PAPER – 20: FINANCIAL ANALYSIS & BUSINESS VALUATION

The following table lists the learning objectives and the verbs that appear in the syllabus learning aims and examination questions:

	Learning objectives	Verbs used	Definition
LEVEL C	KNOWLEDGE What you are expected to know	List	Make a list of
		State	Express, fully or clearly, the details/facts
		Define	Give the exact meaning of
	COMPREHENSION What you are expected to understand	Describe	Communicate the key features of
		Distinguish	Highlight the differences between
		Explain	Make clear or intelligible/ state the meaning or purpose of
		Identity	Recognize, establish or select after consideration
		Illustrate	Use an example to describe or explain something
	APPLICATION How you are expected to apply your knowledge	Apply	Put to practical use
		Calculate	Ascertain or reckon mathematically
		Demonstrate	Prove with certainty or exhibit by practical means
		Prepare	Make or get ready for use
		Reconcile	Make or prove consistent/ compatible
		Solve	Find an answer to
		Tabulate	Arrange in a table
	ANALYSIS How you are expected to analyse the detail of what you have learned	Analyse	Examine in detail the structure of
		Categorise	Place into a defined class or division
		Compare and contrast	Show the similarities and/or differences between
		Construct	Build up or compile
		Prioritise	Place in order of priority or sequence for action
		Produce	Create or bring into existence
	SYNTHESIS How you are expected to utilize the information gathered to reach an optimum conclusion by a process of reasoning	Discuss	Examine in detail by argument
		Interpret	Translate into intelligible or familiar terms
		Decide	To solve or conclude
	EVALUATION How you are expected to use your learning to evaluate, make decisions or recommendations	Advise	Counsel, inform or notify
		Evaluate	Appraise or asses the value of
		Recommend	Propose a course of action

Paper – 20: Financial Analysis & Business Valuation

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

This paper contains 4 questions, representing two separate sections as prescribed under syllabus 2012. All questions are compulsory, subject to the specific guidance/ instructions stated against every question. All workings, wherever necessary, must form a part of your answer. Assumptions, if any, should be clearly stated.

Question No. 1. (Answer **all** questions. Each question carries **10 marks**)

1. (a) M & Co. furnished the following data for the years 2013-14 and 2014-15. You are required to calculate: (i) Percentage Change in Cost Price; (ii) Percentage Change in Selling Price and (iii) Account for Changes in Gross Profit in the year 2014.

Year	2013-14	2014-15
Sales (₹)	**2,25,000**	**2,32,875**
Cost of Goods Sold (₹)	**1,65,000**	**1,60,380**
Gross Profit (₹)	**60,000**	**72,495**

During 2014-15 there was a decrease in volume by 10%. **[10]**

Answer:

Let the number of units sold in 2013-14 be 100.

Then, the number of units sold in 2014-15 = 100 - 10% of 100 = 90

Particulars	2013-14	2014-15	Changes
(a) Sales (₹)	2,25,000	2,32,875	(+) 7,875
(b) Cost of Goods Sold (₹)	1,65,000	1,60,380	(-) 4,620
Gross Profit (₹) [a-b]	60,000	72,495	(+) 12,495
(c) Units Sold	100	90	(-)10
(d) Selling Price per Unit (₹) [a-c]	2,250	2,587.50	(+) 337.50
(e) Cost Price per Unit (₹) [b-c]	1,650	1,782	(+)132

(i) Percentage change in cost price in the year 2014-15:

Percentage increase in cost price per unit = 132/1,650×100 = 8%

Percentage decrease in total cost = 4,620/1,65,000 ×100 = 2.80%

(ii) Percentage change in selling price in the year 2014-15:

Percentage increase in selling price per unit = 337.50/2,250×100 = 15%

Percentage increase in total sales = 7,875/2,25,000×100 = 3.50%

(iii) Statement showing account for changes in profit

	Particulars	₹	₹
Changes in profit due to changes in sales:			
1	Decrease in profit due to decrease in quantity [Change in quantity × Base year's unit selling price = (100 – 90) units × ₹ 2,250]		(22,500)
2	Increase in profit due to increase in unit selling price [change in unit selling price × Base year's quantity = (₹ 2,587.50 – ₹ 2,250) × 100 units]		33,750
3	Decrease in profit due to change in price and quantity [Changes in unit selling price × Change in quantity = (₹ 2,587.50 – ₹ 2,250) × (100 – 90) units]		(3,375)
			7,875
Changes in profit due to changes in cost:			
1	Increase in profit due to decrease in quantity [Change in quantity × Base year's unit cost price = (100 – 90) Units × ₹ 1,650]	16,500	
2	Decrease in profit due to increase in unit cost price [Change in unit cost price × Base year's quantity = (₹ 1,782 – ₹ 1,650) × 100 units]	(13,200)	
3	Increase in profit due to change in price and quantity [Change in unit cost price × Change in quantity = (₹ 1,782 – ₹ 1,650) × (100 – 90) units]	1,320	4,620
	Net Increase in Gross Profit		**12,495**

Note: Here, the base year is 2013-14.

Alternatively,

	Particulars	₹	₹
Changes in profit due to changes in sales:			
1	Decrease in profit due to decrease in quantity [Change in quantity × Base year's unit selling price = (100 – 90) units × ₹ 2,250]		(22,500)
2	Increase in profit due to increase in unit selling price at current year's quantity [change in unit selling price × Current year's quantity =(₹ 2,587.50 – ₹ 2,250) × 90 units]		30,375
			7,875
Changes in profit due to changes in cost:			
1	Increase in profit due to decrease in quantity [Change in quantity × Base year's unit cost price = (100 – 90) Units × ₹ 1,650]	16,500	

2	Decrease in profit due to increase in unit cost price at current year's quantity [Change in unit cost price × Base year's quantity = (₹ 1,782 – ₹ 1,650) × 90 units]	(11,880)	
			4,620
	Net Increase in Gross Profit		**12,495**

Note: Here, the base year is 2013-14.

1. (b) During the past year, M & N Ltd., had net income of ₹1,00,000, paid dividends of ₹50,000 to its preference shareholders, and paid ₹30,000 in dividends to its equity shareholders. M & N's Equity Share Account showed the following:

January 1	**Shares issued and outstanding at the beginning of the year**	**10,000**
April 1	**Shares issued**	**4,000**
July 1	**10% dividend on shares**	
September 1	**Shares repurchased for the treasury**	**3,000**

Compute the weighted average number of equity shares outstanding during the year, and compute EPS. [10]

Answer:

Step 1: Adjust the number of pre-dividend shares to post-dividend units (to reflect the 10% share dividend) by multiplying all share numbers prior to the share dividend by 1.1. Shares issued or retired after the share dividend are not affected.

January 1	Initial shares adjusted for the 10% dividend	11,000
April 1	Shares issued adjusted for the 10% dividend	4,400
September 1	Shares of treasury stock repurchased (no adjustment)	- 3,000

Step 2: Compute the weighted average number of post-dividend shares:

Initial shares	11,000 × 12 months outstanding	1,32,000
Issued shares	4,400 × 9 months outstanding	39,600
Retired treasury shares	-3,000 × 4 months retired	-12,000
Total share month		1,59,600
Average shares	1,59,600 ÷ 12	13,300

Step 3: Compute basic EPS:

$$\text{Basic EPS} = \frac{\text{net income - preference dividend}}{\text{Weighted average no. of equity shares}} = ₹\left(\frac{1,00,000 - 50,000}{13,300}\right) = ₹\ 3.76$$

Question No. 2 (Answer **any two** questions. Each question carries **15 marks**)

2. (a) Prepare comparative & common-size income statement and Balance Sheet of A Ltd. & B Ltd. from the following:

Income Statement for the year ended 31.03.2015

	A Ltd. (₹)	B Ltd. (₹)
Net Sales	25,38,000	9,70,000
Cost of goods sold	14,22,000	4,75,000
Gross Profit	11,16,000	4,95,000
Selling Expenses	7,20,000	2,72,000
Administrative Expenses	1,84,000	97,000
Total operating expenses	9,04,000	3,69,000
Operating Profit	2,12,000	1,26,000
Other Income	26,000	10,000
	2,38,000	1,36,000
Other Expenses	40,000	29,000
Profit Before Tax	1,98,000	1,07,000
Income Tax	68,000	28,000
Profit after tax (PAT)	1,30,000	79,000

	A Ltd. (₹)	B Ltd. (₹)
Current Assets:		
Cash	54,000	72,000
Debtors	4,40,000	2,26,000
Trading Stock	2,00,000	1,74,000
Prepaid Expenses	22,000	21,000
Other current assets	20,000	21,000
Total Current Assets	7,36,000	5,14,000
Fixed Assets (Less) accumulated dep.	12,70,000	5,13,000
	20,06,000	10,27,000
Current Liabilities:		
Creditors	84,000	1,34,000
Other current liability	1,56,000	62,000
Total Current Liabilities	2,40,000	1,96,000
Debentures	4,50,000	3,18,000
	6,90,000	5,14,000
Capital & Reserves	13,16,000	5,13,000
	20,06,000	10,27,000

[15]

Answer:

Comparative & Common-size Income Statement for the year ended 31.03.2015

Year	A Ltd. (₹)	% of net sales	B Ltd. (₹)	% of net sales
Net Sales	25,38,000	100	9,70,000	100
Cost of goods sold	14,22,000	56.0	4,75,000	49.0
Gross Profit	11,16,000	44.0	4,95,000	51.0
Selling Expenses	7,20,000	28.4	2,72,000	28.0

Administrative Expenses	1,84,000	7.2	97,000	10.0
Total operating expenses	9,04,000	35.6	3,69,000	38.0
Operating Profit	2,12,000	8.4	1,26,000	13.0
Other Income	26,000	1.0	10,000	1.0
	2,38,000	9.4	1,36,000	14.0
Other Expenses	40,000	1.6	29,000	3.0
Profit Before Tax	1,98,000	7.8	1,07,000	11.0
Income Tax	68,000	2.7	28,000	2.9
Profit after tax (PAT)	1,30,000	5.1	79,000	8.1

Comparative & Common-size Balance Sheet as on 31.03.2015

Year	A Ltd. (₹)	% of net sales	B Ltd. (₹)	% of net sales
Current Assets:				
Cash	54,000	2.7	72,000	7.0
Debtors	4,40,000	21.9	2,26,000	22.0
Trading Stock	2,00,000	10.0	1,74,000	17.0
Prepaid Expenses	22,000	1.1	21,000	2.0
Other current assets	20,000	1.0	21,000	2.0
Total Current Assets	7,36,000	36.7	5,14,000	50.0
Fixed Assets (Less) accumulated dep.	12,70,000	63.3	5,13,000	50.0
	20,06,000	100	10,27,000	100
Current Liabilities:				
Creditors	84,000	4.2	1,34,000	13.0
Other current liability	1,56,000	7.8	62,000	6.0
Total Current Liabilities	2,40,000	12.0	1,96,000	19.1
Debentures	4,50,000	22.4	3,18,000	31.0
	6,90,000	34.4	5,14,000	50.0
Capital & Reserves	13,16,000	65.6	5,13,000	50.0
	20,06,000	100	10,27,000	100

The following conclusions can be drawn from a careful analysis of the above income statement and Balance Sheet.

(I) A Ltd. has a better and efficient credit and collection system because its debtors and trading stock amount to 31.9% of total assets as compared to 39% in case of B Ltd.

(II) The cash position of B Ltd. (7% of total asset) compares favourably with that of A Ltd. (2.7% of total asset).

(III) The turnover of A Ltd. is larger (₹25,38,000) than that of B Ltd (₹9,70,000), but the cost of goods sold absorbs a larger i.e., 56% of net sales as compared to 49% in case of B Ltd. This reflects a better pricing mark-up by B Ltd.

(IV) The selling and administrative expenses are 35.6% of net sales in case of A Ltd while 38% in case of B Ltd. Administrative cost in B Ltd. is higher as compared to A Ltd., indicating a highly paid or overstaffed administrative function followed by B Ltd.

(V) A Ltd. appears to be more traditionally financed with shareholders equity of 65.6% of total liabilities as against 50% in case of B Ltd. This indicates that contractual obligation of B Ltd. is higher than that of A Ltd.

(VI) The fixed assets of A Ltd. is larger (₹12,70,000) than that of B Ltd. (₹5,13,000) but, if it is compared with turnover, we find that A Ltd. has a higher fixed assets turnover (2) than that of B Ltd. (1.89). This reflects a better asset utilisation by B Ltd.

2. (b) The following are the accounts of Umar Ltd.

Statement of financial position (summarized)
as on 31st March, 2015 and 31st March, 2014.

Liabilities	2014 - 15		2013 - 14	
	₹ '000	₹ '000	₹ '000	₹ '000
Non-current assets				
Plant & Machinery		260		278
Current Assets				
Inventory	84		74	
Trade receivables	58		46	
Bank	6	148	50	170
Total		408		448
Capital and Reserves				
Ordinary Share Capital @ ₹ 50 each		70		70
8% Preference Shares		50		50
Securities Premium		34		34
Revaluation Reserve		20		--
Profit and Loss Account		62		84
		236		238
Non-current Liabilities				
5% Secured Loan Stock		80		80
Current Liabilities				
Trade Payables	72		110	
Provision for Taxation	20	92	20	130
		408		448

Summarized Income Statement for the year ended 31st March, 2015 and 31st March, 2014

Liabilities	2014 - 15		2013 - 14	
	₹ '000	₹ '000	₹ '000	₹ '000
Sales		418		392
Opening Inventory	74		58	
Purchases	324		318	
	398		376	
Closing Inventory	(84)	(314)	(74)	(302)
Gross Profit		104		90
Interest	4		4	
Depreciation	18		18	
Sundry Expenses	28	(50)	22	(44)
Profit before Tax		54		46
Provision for Taxation		(20)		(20)
Profit after Tax		34		26
Equity Dividend	12		10	
Preference Dividend	4	(16)	4	(14)
Retained Profit		18		12

Calculate and comment on the following ratios for Umar Ltd.

(1) ROCE
(2) Gross Profit margin
(3) Asset turnover
(4) Current ratio
(5) Quick ratio
(6) Inventory Turnover ratio
(7) Inventory holding period
(8) Debtors collection period
(9) Creditors payment period
(10) Equity gearing
(11) Total gearing
(12) Interest coverage
(13) Dividend coverage
(14) EPS
(15) PE if current market value of ordinary share is ₹ 2.40. **[15]**

Answer:

(1) Return on Capital Employed (ROCE)

$$\frac{\text{Profit before Interest \& Taxes (PBIT)}}{\text{Capital Employed (CE)}}$$

₹ (54+4)/₹ (236 + 80) × 100% = 18.4% 2014-15

₹ (46 + 4)/₹ (238 + 80) × 100% = 15.7% 2013-14

The return on capital employed has increased over the year from 15.7% to 18.4%. The profit has increased which may have resulted in the increase.

(2) Gross Profit Margin

Gross Profit / Sales	= ₹ 104 / ₹ 418 × 100% = 24.9%	2014-15
	₹ 90 / ₹ 392 × 100% = 23.0%	2013-14

The gross profit margin has increased from 23.0% to 24.9%, which could mean higher selling prices or lower costs. This also explains the rise in ROCE.

(3) Asset turnover

$\frac{\text{Turnover}}{\text{Total Assets}}$ =

	₹ 148 / ₹ 408	=	1.02 times	2014 - 15
	₹ 392/₹ 448	=	0.88 times	2013-14

The asset turnover has increased indicating that the company is using its assets more effectively.

(4) Current ratio

₹ 148 / ₹ 92	=	1.60	2014-15
₹ 170 / ₹ 130	=	1.30	2013-14

The current ratio has increased, meaning that the organization is more liquid. This is due to the fact that inventory and trade receivables have increased (which are non productive assets), and trade payables have been reduced. Although this may be better for the current ratio, it may not necessarily mean that the company is operating more efficiently.

(5) Quick Ratio

₹ (148 – 84)/₹ 92	=	0.70	2014-15
₹ (170 – 74) / ₹ 130	=	0.74	2013-14

The quick ratio is slightly better in 2013-14, which proves that higher inventory levels are being maintained for 2014-15.

(6) Inventory turnover ratio

₹ 314 / ₹ (74 + 84) × 0.5 =	4.0 times	2014-15
₹ 302 / ₹ (58 + 74) 0.5 =	4.6 times	2013-14

This ratio shows how quickly the inventory is being sold. In 2013-14 it was being sold at a much higher rate that is 2014-15.

The nature of the business needs to be known to see whether these turnover times are line with the normal industry.

(7) Inventory days	= ₹ (74 + 84) × 0.5 / ₹ 314 × 365 days	= 92 days	2014-15
	₹ (58 + 74) × 0.5 / ₹ 302 × 365 days	= 80 days	2013-14

Alternatively tins can be arrived at: 2014-15: ¼×365 days=92 days. 2013-14: 1/4.6×365=80 days. This again highlights the fact that the stock is taking longer to shift into sales. It is spending more time within the warehouse.

(8) Trade receivable days	= ₹ 58 / ₹418 x 365 days	= 50.6 days	2014-15
	₹ 46 / ₹392 x 365 days	= 42.8 days	2013-14

There is a worsening debt collection period. It may be checked — Is there a delay in issuing invoices, lack of screening new customers? Are the year-end figures representatives of the year? Perhaps there are seasonal fluctuations that need to be considered.

(9) Trade payable days	= ₹ 72/₹324 x 365	= 81.1 days	2014-15
	= ₹110/₹318 x 365	= 126.3 days	2013-14

The suppliers are being paid quicker, which is good for relationship with the suppliers, but bad for cash flow purposes. Trade credit is a free source of finance, and the company must try to maximize this.

(10) Equity Gearing = Preference share capital + loans / Ordinary Share Capital+ reserves

= ₹(50 + 80)/₹(236-50)	= 69.9%	2014-15
= ₹(50 + 80)/₹(238-50)	= 69.1%	2013-14

Low geared = less than 100%, highly geared = more than 100% and neutrally geared if ratio is 100%. The gearing remains at almost similar levels. The company is not highly geared.

(11) Total Gearing = Preference share capital + loan / total long term capital

= ₹130/₹(236 + 80)	= 41.1%	2014-15
= ₹130/₹(238+80)	= 40.9%	2013-14

With total gearing, higher than 50% is high gearing, lower than 50% is lower gearing and 50% is neutral.

(12) Interest Cover = Profit before interest and tax / interest payable

= ₹ (54 + 4)/₹ 4	=14.5 times	2014-15
= ₹ (46 + 4)/₹ 4	=12.5 times	2013-14

As the company is low geared, the interest cover is high. This means there is less financial risk in investing this company. Company is in a strong position to pay interest.

(13) Dividend cover = Profit after tax and after reference dividend/dividend paid

= ₹ (34 - 4)/₹ 12	= 2.5 times	2014-15
= ₹ (26 - 4)/₹ 10	= 2.2 times	2013-14

The dividend cover is after allowing for preference dividends. There is a reasonably comfortable cover.

(14) EPS = Profit after tax and after preference dividend / no of ordinary shares

= ₹ (34 - 4)/1400	= ₹ 21.4 per share	2014-15
= ₹ (26 - 4)/1400	= ₹ 15.7 per share	2013-14

The EPS is increased from ₹ 15.70 to ₹ 21.40 in the year 2014-15. It indicates the growth in earnings of equity shares.

(15) PE ratio = Market price / EPS

= 240 / 21.4	=11.21 times	2014-15

The PE ratio is quite high, indicating that the market has confidence in the company's future growth. However this needs to be compared with industry or similar companies.

With all the ratios it would be useful to compare against the industry averages.

2. (c) Following is the extract of a Balance Sheet of a company as on 31st March, 2015:

Liabilities	₹	Assets	₹
Equity Share Capital (₹ 100)	**4,00,000**	**Fixed Assets**	**10,00,000**
Reserves & Surplus	**2,25,000**	**Trade Investment**	**2,00,000**
12% Debentures	**3,00,000**	**Stock**	**1,25,000**
10% Bank Loan	**2,00,000**	**Debtors**	**75,000**
Current Liabilities	**3,00,000**	**Preliminary Expenses**	**25,000**
	14,25,000		**14,25,000**

Additional Information:

(I) Net sales for 2014-15 were ₹ 20,00,000.

(II) Price-Earnings Ratio is ₹ 10.

(III) Dividend Pay-out Ratio is 50%.

(IV) Dividend per Share in 2014-15 is ₹ 20.

(V) Corporate Tax Rate is 50%.

Using Altman's Model, calculate the Z-score of the company and interpret the result. [15]

Answer:

As per Altman's Model (1968) of Corporate Distress Prediction

$Z = 1.2 X_1 + 1.4 X_2 + 3.3 X_3 + 0.6X_4 + 1.0 X_5$

Here, the five variables are as follows:

X_1 = Working Capital to Total Assets = $\frac{(1,00,000)}{14,00,000}$ = (0.07143)

X_2 = Retained Earnings to Total Assets = $\frac{2,00,000}{14,00,000}$ = 0.1429

X_3 = EBIT to Total Assets = $\frac{3,76,000}{14,00,000}$ = 0.2686

X_4 = Market Value of Equity to Book Value of Total Debt = $\frac{16,00,000}{8,00,000}$ = 2.00

X_5 = Sales to Total Assets = $\frac{20,00,000}{14,00,000}$ = 1,4286 times

Therefore, Z-score = {1.2x (-) 0.07143} + (1.4x0.1429) + (3.3x0.2686) + (0.6x2) + (1 x 1.4286)
= - 0.0857 + 0.2001+ 0.8864+ 1.2+1.4286 = 3.6294

Notes:

1. **Calculation of Working Capital**

   Working Capital = Current Assets - Current Liabilities

   Here, Working Capital = (Stock + Debtors) - Current Liabilities
   = ₹ [(1,25,000 + 75,000) - 3,00,000]
   = (₹ 1,00,000)

2. **Calculation of Total Assets**

   Total Assets = Fixed Assets + Investments + Current Assets

   Here, Total Assets = ₹ [10,00,000 + 2,00,000 + (1,25,000 + 75,000)] = ₹ 14,00,000

3. **Calculation of Retained Earnings**

   Retained Earnings = Reserves & Surplus - Preliminary Expenses = ₹ (2,25,000 - 25,000)
   = ₹ 2,00,000

4. **Calculation of Earnings before Interest & Tax (EBIT)**

   Dividend Payout Ratio = $\frac{\text{Dividend per share (DPS)}}{\text{Earnings per share (EPS)}}$

   Here dividend payout ratio = 50% and DPS in 2014-15 = ₹20.

   Hence, EPS = $\frac{\text{DPS}}{\text{Dividend payout ratio}} = \frac{20}{50\%}$ = ₹ 40.

   Here, number of equity shares = ₹ $\left(\frac{4,00,000}{100}\right)$ = 4,000

Particulars	₹
Earnings available to equity shareholders = 4,000 x ₹40	1,60,000
Add: Corporate tax added back $\left(\frac{50}{50}\times 1,60,000\right)$	1,60,000
Earnings before Tax (EBT)	3,20,000

Add: Interest on loan added back: On Debentures (12% on 3,00,000) = ₹ 36,000 On Bank Loan (10% on 2,00,000) = ₹ 20,000	56,000
Earnings before Interest & Tax (EBIT)	3,76,000

5. Calculation of Market Value of Equity Shares

$$\text{Price Earnings Ratio} = \frac{\text{Market Value per equity shares (MPS)}}{\text{Earnings per share (EPS)}}$$

Here, Price Earnings Ratio = 10 and EPS in 2014-15 = ₹40

Hence, Market Value per Equity Share (MPS) = Price Earnings Ratio x EPS

= 10 x ₹40 = ₹400

Market Value of Equity Shares = 4,000 shares x ₹400 = ₹16,00,000

6. Calculation of Book Value of Total Debts

Book Value of Total Debts = Long-term Debts + Current Liabilities

Here, Book Value of Total Debts = 12% Debentures+10% Bank Loan + Current Liabilities

= ₹ (3,00,000 + 2,00,000 + 3,00,000) = ₹ 8,00,000

As the calculated value of Z-score is much more greater than 2.99, it can be strongly predicted that the company is a non-bankrupt company (i.e., non-failed company).

Question No. 3. (Answer **all** questions. Each question carries **10 marks**)

3. (a) 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 01.04.2012. The following information is extracted from their annual reports for the last 3 years -

(₹ in Lakhs)

Particulars for the year ended 31st March	**2013**	**2014**	**2015**
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	**20**	**60**	**120**
Preliminary Expenses Carried Forward	**30**	**20**	**10**

The Company has implemented a major project in 2014 which has started yielding results in 2014-15. 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%. Tax rate is 40%.

Compute the value of the Company's Equity Shares based on the above information. [10]

Answer:

Particulars	₹ Lakhs
1. Value on Net Assets Basis	
Net Fixed Assets [₹ 750 Lakhs Less: Depreciation ₹ 150 Lakhs]	600
Net Current Assets	750
Total Capital Employed	1,350
Less: Long Term Borrowings	(400)
Net Assets available for Equity Shareholders	950
Number of Equity Shares = $\frac{₹500\,Lakhs}{₹10}$	50
Value Per Equity Share = $\frac{₹950\,Lakhs}{50\,Lakh\,Equity\,Shares}$	₹ 19.00
2. Value on Yield Basis	
Profit before Tax [See note below)	120
Add: Preliminary Expenses Written off (since this is the last year of write off)	10
Future Maintainable Profit after Tax	130
Less: Tax Expense at 40%	(52)
Future Maintainable Profit after tax	78
Industry Norm (Return in Percentage)	15%
Capitalized Value of Future Profits = $\frac{₹78\,Lakhs}{15\%}$	520
Number of Equity Shares	50
Value per Equity Share = $\frac{₹520\,Lakhs}{50\,Lakh\,Equity\,Shares}$	₹ 10.40
3. Fair Value per Share = $\frac{₹519.00 + ₹10.40}{2}$	**₹ 14.70**

Note:

- We are informed that the Company has incorporated a major project in 2014 which has started yielding results in 2014-15.
- So, the trading results of the future periods and the Balance Sheet position will be distinctly different (i.e., increase) from the results for the periods 2013-15 and before. Future Revenues will be more in tune with the results for the period ending 31.03.2015 and state of affairs as on that date.
- Hence, the figures for the years ending 31.03.2014 and 2014 have not been considered at all.

3. (b) Jayadev Ltd. had earned at PAT of ₹ 48 Lakhs for the year just ended. It wants you to ascertain the value of its business, based on the following information.

(I) Tax Rate for the year just ended was 36%. Future Tax Rate is estimated at 34%.

(II) The Company's Equity Shares are quoted at ₹ 120 at the Balance Sheet date. The Company had an Equity Capital of ₹ 100 Lakhs, divided into Shares of ₹ 50 each.

(III) Profits for the year have been calculated after considering the following in the P&L Account -

- **Subsidy ₹ 2 Lakhs received from Government towards fulfillment of certain social obligations. The Government has withdrawn this subsidy and hence, this amount will not be received in future.**
- **Interest ₹ 8 lakhs on Term Loan. The final installment of this Term Loan was fully settled in the last year.**
- **Managerial Remuneration ₹ 15 Lakhs. The Shareholders have approved an increase of ₹ 6 Lakhs in the overall Managerial Remuneration, from the next year onwards.**
- **Loss on sale of Fixed Assets and Investments amounting to ₹ 8 Lakhs. (Ignore Tax Effect thereon) [10]**

Answer:

Computation of Value of Business

Particulars	**₹ in lakhs**
Profit before Tax for the year just ended $\frac{48,00,000}{100\% - 36\%}$	75,00,000
Add/(Less): Adjustments in respect of Non-Recurring items	
Subsidy Income not receivable in future	(2,00,000)
Interest on Term Loan not payable in future, hence saved	8,00,000
Additional Managerial Remuneration	(6,00,000)
Loss on Sale of Fixed Assets and Investments (non-recurring)	8,00,000
Future Maintainable Profits before tax	83,00,000
Less: Tax Expense at 34%	28,22,000
Future Maintainable Profits after Tax Equity Earnings	54,78,000
Value of Business = $\frac{\text{Future Maintainable Profits}}{\text{Capitalisation Rate}} = \frac{₹54.78\text{ Lakhs}}{20\%}$	₹ 273.90 Lakhs

Note: Computation of Capitalisation Rate –

	Particulars	**₹**
(a)	Profit after Tax for the year just ended	₹ 48 Lakhs
(b)	Number of Equity Shares $\frac{₹100\text{ Lakhs}}{₹50\text{ per Share}}$	2 Lakhs
(c)	Earnings Per Share (EPS) $\frac{\text{PAT}}{\text{NUmber of Equity Shares}}$	₹ 24
(d)	Market Price per share on Balance Sheet Date	₹ 120
(e)	Price Earnings Ratio = $\frac{\text{MPS}}{\text{EPS}}$	5
(f)	Capitalisation Rate = $\frac{1}{\text{PE Ratio}}$	20%

Question No. 4. (Answer **any two** questions. Each question carries **15 marks**)

4. (a) (i) A company belongs to a risk class for which the approximate capitalisation rate is 10 per cent. It currently has outstanding 25,000 shares selling at ₹ 100 each. The firm is contemplating the declaration of a dividend of ₹ 5 per share at the end of the current financial year. It expects to have a net income of ₹ 2,50,000 and has a proposal for making new investments of ₹ 5,00,000. Show that under the MM assumptions, the payment of divided does not affect the value of the firm. [5+5]

Answer:

(a) Value of the Firm, when Dividends are paid:

(i) Price per share at the end of year 1, $P_0 = \frac{1}{(1+K_e)}(D_1+P_1)$

₹ $100 = \frac{1}{1.10}$ (₹ $5 + P_1$)

$110 = ₹ 5 P_1$

$105 = P_1$

(ii) Amount required to be raised from the issue of new shares,

$\Delta nP_1 = (E - nD_1)$

= ₹ 5,00,000 – (₹ 2,50,000 – ₹ 1,25,000) = ₹ 3,75,000

(iii) Number of additional shares to be issued, $\Delta n = \frac{₹3,75,000}{₹105} = \frac{75,000}{21}$ Shares

(iv) Value of the firm $nP_0 = \frac{(n-\Delta n)P_1 - I + E}{(1+K_e)} = \left[\frac{25,000}{1} + \frac{75,000}{21}\right](₹105) - ₹5,00,000 + ₹2,50,000$

$= \frac{₹27,50,000}{1.10} = ₹ 25,00,000$

(b) Value of the Firm, When Dividends are not Paid:

(i) Price per share at the end of the year 1, ₹ $100 = \frac{P_1}{110}$ or $110 = P_1$

(ii) Amount required to be raised from the issue of new shares.

ΔnP_1 = (₹ 5,00,000 – ₹ 2,50,000) = ₹ 2,50,000

(iii) Number of additional shares to be issued

$= \frac{₹2,50,000}{₹110} = \frac{25,000}{11}$ Shares

(iv) Value of the Firm

$= \left[\frac{25,000}{1} + \frac{25,000}{21}\right]$ (₹ 110) – ₹ 5,00,000 + ₹ 2,50,000

$= \frac{₹27,50,000}{1.10}$ - ₹ 25,00,000.

Thus, whether dividends are paid or not, value of the firm remains the same.
It is clearly demonstrates that the shareholders are indifferent between the retention of profits and the payment of dividend.

4. (a) (ii) List the common sequential steps in business valuation. [5]

Answer:

Step 1 : Determine the purpose of valuation.

Step 2 : Define the standard of value.

Step 3 : Select premise of value.

Step 4 : Carry out historical analysis.

Step 5 : Carry out environment scan.

Step 6 : Select appropriate valuation approaches.

Step 7 : Select appropriate methods.

Step 8 : Calculate value.

Step 9 : Carry out reconciliation and reasonableness check.

Step 10 : Value conclusion.

4. (b) (i) Calculate the value of the intangible assets of Khan Ltd. considering the excess returns earned by it, from the following information for the year ended 31.03.2015.

(1) Average PBT ₹ 2,520 Lakhs

(2) Average year end tangible assets ₹ 14,000 Lakhs

(3) Cost of equity of the company is 15%

(4) Return on Assets (ROA) industry average is 12%

(5) Tax rate is 30% [4]

Answer:

Average PBT	₹ 2520 lakhs
Average year end tangible assets	₹ 14000 lakhs
ROA of the company	18% i.e. (2520 ÷ 14,000) x 100
Industry ROA	12% (given)
Excess return =	PBT - (12% x 14,000)
= 2520-1680	= 840 lakhs

Premium attributable to intangible assets = (1-t) × Excess return

= (0.7) × 840

= ₹ 588 lakhs

Value of intangibles = Premium attributable to Intangible Assets ÷ Company's cost of capital

= 588 ÷ 0.15 = ₹ 3920 lakhs.

4. (b) (ii) Describe the situations when FCFE models and dividend discount valuation models provide similar as well as dissimilar results. [7]

Answer:

FCFE model is alternative to dividend discounting model. But at times both provide similar results:

When result obtained from FCFE and Dividend discount model may be same:

(i) Where dividends are equal to FCFE.

(ii) Where FCFE is greater than dividends but excess cash (FCFE- dividends) is invested in projects with NPV = 0 (Investments are fairly priced)

When results from FCFE and Dividend discounting models are different:

(i) When FCFE is greater than dividends and excess cash earns below market interest rates or is invested in negative NPV – value projects, the value from FCFE will be greater than the value from discount model.

(ii) When dividends are greater than FCFE, the firm will have to issue either new stock or new debt to pay their dividends- with attendant costs.

(iii) Paying too much of dividend can lead to capital rationing constraints when good projects are rejected, resulting in loss of wealth.

Conclusion:

The dividend model uses a strict definition of cash flows to equity, i.e. expected dividends on stock, while FCFE model uses an expensive definition of cash flows to equity as the residual cash flows after meeting all financial obligations and investment needs.

When the firms have dividends that are different from FCFE, the values from two models will be different. In valuing firms for takeover or where there is reasonable chance of changing corporate control, the value from the FCFE provides the better value.

4. (b) (iii) Amit Group of company provides you the following information:
Profits (after tax @ 40%) and Equity Dividend:

Year	Profits	Equity Dividend
2012-13	1,32,000	12%
2013-14	1,92,000	18%
2014-15	1,50,000	15%

Share Capital:
30,000 Equity Shares of ₹ 10 each fully paid
40,000 Equity Shares of ₹ 10 each, ₹ 5 paid
1,000 9% Preference Shares of ₹ 100 each fully paid.
Normal Rate of Expectation is 10%.

Calculate the Value of an Equity Share assuming that only a few shares are to be transferred. [4]

Answer:

Statement showing the Valuation of Equity Shares of Dividend basis
[When only a few shares are to be transferred]

Average Rate of Dividend = (12% + 18% + 15%)/3 = 15%
Normal Rate of Expectation = 10%

$$\text{Value of an Equity Share} = \frac{\text{Average Rate of Dividend}}{\text{Normal Rate of Expectation}} \times \text{Paid-up Value of an Equity Share}$$

$$\text{Value of ₹ 10 paid-up Equity Share} = \frac{0.15}{0.10} \times 10 = ₹\ 15$$

$$\text{Value of ₹ 5 paid-up Equity Share} = \frac{0.15}{0.10} \times 5 = ₹\ 7.5$$

4. (c) In recent board meeting of Sun Ltd., it was decided to increase the company's presence in the southern part of India and for that, it is further decided to acquire Moon Ltd. and merged it with itself. In this respect, you have been provided the following information:

Balance Sheet as on March 31, 2015 **(₹ in Crores)**

Equities and Liability	Sun Ltd	Moon Ltd
Equity Share Capital (₹ 10 par)	6,000.00	2,500.00
Reserves and Surplus	5,750.00	3,650.00
Shareholders' Funds	11,750.00	6,150.00
Non-Current Liabilities:		
Long Term Debt	3,775.00	2,435.00
Deferred Tax liabilities (Net)	675.00	250.00
Current Liabilities	1,775.00	985.00
Total Liabilities	17,975.00	9,820.00
Assets		
Non-Current Assets:		
Net Fixed Assets	10,275.00	6,700.00
Investments	2,250.00	375.00
Current Assets	5,450.00	2,745.00
Total Assets	17,975.00	9,820.00

Profit and Loss Account for the year ending on March 31, 2015 **(₹ in Crores)**

Particulars	Sun Ltd	Moon Ltd
Income:		
Net Revenue	42,150.00	22,305.00
Other Income	925.00	955.00
Total Income	43,075.00	23,260.00
Less: Expenses		
Total Operating Expenses	25,613.14	14,780.70
Operating Profit	17,461.86	8,479.30
Less: Interest	319.00	265.00
Profit Before Tax	17,142.86	8,214.30
Less: Tax	5,142.86	2,464.29
Profit After Tax	12,000.00	5,750.01
Price/Earnings Ratio	21.65	15.75

Since Sun Ltd. has a policy of maximizing EPS, it is decided to consider the exchange ratio (or swap ratio) on the basis of Book Value, EPS and Market Price of both the companies and select that which maximizes EPS.

On the basis of the above information, you are required to answer the following:

(I) Determine the exchange ratio or swap ratio for the said merger that will maximize EPS post merger. It is estimated that there are likely to be some synergy gains which will increase the earnings of new merged entity by 5%.

(II) Assuming that the Price/Earnings Ratio of Sun Ltd. after merger will be 24.50, determine the market price of the share of Sun Ltd. [10+5]

Answer:

Calculation as per Book value: **(₹ in crores)**

Particulars	**Sun Ltd.**	**Moon Ltd.**
Equity Share Capital (₹ 10 par)	₹ 6,000.00	₹ 2,500.00
Reserves and Surplus	₹ 5,750.00	₹ 3,650.00
	₹ 11,750.00	₹ 6,150.00
Adjusted for		
Deferred Tax Liabilities (Net) (+)	₹ 675.00	₹ 250.00
Net Worth	₹ 12,425.00	₹ 6,400.00
No. of Shares	600.00	250.00
Book Value per Shares	₹ 20.71	₹ 25.60
Swap Ratio	**1.236**	**1.000**

Calculations as per EPS: **(₹ in crores)**

Particulars	**Sun Ltd.**	**Moon Ltd.**
Profit After Tax	₹ 12,000.00	₹ 5,750.01
No. of Shares	600.00	250.00
EPS	₹ 20.00	₹ 23.00
Swap Ratio	**1.150**	**1.000**

Calculation as per Market Price: **(₹ in crores)**

Particulars	**Sun Ltd.**	**Moon Ltd.**
P/E Ratio	21.65	15.75
EPS	₹ 20.00	₹ 23.00
Therefore, the Market Price is	₹ 433.00	₹ 362.25
Swap Ratio	**0.837**	**1.000**

After Merger: **(₹ in crores)**

PAT of Sun Ltd	₹	12,000.00
PAT of Moon Ltd	₹	5,750.01
	₹	17,750.01
Add: Increase in Profit due to 5% Synergy Gains	₹	887.50
Profit After Tax (of the Merged Entity)	₹	**18,637.51**

Swap Ratio as per Book Value 1.236: 1.000

Swap Ratio as per EPS 1.150: 1.000

Swap Ratio as per Market Price 0.837: 1.000

EPS of Sun Ltd. will be maximum if the number of shares issued to the shareholders of Moon Ltd. is minimum. And, using Market Price to calculate swap ratio will result in the minimum number of shares to be issued as this is the minimum swap ratio.

No. of shares to be issued to the shareholder of Moon Ltd. using swap ratio of 0.837:1	209.25
No. of existing shares of Sun Ltd.	600.00
Therefore, the total No. of shares of Sun Ltd. after merger will be	**809.25**
New EPS will be	**₹ 23.03**
New P/E Ratio given	24.50
New Share Price of Sun Ltd. after merger	**₹ 564.24**