

RATIO ANALYSIS

(LECTURE – 5)

SEMESTER -6

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BASIC QUESTIONS

Problem - 1

The following Trading and Profit and Loss Account of ABC Ltd. for the year 31-3-2019 is given below:

Particular	Rs.	Particular	Rs.
To Opening Stock	76,250	By Sales	5,00,000
“ Purchases	3,15,250	“ Closing stock	98,500
“ Carriage and Freight	2,000		
“ Wages	5,000		
“ Gross Profit b/d	<u>2,00,000</u>		
	<u>5,98,500</u>		<u>5,98,500</u>
To Administration expenses	1,01,000	By Gross Profit b/d	2,00,000
“ Selling and Dist. expenses	12,000	“ Non-operating incomes:	
“ Non-operating expenses	2,000	“ Interest on Securities	1,500
“ Financial Expenses	7,000	“ Dividend on shares	3,750
Net Profit c/d	<u>84,000</u>	“ Profit on sale of shares	<u>750</u>
	<u>2,06,000</u>		<u>2,06,000</u>

Calculate:

1. Gross Profit Ratio
2. Expenses Ratio
3. Operating Ratio
4. Net Profit Ratio
5. Operating (Net) Profit Ratio
6. Stock Turnover Ratio.

Solution –

$$\begin{aligned}
 1. \quad \text{Gross Profit Ratio} &= \frac{\text{Gross profit}}{\text{Sales}} \times 100 \\
 &= \frac{2,00,000}{5,00,000} \times 100
 \end{aligned}$$

$$= 40\%$$

$$\begin{aligned}
 2. \quad \text{Expenses Ratio} &= \frac{\text{Op. Expenses}}{\text{Net Sales}} \times 100 \\
 &= \frac{1,13,000}{5,00,000} \times 100
 \end{aligned}$$

$$= 22.60\%$$

$$\begin{aligned}
 3. \quad \text{Operating Ratio} &= \frac{\text{Cost of goods sold} + \text{Op. Expenses}}{\text{Net Sales}} \times 100 \\
 &= \frac{3,00,000 + 1,13,000}{5,00,000} \times 100 \\
 &= 82.60\%
 \end{aligned}$$

$$\begin{aligned}
 \text{Cost of Goods sold} &= \text{Op. stock} + \text{purchases} + \text{carriage and Freight} + \text{wages} - \text{Closing Stock} \\
 &= 76250 + 315250 + 2000 + 5000 - 98500 \\
 &= \text{Rs.} 3,00,000
 \end{aligned}$$

$$\begin{aligned}
 4. \quad \text{Net Profit Ratio} &= \frac{\text{Net Profit}}{\text{Net Sales}} \times 100 \\
 &= \frac{84,000}{5,00,000} \times 100 \\
 &= 16.8\%
 \end{aligned}$$

$$\begin{aligned}
 5. \quad \text{Operating Profit Ratio} &= \frac{\text{Op. Profit}}{\text{Net Sales}} \times 100 \\
 \text{Operating Profit} &= \text{Sales} - (\text{Op. Exp.} + \text{Admin Exp.}) \\
 &= \frac{87,000}{5,00,000} \times 100 \\
 &= 17.40\%
 \end{aligned}$$

$$\begin{aligned}
 \text{6. Stock Turnover Ratio} &= \frac{\text{Cost of goods sold}}{\text{Avg. Stock}} \\
 &= \frac{3,00,000}{87,375} \\
 &= 3.43 \text{ times}
 \end{aligned}$$

Problem - 2

The Balance Sheet as on 2002 and 2003 are as under:

Liabilities	2002	2003	Assets	2002	2003
Equity share capital	1,00,000	1,25,000	Land and Buildings	50,000	75,000
General Reserve Profit & Loss A/c Creditors	12,500	15,000	Plant Machinery	57,500	55,000
Bills payable	10,000	7,500	Stock	10,000	12,500
O/s. Expenses	5,000	6,250	Debtors	7,500	10,000
Provident Fund	3,750	7,500	Cash & Bank	5,000	7,500
	1,250	3,750	Bills Receivable	2,500	5,000
	7,500	5,000	Preliminary Exp.	7,500	5,000
	1,40,000	1,70,000		1,40,000	1,70,000

Profit & Loss A/c.

Particulars	2002	2003	Particulars	2002	2003
To Op. Stock	5,000	10,000	By Sales	62,500	1,12,500
To Purchase	37,500	47,500	By Closing Stock	10,000	12,500
To Office Exp.	7,500	10,000	By Profit on Sale of Furniture	2,500	----
To Selling exp.	5,000	12,500			
To Fin. Exp.	2,500	15,000			
To Net Profit	17,500	30,000			
	75,000	1,25,000		75,000	1,25,000

Find out (1) Current Ratio (2) Stock Turnover Ratio (3) Gross Profit Ratio (4) Liquid Ratio (5) Debtor Ratio (working days 300) (6) Return on Equity Capital employed (7) Ownership Ratio.

Solution

1. Current Ratio	= $\frac{\text{Current Assets}}{\text{Current liabilities}}$	
	Current Assets = Stock + debtors + Bills receivable + Cash & Bank Balance	
	Current Liabilities = Creditors + Bills payable + O/s Exp. + PF	
2002:	$= \frac{10,000 + 7,500 + 5,000 + 2,500}{5,000 + 3,750 + 1,250 + 7,500}$	
	$= \frac{25,000}{17,500}$	
	$= 1.43 : 1$	
2003-04:	$= \frac{12,500 + 10,000 + 7,500 + 5,000}{6,250 + 7,500 + 3,750 + 5,000}$	
	$= \frac{35,000}{22,500}$	
	$= 1.56 : 1$	

2. Stock Turnover Ratio =	$\frac{\text{Cost of goods sold}}{\text{Avg. Stock}}$
	$\text{Avg. stock} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$
	<p>2002-03:</p> $\frac{5000 + 10000}{2}$ $= 7,500$ <p>2003-04:</p> $\frac{10000 + 12500}{2}$ $= 11,250$
	<p>Gross Profit = Sales + Closing Stock - (Opening Stock + Purchase)</p> <p>COGS = Sales - GP</p>
	<p>2002: = 62,500 + 10,000 - (5,000 + 37,500)</p> $= 30,000$ <p>COGS = 62,500 - 30,000</p> $= 32,500$
	<p>2003: = 1,12,500 + 12,500 - (10,000 + 47,500)</p> $= 67,500$ <p>COGS = 1,12,500 - 67,500</p> $= 45,000$
	<p>2002-03:</p> $= \frac{32,500}{7,500}$
	<p>= 4.33 times</p>
	<p>2003-04:</p> $= \frac{45,000}{11,250}$
	<p>= 4 times</p>

3. Gross Profit Margin =	$\frac{\text{Gross profit}}{\text{Sales}}$	$\times 100$
	GP = Sales - COGS 2002-03: 2002: = 62,500 + 10,000 - (5,000 + 37,500) = 30,000 2003-04: = 1,12,500 + 12,500 - (10,000 + 47,500) = 67,500	
	2002-03: = $\frac{30,000}{62,500}$	$\times 100$
	= 48%	
	2003-04: = $\frac{67,500}{1,12,500}$	$\times 100$
	= 60%	

4. Liquid Ratio =	$\frac{\text{Liquid Assets}}{\text{Liquid liabilities}}$	
	(Liquid) Quick Assets = Current Assets - Stock	
	(Liquid) Quick Liabilities = Current Liabilities – BOD	
	2002-03: = $\frac{25,000 - 10,000}{17,500}$	
	= $\frac{15,000}{17,500}$	
	= 0.86 :1	
	2003-04: = $\frac{35,000 - 12,500}{22,500}$	

= $\frac{22,500}{22,500}$	
= 1 : 1	

5. Debtors Ratio	=	$\frac{\text{Debtors + Bills receivable}}{\text{Credit sales}}$	X 300 days
(Avg. debt collection period)			
		2002-03:	
		= $\frac{7,500 + 2,500}{62,500}$	X 300 days
		= $\frac{10,000}{62,500}$	X 300 days
		= 48 days	
		2003-04:	
		= $\frac{10,000 + 5,000}{1,12,500}$	X 300 days
		= $\frac{15,000}{1,12,500}$	X 300 days
		= 40 days	

6. Rate of return on Equity Shareholders Fund:		
	2002	
	= $\frac{\text{PAT – Pref. Div.}}{\text{ESHF}}$	X 100
	ESHF = Eq. Sh. Cap. + Reserves & Surplus – Fictitious Assets	
	ESHF = 1,00,000 + 12,500 + 10,000 - 7,500 = 1,15,000	
	= $\frac{17,500}{1,15,000}$	X 100
	= 15.22 %	
	2003:	

ESHF: 1,25,000 + 15,000 + 7,500 - 5,000 = 1,42,500	
= $\frac{30,000}{1,42,500}$	X 100
= 21.05%	

7.	Ownership Ratio	=	<u>Shareholders' Funds</u>	
			Total Assets	
			SHF = Eq. Sh. Cap. + Reserves & Surplus – Fictitious Assets	
			Total Assets = Total Assets – Fictitious Assets	
			2002 = SHF = 1,00,000 + 12,500 + 10,000 - 7,500	
			= 1,15,000	
			TA = 1,40,000 - 7,500	
			= 1,32,500	
			= $\frac{1,15,000}{1,32,500}$	
			= 0.87 : 1 OR = 87%	
			2003 = SHF = 1,25,000 + 15,000 + 7,500 - 5,000	
			= 1,42,500	
			TA = 1,70,000 - 5,000	
			1,65,000	
			= $\frac{1,42,500}{1,65,000}$	
			= 0.86 : 1 OR = 86%	

SELF NOTE