.

(4) ***Fluctuations in dividend rate:*** The share price may be manipulated by increasing or decreasing the rate of dividend.

ILLUSTRATION 30

From the following information relating to a company, calculate the value of its equity shares as per yield method.

Issued equity share capital—10,000 shares of ₹ 10 each, ₹ 8 paid up. 8% preference share capital—10,000 shares of ₹ 10 each, fully paid up.

Annual transfer to General Reserve	*20%*
Rate of tax	*50%*
Expected profit (before tax)	*₹ 2,00,000*
Normal rate of dividend	*20%*
Reserves and surplus	*₹ 2,50,000*
Liabilities	*₹ 75,000*
Fictitious assets	*₹ 20,000*

SOLUTION

(*i*) **Calculation of profit available for equity shareholders**

	₹
Expected profit (before tax)	2,00,000
Less : Income tax (2,00,000 × 50/100)	1,00,000
Expected profit after tax	1,00,000
Less : Preference dividend (8% of 1,00,000)	8,000
Earnings for equity shareholders	92,000
Less : Transfer to General Reserve (20% of 1,00,000)	20,000
Earnings available for dividend to equity shareholders	72,000

(ii) **Calculation of expected rate of dividend**

$$\text{Expected rate of dividend} = \frac{\text{Earnings available for dividend to equity shareholders}}{\text{Paid up Equity Share Capital}} \times 100$$

$$= \frac{72,000}{80,000} \times 100 = 90\%$$

(iii) **Calculation of dividend yield value**

$$\text{Dividend yield value per share} = \frac{\text{Expected rate of dividend}}{\text{Normal rate of dividend}} \times \text{Paid up value of a share}$$

$$= \frac{90}{20} \times 8 = ₹\ 36$$

ILLUSTRATION 31

Nidhi Ltd. provides you the following information :

(i) Profit after tax and dividend on equity shares :

Year	*Profit after tax (₹)*	*Dividend on Equity Share Capital*
2020-21	*3,40,000*	*20%*
2021-22	*5,80,000*	*35%*
2022-23	*5,60,000*	*30%*

(ii) Share Capital :

1,00,000 Equity shares ₹ 10 each fully paid

1,000, 10% Preference Shares of ₹ 700 each fully paid

(iii) Fully paid equity shares of ₹ 10 each of similar companies in the same industry with an average dividend of 15% are quoted at ₹ 10.

Calculate the value of an equity share on dividend yield basis assuming the expected rate of dividend equal to weighted average rate of dividend of last three years.

SOLUTION

(i) ***Calculation of expected rate of dividend***

$$= \frac{20 \times 1 + 35 \times 2 + 30 \times 3}{1 + 2 + 3} = \frac{20 + 70 + 90}{6} = \frac{180}{6} = 30\%.$$

(ii) ***Calculation of normal rate of return***

$$= \frac{\text{Dividend per share in the industry}}{\text{Market price}} = 100 = \frac{1.50}{10} \times 100 = 15\%$$

(iii) ***Dividend yield value of an equity share***

$$= \frac{\text{Expected rate of dividend}}{\text{Normal rate of return}} \times \text{Paid up equity share capital} = \frac{30}{15} \times 10 = ₹\ 20$$

(b) Earnings Capitalisation Method

In case of dividend yield method the emphasis is on rate of dividend but most of the companies in actual practice use a small part of their earnings for declaration of dividends.

The major portion of the profits are retained in the business. The accumulated profits and reserves are likely to be distributed, sooner or later, to the equity shareholders in the form of bonus shares. Therefore, the equity shares should be valued on the basis of earnings of the company rather than the dividends.

This method is the best method of valuation of shares for a large block of shares so as to give a virtual control over the company. This method should be used as compared to dividend yield method when the question is silent about the method of valuation of shares.

The formula for calculating the value of a share under this method is as follows :

$$\textbf{Value per Share} = \frac{\textbf{Earnings Rate}}{\textbf{Normal Rate of Return}} \times \textbf{Paid up value per share}$$

$$\text{Where, Earnings Rate} = \frac{\text{Future Maintainable Earnings for Equity Shareholders}}{\text{Paid up Equity Share Capital}} \times 100$$

Another variation of yield method is earnings capacity method. In this method instead paid-up equity share capital, equity shareholders' funds is used as denominator in the above formula.

Future maintainable profits have been explained earlier while discussing valuation of goodwill. But future maintainable profits for the purposes of valuation of equity shares will be calculated as follows:

	₹
Future maintainable profits after tax (for the purpose of valuation of goodwill)	**XXX**
Add : **Non-operating income (net of tax)**	**XXX**
Less : **Non-operating expenses**	**XXX**
Less : **Preference dividend and Dividend Distribution Tax thereon, if any**	**XXX**
Future Maintainable profit or earnings for equity shareholders	**XXX**

Calculation of earning expected to be available for equity shareholders for the purpose of valuation can be, alternatively, stated as follows:

		₹
Average past earnings before tax (including income from non-trade investments)		**XXX**
Add: **Future income**		**XXX**
Less: **Future expenses**		**XXX**
Future Maintainable Earnings before tax		**XXX**
Less: **Tax expense**		**XXX**
Future Maintainable Earnings after tax		**XXX**
Less: **Dividend on preference shares**	**XXX**	
Dividend Distribution Tax thereon, if any	**XXX**	**XXX**
Future maintainable profit or earnings available for equity shareholders		**XXX**

(**Note:** Dividend distribution tax has been abolished w.e.f. 1st April, 2020. Therefore, it will not be adjusted after 31st March, 2020).

Thus, future maintainable profits or earnings for equity shareholders will include non-operating income also.

As stated earlier, **normal rate of return** comprises of *(i)* the risk-free rate, *i.e.*, pure interest rate prevailing in the concerned economy and *(ii)* the premium for business risk appropriate for the industry to which the company belongs. In this respect, net **assets backing** is also taken into consideration. Shares should be adequately covered by net assets. If shares are not adequately covered or too much covered which may indicate idle funds, the normal rate of return is accordingly adjusted. Normally 1.5 to 2 times net asset backing is considered satisfactory. Along with the main consideration of yield and safety of capital, another important factor is the **easy transferability** of the shares of the company. Generally shares of good companies enjoy this advantage which is of great significance to the holder. On the other hand, holders of unquoted companies do not enjoy this advantage and therefore, such shares are discounted for lack of liquidity depending on the circumstances of each case. Normal rate of return is suitably increased in the case of such illiquid companies. Further the **pattern of dividend payment** is another important factor. The companies which pay dividends at steady rates enjoy greater popularity and prices of their share are high while shares of companies which do not pay dividends at steady rates are not liked by the investing public and consequently they suffer in valuation. The companies which issue bonus shares and are able to maintain the dividend on the enhanced capital enjoy the confidence of the investing public and consequently enjoy higher valuation.

ILLUSTRATION 32 (Earnings Capitalisation Method)

From the following information relating to a company, calculate value of its equity share as per yield method assuming that controlling interest is to be transferred:

Issued equity share capital : 10,000 shares of ₹ 10 each, ₹ 8 paid up

8% preference share capital: 35,000 shares of ₹ 10 each, fully paid up.

Rate of tax	*50%*
Expected profit (before tax)	*₹ 2,00,000*
Normal rate of return	*20%*

SOLUTION

(i) ***Calculation of profit available for equity shareholders***	₹
Expected profit (before tax)	2,00,000
Less : Tax expense (50% of 2,00,000)	1,00,000
Profit after tax	1,00,000
Less : Preference dividend (8% of 3,50,000)	28,000
	72,000

(ii) ***Calculation of earnings rate***

$$= \frac{\text{Profit available for equity shareholders}}{\text{Paid-up Equity Share Capital}} \times 100 = \frac{72,000}{80,000} \times 100 = 90\%$$

(iii) Calculation of yield value per share

$$= \frac{\text{Earnings Rate}}{\text{Normal Rate of Return}} \times \text{Paid up value of an equity share} = \frac{90}{20} \times ₹\,8 = ₹\,36$$

ILLUSTRATION 33 (Earnings Capitalisation Method)

From the following information, calculate value of an equity share :

(i) The paid up share capital of a company consists of 1,000, 15% Preference Shares of ₹ 100 each and 20,000 Equity Shares of ₹ 70 each.

(ii) The average annual profits of the company, after providing for depreciation and taxation, amounted to ₹ 75,000.

(iii) The normal return expected by investors on equity shares from the type of the business carried by the company is 10%.

SOLUTION

	₹
Profits of the company (after depreciation and tax)	75,000
Less : Dividend payable to preference shareholders (15% of 1,00,000)	15,000
Profits available for equity shareholders	60,000

$$\text{Earnings Rate} = \frac{\text{Earnings available for equity shareholders}}{\text{Paid-up equity share capital}} \times 100$$

$$= \frac{₹\,60,000}{₹\,2,00,000} \times 100 = 30\%$$

$$\text{Yield value per share} = \frac{\text{Earnings Rate}}{\text{Normal rate of return}} \times \text{Paid up value per share} = \frac{30}{10} \times ₹\,10 = ₹\,30$$

Capitalisation of earnings: This is the alternative procedure for valuation of shares by this method. **In this case, earnings meant for equity shareholders are capitalised at the normal rate of return. The capitalised value of earnings is then divided by the number of equity shares to arrive at the value per share.** Following steps are involved in this method:

(i) Determination of future maintainable profit meant for equity shareholders

(ii) Ascertaining the normal rate of return

(iii) Computing the capitalisation factor or multiplier. Capitalisation factor depends upon the normal rate of return. It is calculated as follows:

$$\text{Capitalisation Factor} = \frac{100}{\text{Normal Rate of return}}$$

(iv) Ascertaining the capitalised value of earnings by multiplying the future maintainable profits meant for equity shareholders by the capitalisation factor.

(v) Calculating the value per share by dividing the capitalised value of earnings obtained in *(iv)* by the number of equity shares.

Thus, the value of a share can be obtained by using any of the following formula :

$$\text{Value per Share} = \frac{\text{Capitalised Value of Earnings meant for Equity Shareholders}}{\text{Number of Equity Shares}}$$

or

$$\text{Value per Share} = \frac{\text{Capitalised Value of Earnings meant for Equity Shareholders}}{\text{Total Paid - up Equity Capital}} \times \text{Paid up Value of a share}$$

ILLUSTRATION 34 (Capitalisation of Earnings Method)

From the following information of Manju Co. Ltd., compute the value of its equity shares by capitalisation of earnings method:

BALANCE SHEET

as at 31st March, 2023

Equity and Liabilities	₹	*Assets*	₹
Share Capital :		*Fixed Assets*	*5,00,000*
Equity Shares of ₹ 10 each fully paid	*2,50,000*	*Current Assets*	*3,00,000*
Reserves and Surplus	*75,000*		
Secured Loans :			
12% Debentures (Since 2006)	*2,50,000*		
Other Liabilities	*2,25,000*		
	8,00,000		*8,00,000*

Year ending 31st March

	2019 ₹	*2020* ₹	*2021* ₹	*2022* ₹	*2023* ₹
Sales	*6,00,000*	*7,00,000*	*8,00,000*	*5,00,000*	*9,00,000*
Less : Operating Costs	*3,45,000*	*3,95,000*	*4,45,000*	*2,95,000*	*4,95,000*
Interest on Loan from Bank	*25,000*	*25,000*	*25,000*	*25,000*	*25,000*

Assume rate of taxation at 40% and rate of normal earnings at 12.5%. Show the working also.

[B.Com. (Hons.), Delhi, Modified]

SOLUTION

Step I: Average Profits of Past 5 years

	2019 ₹	*2020* ₹	*2021* ₹	*2022* ₹	*2023* ₹
Sales	6,00,000	7,00,000	8,00,000	5,00,000	9,00,000
Less : Operating Costs	3,45,000	3,95,000	4,45,000	2,95,000	4,95,000
Operating Profits	2,55,000	3,05,000	3,55,000	2,05,000	4,05,000
Less : Interest on Bank Loan	25,000	25,000	25,000	25,000	25,000
	2,30,000	2,80,000	3,30,000	1,80,000	3,80,000

	2019 ₹	2020 ₹	2021 ₹	2022 ₹	2023 ₹
Less : Debenture Interest @ 12%	30,000	30,000	30,000	30,000	30,000
	2,00,000	2,50,000	3,00,000	1,50,000	3,50,000
Less : Taxation at 40%	80,000	1,00,000	1,20,000	60,000	1,40,000
Profit	1,20,000	1,50,000	1,80,000	90,000	2,10,000

Capitalisation of Earnings Method

$$\text{Average Profit} = \frac{₹\,1,20,000 + ₹\,1,50,000 + ₹\,1,80,000 + ₹\,90,000 + ₹\,2,10,000}{5} = \frac{₹\,7,50,000}{5}$$

$$= ₹\,1,50,000$$

$$\text{Capital value of earnings} = ₹\,1,50,000 \times \frac{100}{12.5} = ₹\,12,00,000$$

$$\text{Value of a share} = \frac{₹\,12,00,000}{25,000} = ₹\,48$$

Evaluation of Yield Method/Capitalisation of Earnings Method

Merits

(*i*) The value of the share is based on the earnings of the company and not on what a share-holder will get in the event of liquidation of the company.

(*ii*) Normal rate of return is taken into consideration while ascertaining the value of shares.

(*iii*) There is no need to calculate the net realisable value or current cost of asset.

Demerits

(*i*) It is difficult to ascertain the future maintainable profits and normal rate of return.

(*ii*) Net assets value is ignored while ascertaining the value of shares.

(*iii*) This method is not suitable in case the entity is suffering continuous losses.

Suitability

This method is suitable in the following cases :

(*i*) When the company is a going concern and there are no chances of its going into liquidation in near future.

(*ii*) It is suitable for valuation of large block of shares.

(*iii*) When information regarding the factors that affect future maintainable profits are readily available.

FAIR VALUE METHOD OR DUAL METHOD

Net assets method takes into consideration net assets employed in the business while the methods on earnings takes into consideration the dividends/earnings of the company. Therefore, it is argued that both these methods should be combined and average of the two values should be the value of the shares of the entity. This average price is called the fair value of the share.

It is calculated as follows :

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

ILLUSTRATION 35 (Net Asset, Yield and Fair Value Methods)

Your clients Strong Ltd. have approached you for valuation of their shares in the context of their forthcoming share issue. The company was incorporated on 1-4-2020. The following information is extracted from their annual reports for the last 3 years:

(₹ in lakhs)

	Year ended 31st March		
	2021	2022	2023
Gross Fixed Assets	200	700	750
Accumulated Depreciation	20	80	150
Net Current Assets	300	600	750
Loans		500	400
Share Capital			
Equity Shares of ₹ 10 each	400	500	500
Profit before tax	40	60	130

It is understood that the company has implemented a major project in 2021-22 which has started yielding results in 2022-23.

Practices of merchant bankers indicate that an average of values based on net assets and on yield is normally adopted in such cases. The normal industry expectation of yield is 15%. The tax rate is 40%.

You are required to compute the value of the client company's equity shares on the basis of the above information, showing workings as necessary.

SOLUTION

VALUE OF EQUITY SHARES OF STRONG LTD.

(I) Value on net assets basis	(₹ in lakhs) Amount as on 31-3-2023
Fixed Assets (cost ₹ 750 lakhs *less* depreciation ₹ 150 lakhs)	600
Net Current Assets	750
	1,350
Less: Liabilities	400
Net Assets	950
No. of Equity Shares = 50 lakhs	
Value of Equity Share $\left(₹ \text{ in lakhs } \frac{950}{50}\right) = ₹ 19$	

(II) Value on yield basis	(₹ in lakhs) Amount for the Year 2022-23
Profit before tax	120
Less : Tax: 40%	52
Future maintainable profit	78

Capitalised value of future profit at $15\% = \frac{78}{15\%} = \frac{78}{15} \times 100 = 78 \times 100/15 = 520$

No. of Equity Shares = 50 lakhs

Value of each equity Share (₹) (520 ÷ 50) = ₹ 10.40

(III) Fair Value

$$\text{Fair value of each Equity Share} = \frac{\text{Value as per net assets basis} + \text{Value as per yield basis}}{2}$$

$$= \frac{₹\,19.00 + ₹\,10.40}{2} = ₹\,14.70$$

Note : One of the important conditions of the question is that the company has implemented a major project in 2021-22 which had started yielding results in 2022-23. From the given figures of Profit before Tax, it can be observed that Profit before Tax of 2022-23 is altogether different from previous two years' figures because of the implementation of the major project. Accordingly, Profit before Tax of 2022-23 only has been used for calculating yield based value. It may also be noted that weighted average method is not applicable in such a situation.

VALUATION OF PREFERENCE SHARES

The market expectation about return from preference shares and equity shares cannot be identical because the nature of these financial instruments are altogether different. Preference shares are fixed dividend bearing instruments whereas equity shares bear residual right on the company's profit.

For valuation of preference shares, the following factors are generally considered :

(*i*) Risk-free rate plus a small risk premium;

(*ii*) Ability of the company to pay preference dividend on a regular basis;

(*iii*) Ability of the company to redeem preference share capital.

(*i*) Risk free rate *plus* a Small Risk Premium: Risk free rate is the rate of return expected by the preference shareholders if there is no risk involved whatsoever. It is the pure interest rate prevailing in the concerned economy, *i.e.*, the rate of return on long-term government securities. Risk premium is the premium for business risk appropriate for the industry to which the company belongs.

(*ii*) Ability of the company to pay Preference Dividend: The ability to pay preference dividend may be determined as follows :

$$\text{Preference Dividend Cover} = \frac{\text{Profit After Tax}}{\text{Preference Dividend}}$$

The higher the cover better it is for preference shareholders.

(*iii*) Ability of the company to Redeem Preference Share Capital: The net assets cover, *i.e.*, the ability of the company to redeem the preference share capital in time is determined as follows :

$$\text{Net Assets Cover} = \frac{\text{Net Assets available for Shareholders}}{\text{Preference Share Capital}}$$

The higher the cover better it is for preference shareholders.

Value of a Preference Share can be ascertained by applying the following formula :

$$\text{Value of a Preference Share} = \frac{\text{Rate of Preference Dividend}}{\text{Normal Rate of Return}} \times \text{Paid up Value per Share.}$$

ILLUSTRATION 36 (Valuation of Equity and Preference Shares)

Compute the values of a preference share and an equity share of each of the companies A and B on the basis of following information :

	Company A	*Company A*
	₹	₹
Profit after tax	*10,00,000*	*10,00,000*
12% Preference Capital (shares of ₹ 100 each)	*10,00,000*	*20,00,000*
Equity Capital (shares of ₹ 10 each)	*50,00,000*	*40,00,000*

Assume that market expectation is 15% and that 80% of profits are distributed.

SOLUTION

Valuation of Equity Shares

(*i*) If the purpose of valuation is to provide data base to aid the decision of buying a small (non-controlling) portion of the equity of the companies, dividend capitalisation method is most appropriate. Under this method, the value of each equity share is given by :

$$\frac{\text{Dividend per share}}{\text{Market capitalisation rate}} \times 100 \text{ [For calculation of Dividend per Share (See W.N.)]}$$

Value of an Equity Share of Company A : $\frac{₹1.76}{15} \times 100 = ₹11.73$

Value of an Equity Share of Company B: $\frac{₹1.90}{15} \times 100 = ₹12.67$

(*ii*) If the purpose of valuation is to provide data base to aid the decision of buying, controlling interest in the companies, EPS capitalisation method is most appropriate. Under this method, the value of each equity share is given by :

$$\frac{\text{EPS}}{\text{Market capitalisation rate}} \times 100 \text{ [For calculation of Earnings per Share (See WN)]}$$

Value of an Equity Share of Company A : $\frac{₹1.76}{15} \times 100 = ₹11.73$

Value of an Equity Share of Company B : $\frac{₹1.90}{15} \times 100 = ₹12.67$

Valuation of Preference Shares

In the question, no separate market expectation (normal) rate is given for equity and preference shares. It has been presumed that slightly lesser market capitalisation (normal) rate as compared to equity shares, say (15% - 2%) *i.e.* 13% is sufficient for valuation of preference shareholders. The value of net assets of the companies are not given and, therefore, their ability for redemption cannot be tested. However, the preference dividend cover can be found out as given below :

$$\text{Preference Dividend Cover} = \frac{\text{Profit After Tax}}{\text{Preference Dividend}}$$

	Company A	*Company B*
Profit After Tax	10,00,000	10,00,000
Preference Dividend	1,20,000	2,40,000
Preference Dividend Cover	8.33	4.17

Company A has better preference dividend coverage of 8.33 as compared to Company B's coverage of 4.17. Therefore, market expectation rate for company B should be more, say by 0.50%. The market expectation rate in case of company A is taken as 13% and for company B as 13.5%. Based on these rates, the value of preference shares of the two companies would be as follows :

$$\text{Value of a Preference Share} = \frac{\text{Actual Dividend Rate}}{\text{Market Expectation Rate}} \times \text{Paid up Value per Share}$$

Company A	*Company B*
$\frac{12\%}{13\%} \times ₹100 = ₹92.31$	$\frac{12\%}{13.5\%} \times ₹100 = ₹88.89$

Working Note:

Calculation of Earnings Per Share (EPS) and Dividend Per Share (DPS)

	Company A ₹	*Company B* ₹
Profit after tax	10,00,000	10,00,000
Less: Preference dividend	1,20,000	2,40,000
Earnings available to equity shareholders (A)	8,80,000	7,60,000
No. of equity shares (B)	5,00,000	4,00,000
Earnings for Share (A)/(B)	1.76	1.90
Retained earnings (C)	1,76,000	1,52,000
Total dividend (A) - (C) = (D)	7,04,000	6,08,000
Dividend Per Share (D)/(B)	1.408	1.520

MISCELLANEOUS ILLUSTRATIONS

ILLUSTRATION 37 (Intrinsic Value method and yield method)

Following particulars are available in relation to a company:

(i) Equity Share Capital: 20,000 equity shares of ₹ 10 each fully paid.

(ii) Preference Share Capital: 2,000 12% Preference Shares of ₹ 100 each fully paid.

(iii) Reserves and Surplus: ₹ 30,000.

(iv) External Liabilities: Creditors ₹ 24,000; Bills payable: ₹ 12,000.

(v) *Average normal profit after tax earned each year by the company:* ₹ *57,000.*

(vi) *Transferred to general reserve from surplus in the statement of profit and loss:* ₹ *10% of profit after tax.*

Assets of the company include one fictitious item of ₹ *1,600. The normal rate of return of the equity shares of this type of company is 10%. Ignore goodwill.*

Compute the value of the equity share of the company as per (i) intrinsic value method; and (ii) yield method.

[B.Com. Delhi, 2018]

SOLUTION

(*i*) **Calculation of value of a share by intrinsic value method:**

Equity Share Capital	2,00,000
Reserves and Surplus	30,000
	2,30,000
Less: Fictitious Asset	1,600
Net Assets	2,28,400
Number of equity shares	20,000

Intrinsic value per share = 2,28,000/20,000 = ₹ 11.42

(*ii*) **Calculation of value of a share by yield method**

Average annual profit after tax	57,000
Less: Transfer to general reserve (10%)	5,700
	51,300
Less: Preference Dividend @ 12%	24,000
	27,300

$$\text{Expected rate of dividend} = \frac{27,300}{2,00,000} \times 100 = 13.65\%.$$

$$\text{Value per share} = \frac{\text{Expected Rate of Dividend}}{\text{Normal Rate of Dividend}} \times \text{Paid up value}$$

$$= \frac{₹13.65}{₹10} \times ₹10 = ₹13.65$$

ILLUSTRATION 38 (Intrinsic value method and yield method)

Balance Sheet of Diamond Ltd. as on 31st March 2017 is:

Particulars	*Amount (₹)*
I ***EQUITY AND LIABILITIES***	
1. Shareholder's Funds	
(a) *Share Capital - 3000 shares of* ₹ *100 each*	*3,00,000*
(b) *Reserves and Surplus*	
General Reserve	*1,50,000*

	Particulars	Note No.	₹
	Buildings at W.D.V.		4,45,00,000
	Plant & machinery at W.D.V.		1,10,00,000
	Furniture and fixtures at W.D.V.		45,00,000
(*b*)	Non-current Investments:		
Units of U.T.I (18,00,000 units)			1,80,00,000
2.	**Current Assets**		
(*a*)	Inventories (Stock-in-trade)		1,80,00,000
(*b*)	Trade receivables (Sunday debtors)		1,30,00,000
(*c*)	Cash and cash equivalents (Bank)		8,00,000
(*d*)	Other current assets (Miscellaneous expenditure)		2,00,000
	Total		**11,00,00,000**

Note : Currents year profits include income of ₹ 26,00,000 from units. On revaluations, buildings are found to be worth ₹ 10 crores and plant and machinery is determined to have a value of a crore of rupees. The money invested in units is not required for business purposes in the near future. Normal profit in the industry is at 18% p.a. after tax on the capital employed. Income tax liability for the company usually works out to be 50% of book profits. Calculate the value of goodwill at 4 years' purchase of the super profits. [***B. Com. (Hons.) Delhi, 2023, Modified***]

SOLUTION

Calculation of average capital employed

	₹
Building	10,00,00,000
Plant and Machinery	1,00,00,000
Furniture and Fittings	45,00,000
Inventories	1,80,00,000
Sundry Debtors	1,30,00,000
Bank Balance	8,00,000
	14,63,000
Less: Creditor	90,000
Closing Capital Employed	13,73,000
Less: half of the profits 50% of 4,90,000	2,45,000
Average Capital Employed	11,28,000

Calculation of future maintainable profits

Profit after tax	4,90,00,000
Tax (@ 50% on profit before tax)	4,90,00,000
Profit before tax	9,80,00,000
Less: Interest income	26,00,000
Adjusted profit after tax	9,54,00,000
Less: Tax (50%)	4,77,00,000
Future maintainable profit after tax	4,77,00,000

Calculation of goodwill

Normal Profit = 18% of ₹ 11,28,00,000 = ₹ 2,03,04,000

Super Profit = FMP — Normal Profit

= ₹ 4,77,00,000 — ₹ 2,03,04,000 = ₹ 2,73,96,000

Goodwill = Super Profit × No. of years' purchase

= ₹ 2,73,96,000 × 4 = ₹ 10,95,84,000

ILLUSTRATION 10 (Calculation of future maintainable profit and goodwill)

A Ltd. proposed to purchase the business carried on by M/s X & Co. Goodwill for this purpose is agreed to be valued at three years' purchase of the weighted average profits of the past four years. The appropriate weights to be used and profit for the year ending 31st March are:

2013-14	*1*	*₹ 1,01,000*
2014-15	*2*	*₹ 1,24,000*
2015-16	*3*	*₹ 1,00,000*
2016-17	*4*	*₹ 1,40,000*

On a scrutiny of the accounts, the following matters are revealed:

(i) On 1st December, 2015 a, major repair was made in respect of the plant incurring ₹ 30,000 which was charged to revenue. The said sum is agreed to be capitalised for goodwill calculation subject to adjustment of depreciation of 10% on reducing balance method.

(ii) The closing stock for the year 2014-15 was over-valued by ₹ 12,000.

(iii) To cover management cost, an annual charge of ₹ 24,000 should be made for the purpose of goodwill valuation against the profits of all the years.

Compute the value of goodwill of the firm.

SOLUTION

	2013-14 ₹	2014-15 ₹	2015-16 ₹	2016-17 ₹
Profits as per book	1,01,000	1,24,000	1,00,000	1,40,000
Less : Management expenses	24,000	24,000	24,000	24,000
	77,000	1,00,000	76,000	1,16,000
Less : Overvaluation of closing stock	—	12,000	—	—
	77,000	88,000	76,000	1,16,000
Add : Overvaluation of opening stock	—	—	12,000	—
	77,000	88,000	88,000	1,16,000
Add : Major repair of plant to be treated as capital expenditure	—	—	30,000	—
	77,000	88,000	1,18,000	1,16,000
Less : Depreciation on capital expenditure @ 10% on time basis by w.d.v. method	—	—	1,000	2,900
Adjusted Profits (P)	77,000	88,000	1,17,000	1,13,100
Weights (W)	1	2	3	4
Product (P × W)	77,000	1,76,000	3,51,000	4,52,400

$$\text{Future maintainable profits (Adjusted average profits)} = \frac{₹\,77,000 + ₹\,1,76,000 + ₹\,3,51,000 + ₹\,4,52,400}{1 + 2 + 3 + 4}$$

$$= ₹\,10,56,400/10 = ₹\,1,05,640$$

Goodwill = Future maintainable profits × Number of Years' Purchase
= ₹ 1,05,640 × 3 = ₹ 3,16,920

ILLUSTRATION 11 (Calculation of future maintainable profit and goodwill)

XYZ Ltd. proposed to purchase the business carried on by M/s A & Co. Goodwill for this purpose is agreed to be valued at two years purchase of the weighted average profits of the past three years. The appropriate weights to be used and profits are :

Year	Weights	Amount (₹)
2012-13	1	12,40,000
2013-14	2	10,00,000
2014-15	3	14,00,000

On scrutiny of accounts, the following matters are revealed

(i) *On 31st December, 2013 a major repair was made in respect of the plant incurring ₹ 50,000 which was charged to revenue. The said sum is agreed to be capitalised for goodwill calculations subject to adjustment of depreciation of 10% p.a., on reducing balance method.*

(ii) *The closing stock for the year 2012-13 was overvalued by ₹ 15,000.*

(iii) *To cover management cost; an annual charge of ₹ 25,000 should be made for the purpose of goodwill valuation against the profits of all the years.*

Compute the value of goodwill of the firm. ***[B. Com. (H), Delhi, 2016]***

SOLUTION

Statement Showing Calculation of Adjusted Past Profits

Particulars	2012-13 (₹)	2013-14 (₹)	2014-15 (₹)
Profits	12,40,000	10,00,000	14,00,000
Major repairs	—	50,000	—
Depreciation @ 10% p.a.		(1,250)	(4,875)
	12,40,000	10,48,750	13,95,125
Overvaluation of closing stock	(15,000)	—	—
	12,25,000	10,48,750	13,95,125
Overvaluation of opening stock	—	(15,000)	—
	12,25,000	10,63,750	13,95,125
Management expenses	(25,000)	(25,000)	(25,000)
Adjusted past profits	12,00,000	10,38,750	13,70,125

$$\text{Future maintainable profits} = \frac{₹\,12,00,000 \times 1 + ₹\,10,38,750 \times 2 + ₹\,13,70,125 \times 3}{1+2+3}$$

$$= \frac{₹\,12,00,000 + ₹\,20,77,500 + ₹\,41,10,375}{6}$$

$$= \frac{₹\,73,87,875}{6} = ₹\,12,31,312.50$$

Goodwill = Future Maintainable Profits × No. of years' purchase
= ₹ 12,31,312.50 × 2 = ₹ 24,62,625

ILLUSTRATION 12 (Computation of future maintainable profits and goodwill)

A Ltd. has the following profits after tax @ 40% :

2019-20 (₹)	*2020-21 (₹)*	*2021-22 (₹)*	*2022-23 (₹)*
90,000	*1,02,000*	*1,20,000*	*1,50,000*

Other Information

(i) Income from non-trade investments is ₹ 2,000 in each of the aforesaid years.

(ii) On 1st April, 2020 a machine having a book value of ₹ 10,000 was sold for ₹ 12,000. The proceeds from the sale of the machine was wrongly credited to the Profit and Loss Account. No entry was passed to rectify this. Depreciation is charged @ 10% on written down value basis.

(iii) Closing stock was undervalued by ₹ 5,000 in 2021-22 and by ₹ 6,000 in 2022-23.

(iv) Increase in managerial remuneration is ₹ 20,000 p.a. w.e.f. 1-4-2023.

(v) Increase in profit before tax for next 3 years due to winning of a contract ₹ 22,706.

Calculate the value of goodwill at 3 years purchase as per weighted average profit method.

SOLUTION

Calculation of Average Past Adjusted Profits before Tax

	Particulars	2019-20 (₹)	2020-21 (₹)	2021-22 (₹)	2022-23 (₹)
A.	Profits	90,000	1,02,000	1,20,000	1,50,000
B.	Tax paid $\left(\frac{A \times 40}{60}\right)$	60,000	68,000	80,000	1,00,000
C.	Profit before tax (A+B)	1,50,000	1,70,000	2,00,000	2,50,000
	Income from non-trade Investments	–2,000	–2,000	–2,000	–2000
	Proceeds from sale of machine wrongly credited to Profit and Loss Account	—	–12,000	—	—
	Depreciation on the above Machinery wrongly charged		+ 1,000	+ 900	810
	Under valuation of closing stock	—	—	+ 5,000	+ 6,000
	Under valuation of opening stock	—	—	—	– 5,000
D.	Past adjusted profits before tax	1,48,000	1,57,000	2,03,900	2,49,810
E.	Weights	1	2	3	4
F.	Weighted Profits (D × E)	1,48,000	3,14,000	6,11,700	9,99,240

$$\text{G. Average Past Adjusted Profits} = \frac{₹\,1,48,000 + ₹\,3,14,000 + ₹\,6,11,700 + ₹\,9,99,240}{1+2+3+4}$$

$$= \frac{₹\,20,72,940}{10} = ₹\,2,07,274$$

Calculation of Future Maintainable Profits

Particulars	₹
Average Past Adjusted Profits	2,07,294
Less : Increase in managerial remuneration	20,000
	1,87,294
Add: Increase in profit before tax due to new contract ₹ 22,706	22,706
Future maintainable profits	2,10,000
Less: Tax @ 30%	63,000
Future maintainable profits after tax	147,000

Goodwill = Future maintainable profits × Number of years' purchase
= ₹ 1,47,000 × 3 = ₹ 4,41,000

2. Super Profit Method (or Non-time Adjusted Super Profit Method)

Excess of future maintainable profit over normal profit is called Super Profit. Future maintainable profit has already been explained. Normal profit is based upon normal rate of return and average capital employed. *Under this method, goodwill is calculated at a certain number of years' purchase of super profit.* Thus, goodwill is the aggregate super profit of the future years for which such profit is expected to be maintained. This method ignores the time value of money. If nothing is mentioned in the question regarding the method of valuation of goodwill but the factors on which the valuation of goodwill is dependent under this method are given, this method should be applied. The formula is :

Goodwill = Super Profit × Number of years' Purchase

OR

Goodwill = (Future Maintainable Profits - Normal Profits) × Number of Years' Purchase
Where,

Normal Profits = Average Capital Employed × Normal Rate of Return (after tax)

The valuation of goodwill under this method depends upon *(i)* Future maintainable profits, *(ii)* Average capital employed, *(iii)* Normal rate of return and *(iv)* period for which super profit is projected.

ILLUSTRATION 13

(1) Profit for the past three years are:

Year	Profits (₹)
2020-21	*25,000*
2021-22	*30,000*
2022-23	*27,500*

(2) Normal rate of return = 10%

(3) Capital employed = ₹ 1,40,000.

(4) The profits included non-recurring profits on an average basis of ₹ 1,200.

(5) *Super profit can be maintained for 5 years.*

Calculate goodwill by super profit method.

SOLUTION

$$\text{Future Maintainable Profit} = \frac{₹\ 25,000 + ₹\ 30,000 + ₹\ 27,500}{3} - ₹\ 1,200 = ₹\ 26,300$$

Normal Profit $= ₹\ 1,40,000 \times 10/100 = ₹\ 14,000$

Super Profit = Future maintainable profit – Normal profit

$= ₹\ 26,300 - ₹\ 14,000 = ₹\ 12,300$

Goodwill = Super profit × Years for which super profit can be maintained

$= ₹\ 12,300 \times 5 = ₹\ 61,500$

Step 2 : Calculate Normal Profit. It is calculated as follows:

Normal Profits = Average Capital Employed × Normal Rate of Return

Step 3 : Calculate Average Future Maintainable Profit

Step 4 : Calculate Super Profit. It is calculated as follows:

Super Profit = Average Future Maintainable Profit – Normal Profit

Step 5 : Calculate Goodwill. It is calculated as follows:

Goodwill = Super Profit × Number of Years' Purchase

ILLUSTRATION 14 (Super Profit Method)

The following information is in respect of B Ltd. :

(*i*) Future maintainable profit after tax ₹ 2,00,000;

(*ii*) Current year's profit after tax ₹ 1,50,000;

(*iii*) Closing capital employed ₹ 9,00,000;

(*iv*) Dividend paid at the end of the year ₹ 50,000.

Calculate value of goodwill at 3 years purchase of the super profit, assuming normal rate of return 10%.

SOLUTION

Average Capital Employed = Closing Capital Employed + Dividend paid $-\frac{1}{2}$ of Current Year's Profit after Tax

Average Capital Employed = ₹ 9,00,000 + ₹ 50,000 $-\frac{1}{2}$ × 1,50,000

= ₹ 9,50,000 - ₹ 75,000 = ₹ 8,75,000

Normal profit = ₹ 8,75,000 × 10/100 = ₹ 87,500

Super profit = Future maintainable profit – normal profit

= ₹ 2,00,000 – ₹ 87,500 = ₹ 1,12,500

Goodwill = Super profit × Number of years' purchase

= ₹ 1,12,500 × 3 = ₹ 3,37,500

ILLUSTRATION 15 (Super profit method of valuation of goodwill)

From the following information you are required to calculate goodwill at four year's purchase of super profits.

BALANCE SHEET OF SWATI LTD.
as on 31-03-2023

Particulars	*Note No.*	₹
I EQUITY AND LIABILITIES		
1. Shareholders' Funds		
(a) Share Capital	*1*	*7,50,000*
(b) Reserves and Surplus	*2*	*3,75,000*

Particulars	*Note No.*	₹
2. Non-current Liabilities		
Long-term Borrowings (8% Debentures)		*2,50,000*
3. Current Liabilities		
(a) Trade Payables		*1,25,000*
(b) Short-term Provisions (Provision for taxation)		*50,000*
Total		*15,50,000*
II ASSETS		
1. Non-current Assets		
(a) Property, Plant and Equipment		*9,00,000*
(b) Intangible Assets (Goodwill)		*50,000*
(c) Non-current Investments (5% Government loan)		*1,00,000*
2. Current Assets		*5,00,000*
Total		*15,50,000*

Notes to Accounts

Particulars	₹
1. Share Capital	
25,000 8% Preference Shares of ₹ 10 each	*2,50,000*
50,000 Equity Shares of ₹ 10 each	*5,00,000*
	7,50,000
2. Reserves and Surplus	
Surplus i.e. Balance in the Statement of Profit and Loss	*3,75,000*

The average profit of the company after tax is ₹ 1,55,000. The market value of machinery included in property, plant and equipment is ₹ 25,000 more. Expected rate of return is 10%. Provision for tax is sufficient.

SOLUTION

Calculation of capital employed

		₹
Property, plant and equipment (9,00,000 + 25,000)		9,25,000
Current Assets		5,00,000
		14,25,000
Less: Debentures	2,50,000	
Creditors	1,25,000	
Provision for taxation	50,000	4,25,000
Capital employed as on 31-3-2023		10,00,000
Less: Half of current year's trading profit		75,000
[1/2 (1,55,000-5% of 1,00,000)]		9,25,000

Calculation of Super Profit

Future Maintainable profit ₹ 1,50,000

(Profit after tax *minus* interest on Government Loan)

Normal profit = Average Capital Employed × Expected Rate of return

= ₹ 9,25,000 × 10/100 = ₹ 92,500

Super profit = Future maintainable profit - Normal profit

= ₹ 1,50,000 - ₹ 92,500 = ₹ 57,500

Calculation of goodwill

Goodwill = Super profit × Number of years' purchase

= 57,500 × 4 = ₹ 2,30,000

Notes : (*i*) Investment in 5% Government Loan is taken as non-trading asset and therefore, not counted while computing capital employed *(ii)* Interest on Government Loan is excluded from the profit made by the business to arrive at future maintainable profit *(iii)* Additional depreciation on appreciated value of machinery has been ignored in the absence of information regarding depreciation rate *(iv)* It is presumed that interest income from the Govt. loan has not been used in the business for trade purposes.

4. Capitalisation of Super Profit Method

Under this method, the value of goodwill is calculated by capitalising the super profit at the normal rate of return. This is based on the assumption that super profit will continue for indefinite period in future. In other words, this method attempts to ascertain the amount of capital required to earn the super profit. In this method time value of money is ignored. The formula is:

$$\text{Goodwill} = \frac{\text{Super Profit}}{\text{Normal Rate of Return}}$$

Note: This method can also be adopted when number of years' purchase is not given in the question and the question is silent about the method of valuation of goodwill.

ILLUSTRATION 17

The following particulars are available in respect of the business carried on by a trader:

(1) *Profit for the years: 2020-21* ₹ 50,000; 2021-22 - ₹ *60,000 and 2022-23* ₹ *55,000.*

(2) *Normal rate of return = 10%*

(3) *Average Capital employed =* ₹ *3,00,000*

(4) *Present value of an annuity of one rupee for 5 years at 10% = 3.78*

(5) *The profits included non-recurring profits on an average basis of* ₹ 3,000.

You are required to calculate the value of goodwill: (i) As per five years purchase of Super Profits; (ii) As per capitalisation of Super Profit Method and (iii) As per Annuity Method.

SOLUTION

Calculation of Super Profit

Future Maintainable $= \frac{₹\ 50,000 + ₹\ 60,000 + ₹\ 55,000}{3} - ₹\ 3,000 = ₹\ 52,000$

Normal Profit $= ₹\ 3,00,000 \times 10/100 = ₹\ 30,000$

Super Profit = Future Maintainable Profit - Normal Profit

$= ₹\ 52,000 - ₹\ 30,000 = ₹\ 22,000$

Goodwill as per Super Profit method $= ₹\ 22,000 \times 5 = ₹\ 1,10,000$

Goodwill as per Capitalisation of Super Profit Method $= 22,000 \times 100/10 = ₹\ 2,20,000$

Goodwill as per Annuity Method $= ₹\ 22,000 \times 3.78 = ₹\ 83,160$

ILLUSTRATION 18 (Capitalisation of Super Profit method)

X has invested an average sum of ₹ 3,00,000 in his own business which is a very profitable one. The annual profit earned from his business is ₹ 60,000 which includes a sum of ₹ 10,000 received as compensation for acquisition of a part of his business premises. The money could have been invested in deposits for a period of 5 years and over at 10% interest and he himself could earn ₹ 7,200 per annum in alternative employment. Considering 2% as fair compensation for risk involved in the business, calculate the value of goodwill of his business on Capitalisation of Super Profit at the normal rate of return.

SOLUTION

Calculation of Super Profit

	₹
Annual profit	60,000
Less: Compensation for premises not being business income	10,000
	50,000
Less: Reasonable remuneration for X	7,200
Future maintainable profit	42,800
Less: Normal profit (10 + 2) % of ₹ 3,00,000	36,000
Super Profit	6,800

Calculation of Goodwill by Capitalisation of Super Profits Method

$$\frac{\text{Super Profit}}{\text{Normal Rate of Return}} = \frac{6,8000}{12\%} = \frac{₹\ 6,800 \times 100}{12} = ₹\ 56,667$$

5. Capitalisation Method (or Capitalisation of Future Maintainable Profit Method)

Under this method future maintainable profit is capitalised applying the normal rate of return and from such value actual closing capital employed is deducted to arrive at the value of goodwill. The capitalised value of future maintainable profit is called normal capital employed or capitalised value of business. In this method time value of money is ignored. The formula for calculating goodwill is :

ILLUSTRATION 19 (Super profit, annuity method and capitalisation methods)

The following particulars are available in respect of the business carried on by a trader:

(i) *Profits earned for the years :*

Year	***Profits (₹)***
2020-21	*2,00,000*
2021-22	*2,40,000*
2022-23	*2,20,000*

(ii) *Normal rate of return* — *10%*

(iii) *Capital employed* — ₹ *12,00,000*

(iv) *Present value of an annuity of one rupee for 5 years at 10% = 3.78.*

(v) *The profits included non-recurring profit on an average basis of* ₹ 3,000.

You are required to calculate the value of goodwill :

(a) *As per 5 years' purchase of super profits.*

(b) *As per Annuity Method.*

(c) *As per Capitalisation Methods.*

SOLUTION

(i) *Calculation of future maintainable profits*

Average profit = $\frac{₹\ 2,00,000 + ₹\ 2,40,000 + ₹\ 2,20,000}{3}$ = ₹ 2,20,000

Less : Non-recurring income 3,000

2,17,000

(ii) *Calculation of normal profit*

Normal Profit = Average Capital employed × Normal rate of return

= 12,00,000 × 10% = 12,00,000 × $\frac{10}{100}$ = ₹ 1,20,000

(iii) *Calculation of super profit*

Super Profit = Future Maintainable Profits - Normal Profit

= ₹ 2,17,000 - ₹ 1,20,000 = ₹ 97,000

(iv) *Calculation of Goodwill*

(a) Goodwill as per super profit method :

Goodwill = Super Profit × Number of years' purchase

= ₹ 97,000 × 5 = ₹ 4,85,000

(b) Goodwill as per annuity method :

Goodwill = Super Profit × Present Value factor for number of years' purchase

= ₹ 97,000 × 3.78 = ₹ 3,66,660

(c) Goodwill as per capitalisation of super profit method :

$$\text{Goodwill} = \frac{\text{Super Profit}}{\text{Normal Rate of Return}} = \frac{97,000}{10\%}$$

$$= \frac{₹\ 97,000}{10} \times 100 = ₹\ 9,70,000$$

(d) Goodwill as per capitalisation of future maintainable profit method :

$$\text{Goodwill} = \frac{\text{Future Maintainable Profit}}{\text{Normal Rate of Return}} - \text{Closing Capital employed}$$

$$= \frac{₹\ 2,17,000}{10\%} - ₹\ 12,00,000$$

$$= \frac{₹\ 2,17,000}{10} \times 100 - ₹\ 12,00,000$$

= ₹ 21,70,000 – ₹ 12,00,000 = ₹ 9,70,000

ILLUSTRATION 20 (Super Profit Method)

From the following information, you are required to show the following:

(i) Capital Employed; (ii) Average Capital Employed (iii) Goodwill on the basis of 5 years' purchase of the average super profit.

BALANCE SHEET OF Z LTD.
as on 31st March, 2023

Particulars	Note No.	₹
I EQUITY AND LIABILITIES		
1. Shareholders' Funds		
(a) Share Capital	*1*	*3,00,000*
(b) Reserves and Surplus	*2*	*1,60,000*
2. Non-current liabilities		
Long-term Borrowings (10% Debentures)		*90,000*
3. Current Liabilities		
(a) Trade Payables		*60,000*
(b) Short-term Provision (Provision for taxation)		*20,000*
Total		*6,30,000*
II ASSETS		
1. Non-current Assets		
(a) Property, Plant and Equipment		*3,50,000*
(b) Intangible Assets (Goodwill)		*30,000*
(c) Non-current Investments (6% Government loan)		*45,000*
2. Current Assets		
(a) Inventories		*1,50,000*
(b) Trade Receivables		*50,000*
(c) Other Non-current Assets (Discount on issue of debentures)		*5,000*
Total		*6,30,000*

Notes to Accounts

Particulars	₹
1. *Share Capital*	
1,000 9% Preference shares of ₹ 100 each	*1,00,000*
20,000 Equity Shares of ₹ 10 each	*2,00,000*
	3,00,000
2. *Reserves and Surplus*	
General Reserve	*1,60,000*

The current market value of the plant included in property, plant and equipment is ₹ 15,000 more. The average profit of the company (after deductions for interest on debentures and taxes) is ₹ 68,000. Tax already provided is sufficient.

Expected rate of return is 10%; Rate of depreciation on property, plant and equipment is 10%. Depreciation on appreciated value of plant is to be considered for valuation of goodwill.

SOLUTION

(*i*) Calculation of average maintainable profit:

		₹
Reported Average Profit		68,000
Less: Income from Govt. Loan	2,700	
Additional Depreciation (10% on increased value of plant)	1,500	4,200
Future Maintainable Profit		63,800

(*ii*) Calculation of Capital Employed and Average Capital Employed

		₹
Property, Plant and Equipment (3,50,000 + 15,000)		3,65,000
Current Assets		2,00,000
		5,65,000
Less: Provision for Taxation	20,000	
10% Debentures	90,000	
Creditors	60,000	1,70,000
Capital Employed		3,95,000
Less : $\frac{1}{2}$ of ₹ 63,800		31,900
Average Capital Employed		3,63,100

(*iii*) Calculation of Super Profits

	₹
Average Maintainable Profit	63,800
Less: Normal Profit, being 10% of Average Capital Employed ₹ 3,63,100	36,310
	27,490

(*iv*) Goodwill at 5 years' purchase of Super Profit = 27,490 × 5 = ₹ 1,37,450

Notes: (*i*) Depreciation of ₹ 1,500 has been provided on the appreciated value of plant, *(ii)* As the investment in the 6% Government Loan is a non-trading asset, it has been excluded while calculating capital employed. Similarly the income from investment of ₹ 2,700 has also been excluded while calculating maintainable profit and current year's trading profit. Capital employed has been ascertained after deducting from the closing capital employed, half of the current year's profit from the assets used in the business. *(iii)* It is assumed that interest on Govt. Loan has not been used in the business.

ILLUSTRATION 21 (Goodwill as per Super Profit Method)

From the following information supplied to you, ascertain the value of goodwill of A Ltd. which is carrying business as retail trader, under Super Profit Method:

BALANCE SHEET

As at 31st March, 2023

Particulars	*Note No.*	₹
I EQUITY AND LIABILITIES		
1. Shareholders' Funds		
(*a*) Share Capital (5,000 equity shares of ₹ 500 each fully paid)		5,00,000
(*b*) Reserves and Surplus (Surplus in the Statement of P&L)		1,13,300
2. Non-current Liabilities		–
3. Current Liabilities		
(*a*) Short-term Provisions (Bank Overdraft)		1,16,700
(*b*) Trade Payables.		1,81,000
(*c*) Short-term Provision (Provision for Tax)		39,000
		9,50,000
II ASSETS		
1. Non-Current Assets		
(*a*) Property, Plant and Equipment:		
Land and Buildings at cost		2,20,000
Plant and Machinery at cost		2,00,000
(*b*) Intangible Assets (Goodwill)		50,000
2. Current Assets		
(*a*) Inventories (Stock-in-trade)		3,00,000
(*b*) Trade Receivables (Trade debtors less provisions doubtful debts)		1,80,000
		9,50,000

The company commenced operations in 2017. The profits for the last five years (after tax) have been as follows:

Year ending 31st March	₹
2019	40,000 (Loss)
2020	88,000
2021	1,03,000
2022	1,16,000
2023	1,30,000

The loss in the year ending 31st March, 2019 occurred due to a prolonged strike. The income tax paid so far has been at the average rate of 35%, but it is likely to be 40% from 2023-24 onwards. Dividends were distributed at the rate of 15% for the last four years. The market price of the share is ruling at ₹ 125 *at the year ended on 31st March, 2023. Profits till 31st March, 2023 have been ascertained after debiting* ₹ *2,40,000 as remuneration to the managing director. The remuneration*

payable to the managing director with effect from 1st April, 2023 will be ₹ 3,60,000 per annum. The company has been able to secure a contract for the supply of materials at advantageous prices. The advantage has been valued at ₹ 1,40,000 per annum for the next three years. Goodwill is to be valued at three years' purchase of super profit.

SOLUTION

(*i*) Computation of Capital Employed

		₹
Land and Building at cost		2,20,000
Plant and Machinery at cost		2,00,000
Stock-in-trade		3,00,000
Sundry Debtors		1,80,000
		9,00,000
Less: Bank Overdraft	1,16,700	
Sundry Creditors	1,81,000	
Provision for taxation	39,000	3,36,700
Capital employed at the end		5,63,300
Add: Dividend paid for the year	75,000	
Less: Half of the profits for the year	65,000	10,000
Average capital employed		5,73,300

(*ii*) Computation of Normal Rate Return

Average Dividends for the last four years 15%

Market price of share on 31st March, 2016 ₹ 125

$$\text{Normal Rate of Return} = \frac{15 \times 100}{125} = 12\%$$

(*iii*) Computation of Normal Profit

5,73,300 × 12/100 = ₹ 68,796

(*iv*) Computation of Future Maintainable Profit

Year ending 31st March	*Profit (₹)*	*Weight*	*Product (₹)*
2020	88,000	1	88,000
2021	1,03,000	2	2,06,000
2022	1,16,000	3	3,48,000
2023	1,30,000	4	5,20,000
		10	11,62,000

Average past adjusted profit after tax (11,62,200/10)	1,16,200
Average past adjusted profit before tax (1,16,200 × 100/65)	1,78,769
Add: Savings in cost of the materials	1,40,000
	3,18,769

Less: Increase in remuneration to Managing Director	1,20,000
	1,98,769
Less : Tax expense @ 40%	79,508
Future Maintainable Profit	1,19,261

Note : (1) As the Loss in 2019 has occurred due to prolonged strike, it has been ignored while calculating future maintainable profit. (2) Since there is an increasing trend in the past profit, weighted average has been used to calculated future maintainable profits.

(v) *Computation of Super Profit*

Super Profit = Future Maintainable profit – Normal Profit

= ₹ 1,19,261 – ₹ 68,796 = ₹ 50,465

(vi) *Valuation of Goodwill*

Goodwill = Super Profit × Number of year's purchase

= ₹ 50,465 × 3 = ₹ 1,51,395

ILLUSTRATION 22 Years' (Calculation of goodwill as per shareholders' funds approach and long-term funds approach)

Following is the Balance Sheet of × Ltd. as at 31-03-2023:

Particulars	*Note No.*	₹ in Lacs
I EQUITY AND LIABILITIES		
1. Shareholders' Funds		
(*a*) Share Capital of ₹ 10 each fully paid)		160
(*b*) Reserves and Surplus (Profit and Loss Account)		40
2. Non-current Liabilities		
Long-term Borrowings (13% Debentures)		240
3. Current liabilities		
Trade Payables.		80
Total		520
II ASSETS		
1. Non-Current Assets		
Property, Plant and Equipment		360
2. Current Assets		
(*a*) Inventories		80
(*b*) Trade Receivables		40
(*c*) Cash and Bank Balance		40
		520

Calculate goodwill assuming normal rate of returns on shareholders' funds 20% and on long-term funds 18%. Future maintainable profits before interest are 76.8 lacs. Calculate leverage effect.

SOLUTION

Calculation of capital employed & FMP

Particulars	*Shareholders' Funds Approach*	*Long-term Funds Approach*
	₹ in lacs	₹ in lacs
Share Capital	160	160
Profit and Loss	40	40
13% Debentures	—	240
Capital Employed	200	440
Future Maintainable Profit (before interest)	76.8	76.8
Less: Interest on 13% Debentures (13% of ₹ 240 lacs)	31.2	—
Future maintainable profit	45.6	76.8

Valuation of goodwill as per capitalisation of future maintainable profit

Goodwill = Normal Capital Employed – Actual closing capital employed

$$= \frac{\text{FMP}}{\text{NRR}} - \text{Actual closing Capital Employed}$$

Goodwill as per shareholders' Funds Approach (in ₹ lacs)

$$= 45.6 \times \frac{100}{20} - 200 = 228\text{-}200 = 28, \text{ Positive goodwill}$$

Goodwill as per Long-term Funds Approach (in ₹ lacs)

$$= 76.8 \times \frac{100}{18} - 440 = 426.67 - 440 = (-)\ 13.33, \text{ Negative goodwill}$$

Leverage Effect (impact of leverage in ₹ lacs) = Goodwill as per Shareholders' Fund Approach minus Goodwill as per long-term Funds Approach

$= 28 - (-\ 13.33) = 28 + 13.33 = 41.33$