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CA Inter Financial Management

Version 4

Jan 26 & Onwards

Ready To Go **Question Bank**

CA Amit Sharma

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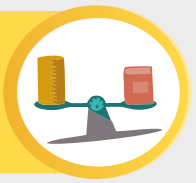

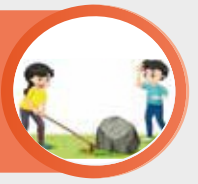

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CA AMIT SHARMA

1 CHAPTER

RATIO ANALYSIS

Q.1 All Ratios | PY May 23

Following information and ratios are given in respect of AQUA Ltd. for the year ended 31st March, 2023:

Current ratio	4.0
Acid test ratio	2.5
Inventory turnover ratio (based on sales)	6
Average collection period (days)	70
Earnings per share	₹ 3.5
Current liabilities	₹ 3,10,000
Total assets turnover ratio (based on sales)	0.96
Cash ratio	0.43
Proprietary ratio	0.48
Total equity dividend	₹ 1,75,000
Equity dividend coverage ratio	1.60

Assume 360 days in a year.
You are required to complete Balance Sheet as on 31stMarch, 2023.

Balance Sheet as on 31stMarch, 2023.

Liabilities	₹	Assets	₹
Equity share capital (₹10 per share)	XXX	Fixed assets	XXX
Reserves & surplus	XXX	Inventory	XXX
Long-term debt	XXX	Debtors	XXX
Current liabilities	3,10,000	Loans & advances	XXX
		Cash & bank	XXX
Total	XXX	Total	XXX

Ans.

(i) Current Ratio = 4

$$\frac{\text{Current Assets}}{\text{Current Liabilities}} = 4$$

$$\frac{\text{Current Assets}}{3,10,000} = 4$$

Current Assets = ₹ 12,40,000

(ii) Acid Test Ratio = 2.5

$$\frac{\text{Current Assets - Inventory}}{\text{Current Liabilities}} = 2.5$$

$$\frac{12,40,000 - \text{Inventory}}{3,10,000} = 2.5$$

12,40,000 – Inventory = ₹ 7,75,000
Inventory = ₹ 4,65,000

(iii) Inventory Turnover Ratio (on Sales) = 6

$\frac{\text{Sales}}{\text{Inventory}} = 6$

$\frac{\text{Sales}}{4,65,000} = 6$

Sales = ₹ 27,90,000

(iv) Debtors Collection Period = 70 days
(Debtors / sales) x 360 = 70
(Debtors / 27,90,000) x 360 = 70
Debtors = ₹ 5,42,500

(v) Total Assets Turnover Ratio (on Sales) = 0.96

$\frac{\text{Sales}}{\text{Total Assets}} = 0.96$

$\frac{27,90,000}{\text{Total Assets}} = 0.96$

Total Assets = ₹ 29,06,250

(vi) Fixed Assets (FA) = Total Assets – Current Assets
= 29,06,250 – 12,40,000
Fixed Assets = ₹ 16,66,250

(vii) Cash Ratio = $\frac{\text{Cash}}{\text{Current Liabilities}} = 0.43$

$\frac{\text{Cash}}{3,10,000} = 0.43$

Cash = ₹ 1,33,300

(viii) Proprietary Ratio = $\frac{\text{Proprietary Fund}}{\text{Total Assets}} = 0.48$

$\frac{\text{Proprietary Fund}}{29,06,250} = 0.48$

Proprietary Fund = ₹ 13,95,000

(ix) Equity Dividend Coverage Ratio = 1.6 or

$\frac{\text{EPS}}{\text{DPS}} = \frac{3.5}{\text{DPS}}$

DPS = ₹ 2.1875

$\text{DPS} = \frac{\text{Total Dividend}}{\text{Number of Equity Shares}}$

$2.1875 = \frac{1,75,000}{\text{Number of Equity Shares}}$

Number of Equity Shares = 80,000
Equity Share Capital = 80,000 x 10 = ₹ 8,00,000
Reserves &Surplus = 13,95,000 - 8,00,000 = ₹ 5,95,000

(x) Loans and Advances = Current Assets - (Inventory + Receivables + Cash & Bank)
= ₹ 12,40,000 - (₹ 4,65,000 + 5,42,500 + 1,33,300) = ₹ 99,200

Balance Sheet as on 31st March 2023

Liabilities	₹	Assets	₹
Equity Share Capital (₹ 10 per share)	8,00,000	Fixed Assets	16,66,250

Reserves & Surplus	5,95,000	Inventory	4,65,000
Long-term debt *(B/F)	12,01,250	Receivables	5,42,500
Current Liabilities	3,10,000	Loans & Advances	99,200
		Cash & Bank	1,33,300
Total	**29,06,250**	**Total**	**29,06,250**

Q.2 All Ratios | PY May 22

Following information and ratios are given for W Limited for the year ended 31st March, 2022:

Equity Share Capital of ₹ 10 each	₹ 10 lakhs
Reserves & Surplus to Shareholders' Fund	0.50
Sales / Shareholders' Fund	1.50
Current Ratio	2.50
Debtors Turnover Ratio	6.00
Stock Velocity	2 Months
Gross Profit Ratio	20%
Net Working Capital Turnover Ratio	2.50

You are required to calculate:

(i) Shareholders' Fund
(ii) Stock
(iii) Debtors
(iv) Current liabilities
(v) Cash Balance.

Ans.

(i) Calculation of Shareholders' Fund:

$$\frac{\text{Reserve \& Surplus}}{\text{Shareholders' Funds}} = 0.5$$

$$\frac{\text{Reserve \& Surplus}}{\text{Equity Share Capital + Reserve \& Surplus}} = 0.5$$

$$\frac{\text{Reserve \& Surplus}}{10{,}00{,}000 + \text{Reserve \& Surplus}} = 0.5$$

Reserve & Surplus = 5,00,000 + 0.5 Reserve & Surplus
0.5 Reserve & Surplus = 5,00,000
Reserve & Surplus = 10,00,000
Shareholders' funds = 10,00,000 +10,00,000
Shareholders' funds = ₹ 20,00,000

(ii) Calculation of Value of Stock:

$$\frac{\text{Sales}}{\text{Shareholders' Funds}} = 1.5$$

Sales = 1.5 × 20,00,000
Sales = 30,00,000
Gross Profit = 30,00,000 × 20% = 6,00,000
Cost of Goods Sold = 30,00,000 – 6,00,000
= ₹ 24,00,000
Stock velocity = 2 months

$$\frac{\text{Average Stock}}{\text{Cost of Goods Sold}} \times 12 = 2$$

$\frac{\text{Average Stock}}{24,00,000} \times 12 = 2$

Average Stock = 24,00,000 x $\frac{2}{12}$

Average stock = ₹ 4,00,000

(iii) Calculation of Debtors:

Debtors Turnover Ratio = 6

$\frac{\text{Sales}}{\text{Average Debtor}} = 6$

$\frac{30,00,000}{\text{Average Debtor}} = 6$

Average Debtors = ₹ 5,00,000

(iv) Calculation of Current Liabilities:

Net Working Capital Turnover ratio = 2.5

$\frac{\text{Sales}}{\text{Current Assets - Current Liabilites}} = 2.5$

$\frac{30,00,000}{\text{Current Assets - Current Liabilites}} = 2.5$

Current Assets – Current Liabilities = 12,00,000 ..... (1)

Current Ratio = 2.5

$\frac{\text{Current Assets}}{\text{Current Liabilites}} = 2.5$

Current Assets = 2.5 Current Liabilities .....(2)

From (1) & (2),

2.5 Current Liabilities – Current Liabilities = 12,00,000

1.5 Current Liabilities = 12,00,000

Current Liabilities = ₹ 8,00,000

(v) Calculation of Cash Balance:

Current Assets = 2.5 Current Liabilities

Current Assets = 2.5 (8,00,000)	= 20,00,000
(-) Debtors	(5,00,000)
(-) Stock	(4,00,000)
Cash Balance	**₹ 11,00,000**

Q.3 Prepare B/s | PY Dec 21

Following are the data in respect of ABC Industries for the year ended 31 st March, 2021:

Debt to Total assets ratio	:	0.40
Long-term debts to equity ratio	:	30%
Gross profit margin on sales	:	20%
Accounts receivables period	:	36 days
Quick ratio	:	0.9
Inventory holding period	:	55 days
Cost of goods sold	:	₹ 64,00,000

Liabilities	₹	Assets	₹
Equity Share Capital	20,00,000	Fixed assets	
Reserves & surplus		Inventories	
Long-term debts		Accounts receivable	
Accounts payable		Cash	
Total	50,00,000	Total	

Required:
Complete the Balance Sheet of ABC Industries as on 31st March, 2021. All calculations should be in nearest Rupee. Assume 360 days in a year.

Ans.

Working Notes:

(1) Total liability = Total Assets = ₹ 50,00,000
Debt to Total Asset Ratio = 0.40

$$\frac{\text{Debt}}{\text{Total Assets}} = 0.40$$

Or, $\frac{\text{Debt}}{50,00,000} = 0.40$

So, **Debt** = **20,00,000**

(2) Total Liabilities = ₹ 50,00,000
Equity share Capital + Reserves + Debt = ₹ 50,00,000
So, Reserves =₹ 50,00,000 - ₹ 20,00,000 - ₹ 20,00,000
So, Reserves & Surplus = ₹ 10,00,000

(3) $\frac{\text{Long term Debt}}{\text{Equity Shareholde rs' Fund}} = 30\%^*$

$\frac{\text{Long term Debt}}{(20,00,000 + 10,00,000)} = 30\%^*$

Long Term Debt = ₹ 9,00,000

(4) So, Accounts Payable = ₹ 20,00,000 – ₹ 9,00,000
Accounts Payable = ₹ 11,00,000

(5) Gross Profit to sales = 20%
Cost of Goods Sold = 80% of Sales = ₹ 64,00,000
Sales = $\frac{100}{80}$ X 64,00,000 = 80,00,000

(6) Inventory Turnover = $\frac{360}{55}$

$\frac{COGS}{\text{Closing inventory}} = \frac{360}{55}$

$\frac{64,00,000}{\text{Closing inventory}} = \frac{360}{55}$

Closing inventory = 9,77,778

(7) Accounts Receivable period = 36 days

$\frac{\text{Accounts Receivable}}{\text{Credit sales}} \times 360 = 36$

Accounts Receivable $= \frac{36}{360} \times$ credit sales

$= \frac{36}{360} \times$ 80,00,000 (assumed all sales are on credit)

Accounts Receivable = ₹ 8,00,000

(8) Quick Ratio = 0.9

$\frac{\text{Quick Assets}}{\text{Current liabilities}} = 0.9$

$\frac{\text{Cash + Debtors}}{11,00,000} = 0.9$

Cash + 8,00,000 = ₹ 9,90,000

Cash = ₹ 1,90,000

(9) Fixed Assets = Total Assets- Current Assets = 50,00,000 – (9,77,778+8,00,000+1,90,000) = **30,32,222**

Balance Sheet of ABC Industries as on 31st March 2021

Liabilities	**(₹)**	**Assets**	**(₹)**
Share Capital	20,00,000	Fixed Assets	**30,32,222**
Reserved surplus	**10,00,000**	Current Assets:	
Long Term Debt	**9,00,000**	Inventory	**9,77,778**
Accounts Payable	**11,00,000**	Accounts Receivables	**8,00,000**
		Cash	**1,90,000**
Total	50,00,000	**Total**	**50,00,000**

(***Note**: Equity shareholders' fund represent equity in 'Long term debts to equity ratio'. The question can be solved assuming only share capital as 'equity')

Q.4 Prepare B/s | PY July 21

Masco Limited has furnished the following ratios and information relating to the year ended 3 1st March 2021:

Sales	₹ 75,00,000
Return on net worth	25%
Rate of income tax	50%
Share capital to reserves	6:4
Current ratio	2.5
Net profit to sales (After Income Tax)	6.50%
Inventory turnover (based on cost of goods sold)	12
Cost of goods sold	₹ 22,50,000
Interest on debentures	₹ 75,000
Receivables (includes debtors ₹ 1,25,000)	₹ 2,00,000
Payables	₹ 2,50,000
Bank Overdraft	₹ 1,50,000

You are required to:

(a) Calculate the operating expenses for the year ended 31st March, 2021.

(b) Prepare a balance sheet as on 31st March in the following format:

Liabilities	₹	Assets	₹
Share Capital		Fixed Assets	
Reserves and Surplus		Current Assets	
15% Debentures		Stock	
Payables		Receivables	
Bank Term Loan		Cash	

Ans. **(a) Calculation of Operating Expenses for the year ended 31st March, 2021**

Particulars		(₹)
Net Profit [@ 6.5% of Sales] Add: Income		4,87,500
Tax (@ 50%)		4,87,500
Profit Before Tax (PBT)		9,75,000
Add: Debenture Interest		75,000
Profit before interest and tax (PBIT)		10,50,000
Sales		75,00,000
Less: Cost of goods sold	22,50,000	
PBIT	10,50,000	33,00,000
Operating Expenses		42,00,000

(b) Balance Sheet as on 31st March, 2021

Liabilities	₹	Assets	₹
Share Capital	11,70,000	Fixed Assets	18,50,000
Reserve and Surplus	7,80,000	Current Assets	
15% Debentures	5,00,000	Stock	1,87,500
Payables	2,50,000	Receivables	2,00,000
Bank Overdraft(or Bank Term Loan)	1,50,000	Cash	6,12,500
	28,50,000		28,50,000

Working Notes:

(i) Calculation of Share Capital and Reserves

The return on net worth is 25%. Therefore, the profit after tax of ₹ 4,87,500 should be equivalent to 25% of the net worth.

Net worth $\frac{25}{100}$ = ₹ 4,87,500

Net worth = $\frac{4,87,500 \times 100}{25}$ = ₹ 19,50,000

The ratio of share capital to reserves is 6:4

Share Capital = 19,50,000 x 6/10 = ₹ 11,70,000

Reserves = 19,50,000 x 4/10 = ₹ 7,80,000

(ii) Calculation of Debentures

Interest on Debentures @ 15% (as given in the balance sheet format) = ₹ 75,000

Debentures = $\frac{75,000 \times 100}{15}$ = ₹ 5,00,000

(iii) Calculation of Current Assets

Current Ratio = 2.5

Payables = ₹ 2,50,000
Bank overdraft = ₹ 1,50,000
Total Current Liabilities = ₹ 2,50,000 + ₹ 1,50,000 = ₹ 4,00,000
Current Assets = 2.5 x Current Liabilities = 2.5 □ 4,00,000 = ₹ 10,00,000

(iv) Calculation of Fixed Assets

Particulars	₹
Share capital	11,70,000
Reserves	7,80,000
Debentures	5,00,000
Payables	2,50,000
Bank Overdraft	1,50,000
Total Liabilities	28,50,000
Less: Current Assets	10,00,000
Fixed Assets	18,50,000

(v) Calculation of Composition of Current Assets

Inventory Turnover = 12

$$\frac{\text{Cost of goods sold}}{\text{Closing stock}} = 12$$

Closing stock = $\frac{22,50,000}{12}$ = Closing stock = ₹ 1,87,500

Particulars	₹
Stock	1,87,500
Receivables	2,00,000
Cash (balancing figure)	6,12,500
Total Current Assets	10,00,000

Q.5 Prepare B/s | PY Jan 21

From the following information, complete the Balance Sheet given below:

(i)	Equity Share Capital	:	₹ 2,00,000
(ii)	Total debt to owner's equity	:	0.75
(iii)	Total Assets turnover	:	2 times
(iv)	Inventory turnover	:	8 times
(v)	Fixed Assets to owner's equity	:	0.60
(vi)	Current debt to total debt	:	0.40

Balance Sheet of XYZ Co. as on March 31, 2020

Liabilities	Amount (₹)	Assets	Amount (₹)
Equity Shares Capital	2,00,000	Fixed Assets	?
Long term Debt	?	Current Assets:	
Current Debt	?	Inventory	?
		Cash	?

Ans. **Balance Sheet of XYZ Co. as on March 31, 2020**

Liabilities	Amount (₹)	Assets	Amount (₹)
Equity Share Capital	2,00,000	Fixed Assets	1,20,000

Long-term Debt	90,000	**Current Assets:**	
Current Debt	60,000	Inventory	87,500
		Cash (balancing figure)	1,42,500
	3,50,000		**3,50,000**

Working Notes

1. Total Debt = 0.75 x Equity Share Capital = 0.75 x ₹ 2,00,000 = ₹ 1,50,000
   Further, Current Debt to Total Debt = 0.40.
   So, Current Debt = 0.40 x ₹ 1,50,000 = ₹ 60,000
   Long term Debt = ₹ 1,50,000 - ₹ 60,000 = ₹ 90,000
2. Fixed Assets = 0.60 x Equity Share Capital = 0.60 x ₹ 2,00,000 = ₹ 1,20,000
3. Total Assets to Turnover = 2 times; Inventory Turnover = 8 times
   Hence, Inventory /Total Assets = 2/8 =1/4
   Further, Total Assets = ₹ 2,00,000 + ₹ 1,50,000 = ₹ 3,50,000
   Therefore, Inventory = ₹ 3,50,000/4 = ₹ 87,500
   Cash in Hand = Total Assets – Fixed Assets – Inventory
   = ₹ 3,50,000 - ₹ 1,20,000 - ₹ 87,500 = ₹ 1,42,500

Q.6 Return on Asset | PY Nov 20

Following information relates to RM Co. Ltd.

	(₹)
Total Assets employed	10,00,000
Direct Cost	5,50,000
Other Operating Cost	90,000

Goods are sold to the customers at 150% of direct costs.
50% of the assets being financed by borrowed capital at an interest cost of 8% per annum. Tax rate is 30%.
You are required to calculate :

(i) Net profit margin
(ii) Return on Assets
(iii) Asset turnover
(iv) Return on owners' equity

Ans. **Computation of net profit:**

Particulars	**(₹)**
Sales (150% of ₹ 5,50,000)	8,25,000
Direct Costs	5,50,000
Gross profit	2,75,000
Other Operating Costs	90,000
Operating profit (EBIT)	1,85,000
Interest changes (8% of ₹ 5,00,000)	40,000
Profit before taxes (EBT)	1,45,000
Taxes (@ 30%)	43,500
Net profit after taxes (EAT)	**1,01,500**

(i) Net profit margin (After tax) = $\frac{\text{Profit after taxes}}{\text{Sales}} = \frac{1,01,500}{8,25,000}$ = **0.12303 or 12.303%**

Net profit margin (Before tax)= $\frac{\text{Profit before taxes}}{\text{Sales}} = \frac{1,45,000}{8,25,000}$ = **0.17576 or 17.576%**

(ii) Return on assets = $\frac{EBIT\ (1 - T)}{Total\ Assets} = \frac{1,85,000\ (1 - 0.3)}{10,00,000}$ = **0.1295 or 12.95%**

(iii) Asset turnover = $\frac{Sales}{Assets} = \frac{8,25,000}{10,00,000}$ = **0.825 times**

(iv) Return on owner's equity = $\frac{Profit\ after\ taxes}{Owners\ equity} = \frac{`1,01,500}{50\% \times `10,00,000}$ = **0.203 or 20.3%**

Q.7 | COGS | PY Nov 18

The following is the information of XML Ltd. relate to the year ended 31-03-2018 : Gross Profit 20% of Sales

Net Profit	10% of Sales
Inventory Holding period	3 months
Receivable collection period	3 months
Non-Current Assets to Sales	1 : 4
Non-Current Assets to Current Assets	1 : 2
Current Ratio	2 : 1
Non-Current Liabilities to Current Liabilities	1 : 1
Share Capital to Reserve and Surplus	4 : 1
Non-current Assets as on 31st March, 2017	₹ 50,00,000

Assume that:
(i) No change in Non-Current Assets during the year 2017-18
(ii) No depreciation charged on Non-Current Assets during the year 2017-18.
(iii) Ignoring Tax
You are required to Calculate cost of goods sold, Net profit, Inventory, Receivables and Cash for the year ended on 31st March, 2018

Ans. **Workings**

$\frac{Non\ Current\ Assets}{Curent\ Assets} = \frac{1}{2}$

Or $\frac{50,00,000}{Curent\ Assets} = \frac{1}{2}$

So, Current Assets = ₹ 1,00,00,000

Now further,

$\frac{Non\ Current\ Assets}{Sales} = \frac{1}{4}$

Or $\frac{50,00,000}{Sales} = \frac{1}{4}$

So, Sales = ₹ 2,00,00,000

Calculation of Cost of Goods sold, Net profit, Inventory, Receivables and Cash:

(i) Cost of Goods Sold (COGS):
Cost of Goods Sold = Sales- Gross Profit
= ₹ 2,00,00,000 – 20% of ₹ 2,00,00,000
= ₹ 1,60,00,000

(ii) Net Profit = 10% of Sales = 10% of ₹ 2,00,00,000
= ₹ 20,00,000

(iii) Inventory:

$$\text{Inventory Holding Period} = \frac{12 \text{ Months}}{\text{Inventory Turnover Ratio}}$$

Inventory Turnover Ratio = 12/ 3 = 4

$$4 = \frac{COGS}{\text{Average Inventory}}$$

$$4 = \frac{1,60,00,000}{\text{Average Inventory}}$$

Average or Closing Inventory =₹ 40,00,000

(iv) Receivables :

$$\text{Receivable Collection Period} = \frac{12 \text{ Months}}{\text{Receivables Turnover Ratio}}$$

$$\text{Or Receivables Turnover Ratio} = 12/3 = 4 = \frac{\text{Credit Sales}}{\text{Average Accounts Receivable}}$$

$$\text{Or } 4 = \frac{2,00,00,000}{\text{Average Accounts Receivable}}$$

So, Average Accounts Receivable/Receivables =₹ 50,00,000/-

(v) Cash:

Cash* = Current Assets* - Inventory- Receivables
Cash = ₹ 1,00,00,000 - ₹ 40,00,000 - ₹ 50,00,000
= ₹ 10,00,000

(it is assumed that no other current assets are included in the Current Asset)

Q.8 Calculate Ratios | RTP Nov 19

From the following table of financial ratios of Prabhu Chemicals Limited, comment on various ratios given at the end:

Ratios	2021	2022	Average of Chemical Industry
Liquidity Ratios			
Current ratio	2.1	2.3	2.4
Quick ratio	1.4	1.8	1.4
Receivable turnover ratio	8	9	8
Inventory turnover	8	9	5
Receivables collection period	46 days	41 days	46 days
Operating profitability			
Operating income -ROI	24%	21%	18%
	18%	18%	12%

Operating profit margin			
Financing decisions	45%	44%	60%
Debt ratio			
Return	26%	28%	18%
Return on equity			

COMMENT on the following aspect of Prabhu Chemicals Limited

(i) Liquidity

(ii) Operating profits

(iii) Financing

(iv) Return to the shareholders

Ans.

Ratios	Comment
Liquidity	Current ratio has improved from last year and matching the industry average. Quick ratio also improved than last year and above the industry average. The reduced inventory levels (evidenced by higher inventory turnover ratio) have led to better quick ratio in FY 2022 compared to FY 2021. Further the decrease in current liabilities is greater than the collective decrease in inventory and debtors as the current ratio have increase from FY2021 to FY 2022.
Operating Profits	Operating Income-ROI reduced from last year, but Operating Profit Margin has been maintained. This may happen due to decrease in operating cost. However, both the ratios are still higher than the industry average.
Financing	The company has reduced its debt capital by 1% and saved earnings for equity shareholders. It also signifies that dependency on debt compared to other industry players (60%) is low.
Return to the shareholders	Prabhu's ROE is 26 per cent in 2021 and 28 per cent in 2022 compared to an industry average of 18 per cent. The ROE is stable and improved over the last year.

Q.9 Find missing figures of B/S | RTP May 23

From the following information, find out missing figures and REWRITE the balance sheet of Mukesh Enterprise.
Current Ratio = 2:1
Acid Test ratio = 3:2
Reserves and surplus = 20% of equity share capital
Long term debt = 45% of net worth Stock turnover velocity = 1.5 months Receivables turnover velocity = 2 months
You may assume closing Receivables as average Receivables. Gross profit ratio = 20%
Sales is ₹ 21,00,000 (25% sales are on cash basis and balance on credit basis) Closing stock is ₹ 40,000 more than opening stock.
Accumulated depreciation is 1/6 of original cost of fixed assets.
Balance sheet of the company is as follows:

Liabilities	(₹)	Assets	(₹)
Equity Share Capital	?	Fixed Assets (Cost)	?
Reserves & Surplus	?	Less: Accumulated. Depreciation	?

Long Term Loans	6,75,000	Fixed Assets (WDV)	?
Bank Overdraft	60,000	Stock	?
Creditors	?	Debtors	?
		Cash	?
Total	?	Total	?

Ans.

Liabilities	**(₹)**	**Assets**	**(₹)**
Equity Share Capital	12,50,000	Fixed Assets (cost)	20,58,000
Reserves & Surplus	2,50,000	Less: Acc. Depreciation	(3,43,000)
Long Term Loans	6,75,000	Fixed Assets (WDV)	17,15,000
Bank Overdraft	60,000	Stock	2,30,000
Payables	4,00,000	Receivables	2,62,500
		Cash	4,27,500
Total	**26,35,000**	**Total**	**26,35,000**

Working Notes:

(i) Sales ₹ 21,00,000
Less: Gross Profit (20%) ₹ 4,20,000
Cost of Goods Sold (COGS) ₹ 16,80,000

(ii) Receivables Turnover Velocity = $\frac{\text{Average Receivables}}{\text{Credit Sales}} \times 12$

$2 = \frac{\text{Average Receivables}}{21,00,000 \times 75\%} \times 12$

Average Receivables = $\frac{21,00,000 \times 75\% \times 2}{12}$

Average Receivables = ₹ 2,62,500
Closing Receivables = ₹ 2,62,500

(iii) Stock Turnover Velocity = $\frac{\text{Average Stock}}{COGS} \times 12$

Or $1.5 = \frac{\text{Average Stock}}{16,80,000} \times 12$

Or Average Stock = $\frac{16,80,000 \times 1.5}{12}$

Or Average Stock = ₹ 2,10,000

$\frac{\text{Opening Stock} + \text{Closing Stock}}{2}$ = ₹ 2,10,000

Opening Stock + Closing Stock = ₹ 4,20,000.....(1)

Also, Closing Stock-Opening Stock = ₹ 40,000.....(2)

Solving (1) and (2), we get **closing stock = ₹ 2,30,000**

(iv) Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{\text{Stock + Receivables + Cash}}{\text{Bank Overdraft + Creditors}}$

$$\text{Or } 2 = \frac{2,30,000 + `2,62,500 + \text{Cash}}{60,000 + \text{Creditors}}$$

Or ₹ 1,20,000 + 2 Payables = ₹ 4,92,500 + Cash

Or 2 Payables – Cash.= ₹ 3,72,500

Or Cash = 2 Payables – ₹ 3,72,500.....(3)

$$\text{Acid Test Ratio} = \frac{\text{Current Assests - Stock}}{\text{Current Liabilities}} = \frac{\text{Debtor + Cash}}{\text{Current Liabilities}}$$

$$\text{Or } \frac{3}{2} = \frac{2,62,500 + \text{Cash}}{60,000 + \text{Creditors}}$$

Or ₹ 1,80,000 + 3 Payables = ₹ 5,25,000 + 2 Cash

Or 3 Payables – 2 Cash = ₹ 3,45,000 ..... (4)

Substitute (3) in (4)

Or 3 Payables – 2(2 Payables – ₹ 3,72,500) = ₹ 3,45,000

Or 3 Payables – 4 Payables + ₹ 7,45,000= ₹ 3,45,000 (Payables) = ₹ 3,45,000 - ₹ 7,45,000

Payables = ₹ 4,00,000

So, Cash = 2 x ₹ 4,00,000 – ₹ 3,72,5000

Cash = ₹ 4,27,500

(v) Long term Debt = 45% of Net Worth Or ₹ 6,75,000 = 45% of Net Worth Net Worth = ₹ 15,00,000

(vi) Equity Share Capital (ESC) + Reserves = ₹ 15,00,000
Or ESC + 0.2ESC = ₹ 15,00,000
Or 1.2 ESC = ₹ 15,00,000
Equity Share Capital (ESC) = ₹ 12,50,000

(vii) Reserves = 0.2 x ₹ 12,50,000

Reserves = ₹ 2,50,000

(viii) Total of Liabilities=Total of Assets
Or ₹ 12,50,000 + ₹ 2,50,000 + ₹ 6,75,000 +₹ 60,000 + ₹ 4,00,000 + Fixes Assets(FA) (WDV) + ₹ 2,30,000 + ₹ 2,62,000 +₹ 4,27,500
Or ₹ 26,35,000 = ₹ 9,20,000 + FA(WDV)
FA (WDV) =₹ 17,15,000
Now FA(Cost) – Depreciation = FA(WDV) Or FA(Cost) – FA(Cost)/6 = ₹ 17,15,000
Or 5 FA(Cost)/6 = ₹ 17,15,000
Or FA(Cost) = ₹ 17,15,000x 6/5
So, FA(Cost) = ₹ 20,58,000
Depreciation = ₹ 20,58,000/6 = ₹ 3,43,000

Q.10 Prepare B/S | RTP Nov 22

The following information of ASD Ltd. relate to the year ended 31st March, 2022:

Net profit	8% of sales
Raw materials consumed	20% of Cost of Goods Sold

Direct wages	10% of Cost of Goods Sold
Stock of raw materials	3 months' usage
Stock of finished goods	6% of Cost of Goods Sold
Gross Profit	15% of Sales
Debt collection period	2 Months
(All sales are on credit)	
Current ratio	2 : 1
Fixed assets to Current assets	13 : 11
Fixed assets to sales	1 : 3
Long-term loans to Current liabilities	2 : 1
Capital to Reserves and Surplus	1 : 4

You are required to PREPARE-

(a) Profit & Loss Statement of ASD Limited for the year ended 31st March, 2022 in the following format.

Particulars	(₹)	Particulars	(₹)
To Direct Materials consumed	?	By Sales	?
To Direct Wages	?		
To Works (Overhead)	?		
To Gross Profit c/d	?		
	?		?
To Selling and Distribution Expenses	?	By Gross Profit b/d	?
To Net Profit	?		
	?		?

(b) Balance Sheet as on 31st March, 2022 in the following format.

Liabilities	(₹)	Assets	(₹)
Share Capital	?	Fixed Assets	1,30,00,000
Reserves and Surplus	?	Current Assets:	
Long term loans	?	Stock of Raw Material	?
Current liabilities	?	Stock of Finished Goods	?
		Debtors	?
		Cash	?
	?		?

Ans. **Working Notes:**

(i) Calculation of Sales

$$\frac{\text{Fixed Assets}}{\text{Sales}} = \frac{1}{3}$$

$$\frac{1,30,00,000}{\text{Sales}} = \frac{1}{3} \Rightarrow \text{Sales} = ₹\ 3,90,00,000$$

(ii) Calculation of Current Assets

$$\frac{\text{Fixed Assets}}{\text{Current Assets}} = \frac{13}{11}$$

$$\frac{1,30,00,000}{\text{Current Assets}} = \frac{13}{11} \Rightarrow \text{Current Assets} = ₹\ 1,10,00,000$$

(iii) Calculation of Raw Material Consumption and Direct Wages

	₹
Sales	3,90,00,000
Less: Gross Profit (15 % of Sales)	58,50,000
Cost of Goods sold	3,31,50,000
Raw Material Consumption (20% of Cost of Goods Sold)	₹ 66,30,000
Direct Wages (10% of Cost of Goods Sold)₹	33,15,000

(iv) Calculation of Stock of Raw Materials (= 3 months usage)

$= 66,30,000 \times \frac{3}{12} = ₹\ 16,57,500$

(v) Calculation of Stock of Finished Goods (= 6% of Cost of Goods Sold)

$= 3,31,50,000 \times \frac{6}{100} = ₹\ 19,89,000$

(vi) Calculation of Current Liabilities

$\frac{\text{Current Assets}}{\text{Current Liabilities}} = 2$

$\frac{1,10,00,000}{\text{Current Liabilities}} = 2 \Rightarrow$ Current Liabilities = ₹ 55,00,000

(vii) Calculation of Debtors

Average collection period = $\frac{\text{Debtors}}{\text{Credit Sales}} \times 12$ months

$\frac{\text{Debtors}}{3,90,00,000} \times 12 = 2 \Rightarrow$ Debtors = ₹ 65,00,000

(viii) Calculation of Long-term Loan

$\frac{\text{Long term Loan}}{\text{Current Liabilities}} = \frac{2}{1}$

$\frac{\text{Long term Loan}}{55,00,000} = \frac{2}{1} \Rightarrow$ Long term loan = ₹ 1,10,00,000

(ix) Calculation of Cash Balance

		₹
Current assets		1,10,00,000
Less: Debtors	65,00,000	
Raw materials stock	16,57,500	
Finished goods stock	19,89,000	1,01,46,500
Cash balance		8,53,500

(x) Calculation of Net worth

Fixed Assets		1,30,00,000
Current Assets		1,10,00,000
Total Assets		2,40,00,000
Less: Long term Loan	1,10,00,000	

Current Liabilities	55,00,000	1,65,00,000
Net worth		75,00,000

Net worth = Share capital + Reserves = ₹ 75,00,000

$\frac{\text{Capital}}{\text{Reserves and Surplus}} = \frac{1}{4} \Rightarrow$ Share Capital = ₹ 75,00,000 × $\frac{1}{5}$ = ₹ 15,00,000

Reserves and Surplus = ₹ 75,00,000 × 5 = ₹ 60,00,000

Profit and Loss Statement of ASD Ltd.
for the year ended 31st March, 2022

Particulars	(₹)	Particulars	(₹)
To Direct Materials consumed	66,30,000	By Sales	3,90,00,000
To Direct Wages	33,15,000		
To Works (Overhead) (Bal. fig.)	2,32,05,000		
To Gross Profit c/d (15% of Sales)	58,50,000		
	3,90,00,000		3,90,00,000
To Selling and Distribution Expenses (Bal. fig.)	27,30,000	By Gross Profit b/d	58,50,000
To Net Profit (8% of Sales)	31,20,000		
	58,50,000		**58,50,000**

Balance Sheet of ASD Ltd.
as at 31st March, 2022

Liabilities	(₹)	Assets	(₹)
Share Capital	15,00,000	Fixed Assets	1,30,00,000
Reserves and Surplus	60,00,000	Current Assets:	
Long term loans	1,10,00,000	Stock of Raw Material	16,57,500
Current liabilities	55,00,000	Stock of Finished Goods	19,89,000
		Debtors	65,00,000
		Cash	8,53,500
	2,40,00,000		**2,40,00,000**

Q.11 Debtor / Creditor Ratio | RTP May 22

FM Ltd. is in a competitive market where every company offers credit. To maintain the competition, FM Ltd. sold all its goods on credit and simultaneously received the goods on credit. The company provides the following information relating to current financial year:

Debtors Velocity	3 months
Creditors Velocity	2 months
Stock Turnover Ratio (on Cost of Goods Sold)	1.5
Fixed Assets turnover Ratio (on Cost of Goods Sold)	4

Gross Profit Ratio	25%
Bills Receivables	₹ 75,000
Bills Payables	₹ 30,000
Gross Profit	₹ 12,00,000

FM Ltd. has the tendency of maintaining extra stock of ₹ 30,000 at the end of the period than that at the beginning.

DETERMINE:

(i) Sales and cost of goods sold
(ii) Sundry Debtors
(iii) Closing Stock
(iv) Sundry Creditors
(v) Fixed Assets

Ans.

(i) Determination of Sales and Cost of goods sold:

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

$$\text{Or, } \frac{25}{100} = \frac{12,00,000}{\text{Sales}}$$

$$\text{Or, Sales} = \frac{12,00,000}{25} = ₹\ 48,00,000$$

Cost of Goods Sold = Sales – Gross Profit
= ₹ 48,00,000 - ₹ 12,00,000 = ₹ 36,00,000

(ii) Determination of Sundry Debtors:

Debtors' velocity is 3 months or Debtors' collection period is 3 months,

$$\text{So, Debtors' turnover ratio} = \frac{12\text{months}}{3\text{months}} = 4$$

$$\text{Debtors' turnover ratio} = \frac{\text{Credit Sales}}{\text{Average Accounts Receivable}}$$

$$\frac{48,00,000}{\text{Bills Receivable} + \text{Sundry Debtors}} = 4$$

Or, Sundry Debtors + Bills receivable = ₹ 12,00,000
Sundry Debtors = ₹ 12,00,000 – ₹ 75,000 = ₹ 11,25,000

(iii) Determination of Closing Stock

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}} = \frac{36,00,000}{\text{Average Stock}} = 1.5$$

So, Average Stock = ₹ 24,00,000

$$\text{Now Average Stock} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

$$\text{Or } \frac{\text{Opening Stock} + (\text{Opening Stock} + `30,000)}{2} = ₹\ 24,00,000$$

Or 2 Opening Stock + ₹ 30,000= ₹48,00,000
Or 2 Opening Stock = ₹47,70,000
Or, Opening Stock = ₹ 23,85,000
So, Closing Stock = ₹ 23,85,000 + ₹ 30,000 = ₹ 24,15,000

(iv) Determination of Sundry Creditors:

Creditors' velocity of 2 months or credit payment period is 2 months.

$$\text{So, Creditors' turnover ratio} = \frac{12 \text{ months}}{2 \text{ months}} = 6$$

$$\text{Creditors turnover ratio} = \frac{\text{Credit Purchases *}}{\text{Average Accounts Payables}}$$

$$= \frac{36,30,000}{\text{Sundry Creditors + Bills Payables}} = 6$$

So, Sundry Creditors + Bills Payable = ₹ 6,05,000
Or, Sundry Creditors + ₹ 30,000 = ₹ 6,05,000
Or, Sundry Creditors = ₹ 5,75,000

(v) Determination of Fixed Assets

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Fixed Assets}} = 4$$

$$\text{Or, } \frac{36,00,000}{\text{Fixed Assets}} = 4$$

Or, Fixed Asset = ₹ 9,00,000

Workings:

*Calculation of Credit purchases:

Cost of goods sold = Opening stock + Purchases – Closing stock

₹ 36,00,000 = ₹ 23,85,000 + Purchases – ₹ 24,15,000

Purchases (credit) = ₹ 36,30,000

Calculation of credit purchase also can be done as below:

Or Credit Purchases =Cost of goods sold +Difference in Opening Stock

Or Credit Purchases =36,00,000 +30,000=₹ 36,30,000

Q.12 Return Ratios | RTP July 21

Given below are the estimations for the next year by Niti Ltd.:

Particulars	(₹ in crores)
Fixed Assets	5.20
Current Liabilities	4.68
Current Assets	7.80
Sales	23.00
EBIT	2.30

The company will issue equity funds of ₹ 5 crores in the next year. It is also considering the debt alternatives of ₹ 3.32 crores for financing the assets. The company wants to adopt one of the policies given below:

(₹ in crores)

Financing Policy	Short term debt @ 12%	Long term debt @ 16%	Total
Conservative	1.08	2.24	3.32
Moderate	2.00	1.32	3.32
Aggressive	3.00	0.32	3.32

Assuming corporate tax rate at 30%, CALCULATE the following for each of the financing policy:

(i) Return on total assets

(ii) Return on owner's equity

(iii) Net Working capital

(iv) Current Ratio

Also advise which Financing policy should be adopted if the company wants high returns.

Ans. **(i) Return on total assets**

$$\text{Return on total assets} = \frac{\text{EBIT}(1-T)}{\text{Total assets (FA + CA)}}$$

$$= \frac{2.30 \text{ crores } (1-0.3)}{5.20 \text{ crores} + ₹ 7.80 \text{ crores}}$$

$$= \frac{1.61 \text{crores}}{13 \text{ crores}} = 0.1238 \text{ or } 12.38\%$$

(ii) Return on owner's equity

(Amount in ₹)

	Financing policy (₹)		
	Conservative	Moderate	Aggressive
Expected EBIT	2,30,00,000	2,30,00,000	2,30,00,000
Less: Interest			
Short term Debt @ 12%	12,96,000	24,00,000	36,00,000
Long term Debt @ 16%	35,84,000	21,12,000	5,12,000
Earnings before tax (EBT)	1,81,20,000	1,84,88,000	1,88,88,000
Less: Tax @ 30%	54,36,000	55,46,400	56,66,400
Earnings after Tax (EAT)	1,26,84,000	1,29,41,600	1,32,21,600
Owner's Equity	5,00,00,000	5,00,00,000	5,00,00,000
Return on owner's equity $\frac{\text{Net Profit after taxes (EAT)}}{\text{Owners' equity}}$	$= \frac{1,26,84,000}{5,00,00,000}$	$= \frac{1,29,41,600}{5,00,00,000}$	$= \frac{1,32,21,600}{5,00,00,000}$
	= 0.2537 or 25.37%	= 0.2588 or 25.88%	= 0.2644 or 26.44%

(iii) Net Working capital

(₹ in crores)

	Financing policy		
	Conservative	Moderate	Aggressive

Current Liabilities (Excluding Short Term Debt)	4.68	4.68	4.68
Short term Debt	1.08	2.00	3.00
Total Current Liabilities	5.76	6.68	7.68
Current Assets	7.80	7.80	7.80
Net Working capital = Current Assets - Current Liabilities	7.80 - 5.76 = 2.04	7.80 - 6.68 = 1.12	7.80 - 7.68 = 0.12

(iv) Current ratio

(₹ in crores)

	Financing policy		
	Conservative	**Moderate**	**Aggressive**
Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$	= $\frac{7.80}{5.76}$ = 1.35	= $\frac{7.80}{6.68}$ = 1.17	= $\frac{7.80}{7.68}$ = 1.02

Advise: It is advisable to adopt aggressive financial policy, if the company wants high return as the return on owner's equity is maximum in this policy i.e. 26.44%.

Q.13 ROCE / EPS / P/E | RTP May 20

MT Limited has the following Balance Sheet as on March 31, 2019 and March 31, 2020:

Balance Sheet

	₹ in lakhs	
	March 31, 2019	**March 31, 2020**
Sources of Funds:		
Shareholders' Funds	2,500	2,500
Loan Funds	3,500	3,000
	6,000	5,500
Applications of Funds: Fixed Assets	3,500	3,000
Cash and bank	450	400
Receivables	1,400	1,100
Inventories	2,500	2,000
Other Current Assets	1,500	1,000
Less: Current Liabilities	(1,850)	(2,000)
	6,000	5,500

The Income Statement of the MT Ltd. for the year ended is as follows:

	₹ in lakhs	
	March 31, 2019	**March 31, 2020**
Sales	22,500	23,800
Less: Cost of Goods sold	(20,860)	(21,100)

Gross Profit	1,640	2,700
Less: Selling, General and Administrative expenses	(1,100)	(1,750)
Earnings before Interest and Tax (EBIT)	540	950
Less: Interest Expense	(350)	(300)
Earnings before Tax (EBT)	190	650
Less: Tax	(57)	(195)
Profits after Tax (PAT)	133	455

Required:

CALCULATE for the year 2019-20-

(a) Inventory turnover ratio

(b) Financial Leverage

(c) Return on Capital Employed (ROCE)

(d) Return on Equity (ROE)

(e) Average Collection period.

[Take 1 year = 365 days]

Ans. **Ratios for the year 2019-2020**

(a) Inventory turnover ratio

$$= \frac{COGS}{\text{Average Inventory}} = \frac{21,100}{\frac{(2,500 + 2,000)}{2}} \text{ ₹} = 9.4$$

(b) Financial leverage

$$= \frac{EBIT}{EBT} = \frac{950}{650} = 1.46$$

(c) ROCE

$$= \frac{EBIT\ (1-t)}{\text{Average Capital Employed}} = \frac{950\ (1-0.3)}{\left(\frac{6,000 + 5,500}{2}\right)} = \frac{665}{5,750} \times 100 = 11.56\ \%$$

[Here Return on Capital Employed (ROCE) is calculated after Tax]

(d) ROE

$$= \frac{\text{Profits after tax}}{\text{Average shareholde rs' funds}} = \frac{455}{2,500} \times 100 = 18.2\%$$

(e) Average Collection Period

$$\text{Average Sales per day} = \frac{23,800}{365} = \text{₹ } 65.20 \text{ lakhs}$$

$$\text{Average collection period} = \frac{\text{Average Receivable s}}{\text{Average sales per day}}$$

$$= \frac{\text{`}(1,400 + 1,100)}{\frac{2}{65.2}} = \frac{1,250}{65.2} = 19.17 \text{days}$$

Q.14 All Ratios | RTP Nov 19

The following is the Profit and loss account and Balance sheet of KLM LLP.

Trading and Profit & Loss Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Opening stock	12,46,000	By Sales	1,96,56,000
To Purchases	1,56,20,000	By Closing stock	14,28,000
To Gross profit c/d	42,18,000		
	2,10,84,000		2,10,84,000
		By Gross profit b/d	42,18,000
To Administrative expenses	18,40,000	By Interest on investment	24,600
To Selling & distribution expenses	7,56,000	By Dividend received	22,000
To Interest on loan	2,60,000		
To Net profit	14,08,600		
	42,64,600		42,64,600

Balance Sheet as on…….

Capital & Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	20,00,000	Plant & machinery	24,00,000
Retained earnings	42,00,000	Building	42,00,000
General reserve	12,00,000	Furniture	12,00,000
Term loan from bank	26,00,000	Sundry receivables	13,50,000
Sundry Payables	7,20,000	Inventory	14,28,000
Other liabilities	2,80,000	Cash & Bank balance	4,22,000
	1,10,00,000		1,10,00,000

You are required to COMPUTE:

(i) Gross profit ratio
(ii) Net profit ratio
(iii) Operating cost ratio
(iv) Operating profit ratio
(v) Inventory turnover ratio
(vi) Current ratio
(vii) Quick ratio
(viii) Interest coverage ratio
(ix) Return on capital employed
(x) Debt to assets ratio.

Ans.

(i) Gross profit ratio = $\frac{\text{Gross profit}}{\text{Sales}} \times 100 = \frac{42,18,000}{1,96,56,000} \times ₹100 = 21.46\%$

(ii) Net profit ratio = $\frac{\text{Net profit}}{\text{Sales}} \times 100 = \frac{14,08,600}{1,96,56,000} \times 100 = 7.17\%$

(iii) Operating ratio = $\frac{\text{Operating cost}}{\text{Sales}} \times 100$

Operating cost = Cost of goods sold + Operating expenses

Cost of goods sold = Sales – Gross profit

= 1,96,56,000 - 42,18,000 = 1,54,38,000

Operating expenses = Administrative expenses + Selling & distribution expenses
= 18,40,000 + 7,56,000 = 25,96,000

Therefore, Operating ratio = $\frac{1,54,38,000 + 25,96,000}{1,96,56,000} \times 100$

= $\frac{1,80,34,000}{1,96,56,000} \times 100 = 91.75\%$

(iv) Operating profit ratio = 100 – Operating cost ratio
= 100 – 91.75% = 8.25%

(v) Inventory turnover ratio = $\frac{\text{Cost of goods sold}}{\text{Average stock}}$

= $\frac{1,54,38,000}{\frac{(14,28,000 + 12,46,000)}{2}}$

= $\frac{1,54,38,000}{13,37,000} = 11.55$ times

(vi) Current ratio = $\frac{\text{Current assets}}{\text{Current liablities}}$

Current assets = Sundry receivables + Inventory + Cash & Bank balance
= 13,50,000 + 14,28,000 + 4,22,000 = 32,00,000

Current liabilities = Sundry Payables + Other liabilities
= 7,20,000 + 2,80,000 = 10,00,000

Current ratio = $\frac{32,00,000}{10,00,000}$ = 3.2 times

(vii) Quick Ratio = $\frac{\text{Current assets - Inventories}}{\text{Current liablities}}$

= $\frac{32,00,000 - 14,28,000}{10,00,000}$ =1.77 times

(viii) Interest coverage ratio = $\frac{\text{EBIDT}}{\text{Interest}} = \frac{\text{Net profit + Interest}}{\text{Interest}}$

= $\frac{14,08,600 + 2,60,000}{2,60,000}$ = 6.42 times

(ix) Return on capital employed (ROCE) = $\frac{\text{EBIT}}{\text{Capital employed}} \times 100$

Capital employed = Capital + Retained earnings + General reserve + Term loan
= 20,00,000 + 42,00,000 + 12,00,000 + 26,00,000
= 1,00,00,000

Therefore, ROCE = $\frac{16,68,600}{1,00,00,000} \times 100 = 16.69\%$

(x) Debt to assets ratio = $\frac{\text{Debts}}{\text{Total assets}} \times 100$

= $\frac{26,00,000}{1,10,00,000} \times 100 = 23.64\%$

Q.15 Change in current ratio | RTP Nov 18

Assuming the current ratio of a Company is 2, STATE in each of the following cases whether the ratio will improve or decline or will have no change:

(i) Payment of current liability
(ii) Purchase of fixed assets by cash
(iii) Cash collected from Customers
(iv) Bills receivable dishonoured
(v) Issue of new shares

Ans. Current Ratio = $\frac{\text{Current Assets (CA)}}{\text{Current Liabilities (CL)}}$ = 2 i.e. 2 : 1

S. No.	Situation	Improve/ Decline/ No Change	Reason
(i)	Payment of Current liability	Current Ratio will improve	Let us assume CA is ₹ 2 lakhs & CL is ₹ 1 lakh. If payment of Current Liability = ₹10,000 then, CA = 1,90,000 CL = 90,000. Current Ratio = $\frac{1,90,000}{90,000}$ = 2.11 : 1. When Current Ratio is 2:1 Payment of Current liability will reduce the same amount in the numerator and denominator. Hence, the ratio will improve.
(ii)	Purchase of Fixed Assets by cash	Current Ratio will decline	Since the cash being a current asset converted into fixed asset, current assets reduced, thus current ratio will fall.
(iii)	Cash collected from Customers	Current Ratio will not change	Cash will increase and Debtors will reduce. Hence No Change in Current Asset.
(iv)	Bills Receivable dishonoured	Current Ratio will not change	Bills Receivable will come down and debtors will increase. Hence no change in Current Assets.
(v)	Issue of New Shares	Current Ratio will improve	As Cash will increase, Current Assets will increase and current ratio will increase.

Q.16 Inventory T/O | MTP Nov 23 (2)

ABC Ltd. has total sales of 12,00,000 all of which are credit sales. It has a gross profit ratio of 20% on sales and a current ratio of 2. The company's current liabilities are ₹ 3,00,000. Further, it has inventories of ₹ 1,00,000,

marketable securities of ₹ 70,000 and cash of ₹ 50,000. From the above information:

(i) CALCULATE the average inventory if the expected inventory turnover ratio is three times?

(ii) Also CALCULATE the average collection period if the opening balance of debtors is expected to be ₹ 1,20,000.

Assume 360 days a year.

Ans.

(i) Calculation of Average Inventory

Since gross profit is 20% of sales, the cost of goods sold should be 80% of the sales.

$$\text{Cost of goods sold} = 12,00,000 \times \frac{80}{100} = 9,60,000$$

$$\text{Inventory Turnover} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

$$= \frac{9,60,000}{\text{Average Inventory}}$$

$$\text{Average Inventory} = \frac{9,60,000}{3} = 3,20,000$$

(ii) Calculation of Average Collection Period

$$\text{Average Collection Period} = \frac{\text{Average Receivable}}{\text{Credit Sales}} \times 360$$

$$\text{Where, Average Receivables} = \frac{\text{Opening Receivables - Closing Receivables}}{2}$$

Calculation of Closing balance of Receivables

	₹	₹
Current Assets (2 x 3,00,000)		6,00,000
Less: Inventories	1,00,000	
Less: Marketable Securities	70,000	
Less: Cash	50,000	2,20,000
Receivables (Closing Balance)		**3,80,000**

$$\text{Now, Average Receivables} = \frac{1,20,000 + 3,80,000}{2} = 2,50,000$$

$$\text{So, Average Collection Period} = \frac{2,50,000}{12,00,000} \times 360 = 75 \text{ days}$$

Q.17 Prepare B/S | MTP May 23 (2)

Using the following information, PREPARE the balance sheet:

Long-term debt to net worth	0.25
Total asset turnover	3
Average collection period	9 days
Inventory turnover	13
Gross profit margin	20%
Acid-test ratio	1.5

*Assume a 360-day year and all sales on credit.

Liabilities	₹	Assets	₹
Notes and payables	2,50,000	Cash	?
Long-term debt	?	Accounts receivable	?
Common stock	8,00,000	Inventory	?
Retained earnings	16,00,000	Plant and equipment	?
Total liabilities and equity	?	Total assets	?

Ans.

Working Notes:

(i) Long term Debt

Long Term Debt/ Net worth = 0.25

Long Term Debt/ (8,00,000+16,00,000) = 0.25

Long term debt = 6,00,000

(ii) Total assets

Total liabilities and Equity = Notes and payables + Long-term debt + Common stock + Retained earnings

= 2,50,000+6,00,000+8,00,000+16,00,000

Total assets = Total liabilities and Equity = 32,50,000

(iii) Sales and Cost of Goods sold

Total asset turnover = 3 = Sales/ Total Assets = Sales/32,50,000

Sales = 97,50,000

Cost of goods sold = (100% - Gross Profit margin) x Sales

= (100% - 20%) x 97,50,000 =78,00,000.

(iv) Current Assets

Inventory turnover = 13 = COGS/ Inventory = 78,00,000/Inventory

Inventory = ₹ 6,00,000

Average collection period = 9 = Receivables/Sales x 360 = Receivables/ 97,50,000 x 360

Accounts receivables = 2,43,750

Acid-test ratio = 1.5 = (Cash+ Accounts Receivables) /Notes and Payables

= (Cash +2,43,750)/2,50,000 = 1.5

Cash = 1,31,250

(v) Plant and equipment

= Total Assets - Current Assets

= 32,50,000 - (1,31,250+2,43,750+6,00,000) = 22,75,000

Balance Sheet

Liabilities	₹	**Assets**	₹
Notes and payables	2,50,000	Cash	1,31,250
Long-term debt	6,00,000	Accounts receivable	2,43,750
Common stock	8,00,000	Inventory	6,00,000
Retained earnings	16,00,000	Plant and equipment	22,75,000
Total liabilities and equity	**32,50,000**	**Total assets**	**32,50,000**

Q.18 Prepare B/S & PL | MTP Nov 22 (2)

From the following information and ratios, PREPARE the Balance sheet as at 31st March 2022 and Income statement for the year ended on that date for M/s Ganguly & Co -

Average Stock	₹10 lakh
Current Ratio	3:1
Acid Test Ratio	1:1
PBIT to PBT	2.2:1
Average Collection period (Assume 360 days in a year)	30 days
Stock Turnover Ratio (Use sales as turnover)	5 times
Fixed assets turnover ratio	0.8 times
Working Capital	₹10 lakh
Net profit Ratio	10%
Gross profit Ratio	40%
Operating expenses (excluding interest)	₹ 9 lakh
Long term loan interest	12%
Tax	Nil

Ans.

1. **Current Ratio = 3:1**
   Current Assets (CA)/Current Liability (CL) = 3:1
   CA = 3CL
   WC = 10,00,000
   CA – CL = 10,00,000
   3CL – CL = 10,00,000
   2CL = 10,00,000
   CL = 10, 00, 000
   CL = ₹5,00,000
   CA = 3 x 5,00,000
   CA = ₹15,00,000

2. Acid Test Ratio = CA – Stock / CL = 1:1
   = 15, 00, 000 – Stock/5,00,000 = 1
   15,00,000 – stock = 5,00,000
   Stock = ₹10,00,000

3. Stock Turnover ratio (on sales) = 5
   Sales/ Avg stock = 5
   Sales/10,00,000 = 5
   Sales = ₹50,00,000

4. **Gross Profit** = 50,00,000 x 40% = **₹20,00,000**
   Net profit (PBT) = 50,00,000 x 10% = **₹5,00,000**

5. PBIT/PBT = 2.2
   PBIT = 2.2 x 5,00,000
   PBIT= 11,00,000

Interest = 11,00,000 – 5,00,000 = **₹6,00,000**

Long term loan = $\frac{6,00,000}{0.12}$ = **₹50,00,000**

6. Average collection period = 30 days
Receivables = 30/360 x 50.00.000 = 4,16,667

7. Fixed Assets Turnover Ratio = 0.8
50,00,000/ Fixed Assets = 0.8
Fixed Assets = **₹62,50,000**

Income Statement

	Amount (₹)
Sales	50,00,000
Less: Cost of Goods Sold	30,00,000
Gross Profit	20,00,000
Less: Operating Expenses	9,00,000
Less: Interest.	6,00,000
Net Profit	5,00,000

Balance sheet

Liabilities	Amount (₹)	Assets		Amount (₹)
Equity share capital	22,50,000	Fixed asset		62,50,000
Long term debt	50,00,000	Current assets:		
Current liability	5,00,000	Stock	10,00,000	
		Receivables	4,16,667	
		Other	83,333	15,00,000
	77,50,000			77,50,000

Q.19 Prepare B/S | MTP May 22 (2)

From the following information, you are required to PREPARE a summarised Balance Sheet for Rudra Ltd. for the year ended 31st March, 2022

Debt Equity Ratio	1:1
Current Ratio	3:1
Acid Test Ratio	8:3
Fixed Asset Turnover (on the basis of sales)	4
Stock Turnover (on the basis of sales)	6
Cash in hand	5,00,000
Stock to Debtor	1:1
Sales to Net Worth	4
Capital to Reserve	1:2
Gross Profit	20% of Cost
COGS to Creditor	10:1

Interest for entire year is yet to be paid on Long Term loan @ 10% .

Ans.

Balance Sheet of Rudra Ltd.

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	10,00,000	Fixed Assets	30,00,000
Reserves	20,00,000	Current Assets:	
Long Term Loan @ 10%	30,00,000	Stock in Trade	20,00,000
Current Liabilities:		Debtors	20,00,000
Creditors	10,00,000	Cash	5,00,000
Other Short-term Current Liability (Other STCL)	2,00,000		
Outstanding Interest	3,00,000		
	75,00,000		**75,00,000**

Working Notes:

Let sales be ₹ x

Balance Sheet of Rudra Ltd.

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital		Fixed Assets	x/4
Reserves		Current Assets:	
Net Worth	x/4	Stock in Trade	x/6
Long Term Loan @ 10%	x/4	Debtors	x/6
		Cash	5,00,000
Current liabilities:			
Creditors	x/12		
Other Short-term Current Liability			
Outstanding Interest			
Total Current Liabilities	x/9+5,00,000/3		
Total		**Total**	

1 Fixed Asset Turnover = 4 $= \frac{x}{\text{Fixed Assets}}$

Fixed Assets $= \frac{x}{4}$

2. Stock Turnover = 6 $= \frac{x}{\text{Stock}}$

Stock $= \frac{x}{6}$

3. Sales to net worth = 4 $= \frac{x}{\text{Net worth}}$

net worth $= \frac{x}{4}$

4. Debt: Equity = 1 : 1

$\frac{\text{Long Term Loan}}{\text{Net worth}} = \frac{1}{1}$

Long term loan = Net worth = $\frac{x}{4}$

5. Gross Profit to Cost = 20%

$\frac{GP}{\text{Sales} - GP} = 20\%$

$\frac{GP}{x - GP} = 20\%$

$GP = 0.2x - 0.2\,GP$

$1.2\,GP = 0.2x$

$GP = \frac{0.2x}{1.2}$

$GP = x/6$

Cost of Goods Sold = $x - x/6 = 5/6\,x$

6. COGS to creditors = 10:1

$\frac{COGS}{\text{Creditors}} = \frac{10}{1}$

$\frac{\frac{5x}{6}}{\text{creditors}} = \frac{10}{1}$

Creditors = $\frac{5x}{60} = \frac{x}{12}$

7. $\frac{\text{Stock}}{\text{Debtor}} = 1$

Debtor = Stock = $\frac{x}{6}$

8. Current Ratio = 3 : 1

$\frac{\text{Stock} + \text{Debtors} + \text{Cash}}{\text{Debtor}} = \frac{3}{1}$

$\frac{\frac{x}{6} + \frac{x}{6} + 5{,}00{,}000}{\text{Current Liabilities}} = 3$

$\frac{\frac{x}{3} + 5{,}00{,}000}{3} = CL$

$CL = \frac{x}{9} + \frac{5{,}00{,}000}{3}$

9. CA = 3CL

$= 3\left(\frac{x}{9} + \frac{5{,}00{,}000}{3}\right)$

CA = $\frac{x}{3}$ + 5,00,000

10. Net worth + Long Term Loan + Current Liability = Fixed Asset + Current Assets

$\frac{x}{4} + \frac{x}{4} + \frac{x}{9} + \frac{5{,}00{,}000}{3} = \frac{x}{4} + \frac{x}{3} + 5{,}00{,}000$

$\frac{x}{4} + \frac{x}{9} - \frac{x}{3} = 5{,}00{,}000 - \frac{5{,}00{,}000}{3}$

$$\frac{9x + 4x - 12x}{36} = \frac{15,00,000 - 5,00,000}{3}$$

$$\frac{x}{36} = \frac{10,00,000}{3}$$

$$= 1,20,00,000$$

11. Now, from above calculations, we get,

-> Fixed Asset $= \frac{x}{4} = \frac{1,20,00,000}{4} = 30,00,000$

-> Stock $= \frac{x}{6} = \frac{1,20,00,000}{6} = 20,00,000$

-> Debtor $= \frac{x}{6} = \frac{1,20,00,000}{6} = 20,00,000$

-> Net Worth = x / 4 = 30,00,000

Now, Capital to Reserve is 1 : 2

Capital = ₹ 10,00,000

and, Reserve = ₹ 20,00,000

-> Long Term Loan = $\frac{x}{4}$ = 30,00,000

-> Outstanding Interest = 30,00,000×10% = 3,00,000

-> Creditors $= \frac{x}{12} = \frac{1,20,00,000}{12} = 10,00,000$

-> Current Liabilities = Creditors + Other STCL + Outstanding Interest

$\frac{x}{9} = \frac{5,00,000}{3}$ = 10,00,000+ Other STCL + 3,00,000

$\frac{1,20,00,000}{9} = \frac{5,00,000}{3}$ = 13,00,000+ Other STCL

15,00,000 = Other STCL + 13,00,000

Other STCL = 2,00,000

Q.20 Decision on basis of ratio | MTP Dec 21 (2)

Jensen and spencer pharmaceutical is in the business of manufacturing pharmaceutical drugs including the newly invented Covid vaccine. Due to increase in demand of Covid vaccines, the production had increased at all time high level and the company urgently needs a loan to meet the cash and investment requirements. It had already submitted a detailed loan proposal and project report to Expo-Impo bank, along with the financial statements of previous three years as follows:

Statement of Profit and Loss **(In ₹ '000)**

	2018-19	2019-20	2020-21
Sales			
Cash	400	960	1,600
Credit	3,600	8,640	14,400
Total sales	4,000	9,600	16,000
Cost of goods sold	2,480	5,664	9,600

Gross profit	1,520	3,936	6,400
Operating expenses:			
General, administration, and selling expenses	160	900	2,000
Depreciation	200	800	1,320
Interest expenses (on borrowings)	120	316	680
Profit before tax (PBT)	1,040	1,920	2,400
Tax @ 30%	312	576	720
Profit after tax (PAT)	728	1,344	1,680

BALANCE SHEET **(In ₹ '000)**

	2018-19	2019-20	2020-21
Assets			
Non-Current Assets			
Fixed assets (net of depreciation)	3,800	5,000	9,400
Current Assets			
Cash and cash equivalents	80	200	212
Accounts receivable	600	3,000	4,200
Inventories	640	3,000	4,500
Total	**5,120**	**11,200**	**18,312**
Equity & Liabilities			
Equity share capital (shares of ₹10 each)	2,400	3,200	4,000
Other Equity	728	2,072	3,752
Non-Current borrowings	1,472	2,472	5,000
Current liabilities	520	3,456	5,560
Total	**5,120**	**11,200**	**18,312**

INDUSTRY AVERAGE OF KEY RATIOS

Ratio	Sector Average
Current ratio	2.30:1
Acid test ratio (quick ratio)	1.20:1
Receivable turnover ratio	7 times
Inventory turnover ratio	4.85 times
Long-term debt to total debt	24%
Debt-to-equity ratio	35%
Net profit ratio	18%
Return on total assets	10%
Interest coverage ratio (times interest earned)	10

As a loan officer of Expo-Impo Bank, you are REQUIRED to apprise the loan proposal on the basis of comparison with industry average of key ratios considering closing balance for accounts receivable of ₹ 6,00,000 and inventories of ₹ 6,40,000 respectively as on 31st March, 2018.

Ans.

(In ₹ '000)

Ratio	Formula	2018-19	2019-20	2020-21	Industry Average
Current Ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	$\frac{1,320}{520}$ = 2.54	$\frac{6,200}{3,456}$ = 1.80	$\frac{8,912}{5,560}$ = 1.60	2.30:1

Acid test ratio (quick ratio)	Quick Assets / Current Liabilities	680 / 520 = 1.31	3, 200 / 3,456 = 0.93	4, 412 / 5,560 = 0.79	1.20:1
Receivable turnover ratio	Credit Sales / Average Accounts Receivable	3,600 / (600+600)/2 = 6	8,640 / (600+ 3,000)/2 = 4.80	14,400 / (3,000+ 4,200)/2 = 4	7 times
Inventory turnover ratio	COGS / Average Inventory	2,480 / (640+640)/2 = 3.88	5,664 / (640+ 3,000)/2 = 3.11	9,600 / (3,000+ 4,500)/2 = 2.56	4.85 times
Long-term debt to total debt	Long term Debt × 100 / Total Debt	1, 472 × 100 / 1,992 = 73.90%	2, 472 × 100 / 5,928 = 41.70%	5, 000 × 100 / 10,560 = 47.35%	24%
Debt-to-equity ratio	Long term Debt ×100 / Shareholders' Equity	1, 472 × 100 / 3,128 = 47.06%	2, 472 × 100 / 5,272 = 46.89%	5, 000 × 100 / 7,752 = 64.50%	35%
Net profit ratio	Net Profit ×100 / Sales	728 × 100 / 4,000 = 18.2%	1, 344 × 100 / 9,600 = 14%	1, 680 × 100 / 16,000 = 10.5%	18%
Return on total assets	Net Profit after taxes ×100 / Total assets	728 × 100 / 5,120 = 14.22%	1, 344 × 100 / 11,200 = 12%	1, 680 × 100 / 18,312 = 9.17%	10%
Interest coverage ratio (times interest earned)	EBIT / Interest	1,160 / 120 = 9.67	2, 236 / 316 = 7.08	3, 080 / 680 = 4.53	10

Conclusion:

In the last two years, the current ratio and quick ratio are less than the ideal ratio (2:1 and 1:1 respectively) indicating that the company is not having enough resources to meet its current obligations. Receivables are growing slower. Inventory turnover is slowing down as well, indicating a relative build-up in inventories or increased investment in stock. High Long-term debt to total debt ratio and Debt to equity ratio compared to that of industry average indicates high dependency on long term debt by the company. The net profit ratio is declining substantially and is much lower than the industry norm. Additionally, though the Return on Total Asset(ROTA) is near to industry average, it is declining as well. The interest coverage ratio measures how many times a company can cover its current interest payment with its available earnings. A high interest coverage ratio means that an enterprise can easily meet its interest obligations, however, it is declining in the case of Jensen & Spencer and is also below the industry average indicating excessive use of debt or inefficient operations.

On overall comparison of the industry average of key ratios than that of Jensen & Spencer, the company is in deterioration position. The company's profitability has declined steadily over the period. However, before jumping to the conclusion relying only on the key ratios, it is pertinent to keep in mind the industry, the company

dealing in with i.e. manufacturing of pharmaceutical drugs. The pharmaceutical industry is one of the major contributors to the economy and is expected to grow further. After the covid situation, people are more cautious towards their health and are going to spend relatively more on health medicines. Thus, while analysing the loan proposal, both the factors, financial and non-financial, needs to be kept in mind.

Q.21 Average Inventory | MTP Dec 21 (1)

ABC Ltd. has total sales of 10,00,000 all of which are credit sales. It has a gross profit ratio of 25% and a current ratio of 2. The company's current liabilities are ₹ 2,00,000. Further, it has inventories of ₹ 80,000, marketable securities of ₹ 50,000 and cash of ₹ 30,000. From the above information:

(i) CALCULATE the average inventory, if the expected inventory turnover ratio is three times?

(ii) Also CALCULATE the average collection period if the opening balance of debtors is expected to be ₹ 1,50,000. Assume 360 days a year.

Ans.

(i) Calculation of Average Inventory

Since gross profit is 25% of sales, the cost of goods sold should be 75% of the sales.

Cost of goods sold = 10,00,000 x 75/100 = 7,50,000

$$\text{Inventory Turnover} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

$$3 = \frac{7,50,000}{\text{Average Inventory}}$$

$$\text{Average Inventory} = \frac{7,50,000}{3} = 2,50,000$$

(ii) Calculation of Average Collection Period

$$\text{Average Collection Period} = \frac{\text{Average Debtors}}{\text{Credit Sales}} \times 360$$

$$\text{Where, Average Debtors} = \frac{\text{Opening Debtors} + \text{Closing Debtors}}{2}$$

Calculation of Closing balance of debtors

	₹	₹
Current Assets (2 x 2,00,000)		4,00,000
Less: Inventories	80,000	
Marketable Securities	50,000	
Cash	30,000	1,60,000
Debtors Closing Balance		**2,40,000**

$$\text{Now, Average Debtors} = \frac{1,50,000 + 2,40,000}{2} = 1,95,000$$

$$\text{So, Average Collection Period} = \frac{1,95,000}{10,00,000} \times 360 = 70.2 \text{ or } 70 \text{ days}$$

Q.22 Prepare B/S | MTP May 21 (1)

SN Ltd. has furnished the following ratios and information relating to the year ended 31 st March 2021:

Share Capital	Rs. 6,25,000
Working Capital	Rs. 2,00,000
Gross Margin	25%
Inventory Turnover	5 times
Average Collection Period	1.5 months
Current Ratio	1.5:1
Quick Ratio	0.7:1
Reserves & Surplus to Bank & Cash	3 times

Further, the assets of the company consist of fixed assets and current assets, while its current liabilities comprise bank credit and others in the ratio of 3:1. Assume 360 days in a year.

You are required to PREPARE the Balance Sheet as on 31st March 2021.

(Note- Balance sheet may be prepared in traditional T Format.)

Ans. **Workings:**

1. Current Ratio $= \frac{\text{Current Assets(CA)}}{\text{Current Liabilities(CL)}} = \frac{15}{1}$

CA = 1.5 CL

Also, CA - CL = Rs. 2,00,000

1.5 CL- CL = Rs. 2,00,000

$CL = \frac{\text{Rs. 2,00,000}}{0.5} = \text{Rs. 4,00,000}$

CA = 1.5 × Rs. 4,00,000 = Rs. 6,00,000

2. Bank Credit (BC) to Other Current Liabilities (OCL) ratio = 3:1

$\frac{\text{Bank Credit (BC)}}{\text{Other Current Liabilities (OCL)}} = \frac{3}{1}$

BC = 3 OCL Also, BC + OCL = CL

3 OCL + OCL = Rs. 4,00,000

$OCL = \frac{\text{Rs. 4,00,000}}{4} = \text{Rs. 1,00,000}$

Bank Credit = 3 × Rs. 1,00,000 = Rs. 3,00,000

3. Quick Ratio $= \frac{\text{Current Assets - Inventories}}{\text{Current Liabilities}}$

$$0.7 = \frac{\text{Rs. } 6,00,000 - \text{Inventories}}{\text{Rs. } 4,00,000}$$

Inventories = Rs. 6,00,000 – Rs. 2,80,000 = Rs. 3,20,000

4. Inventory Turnover = 5 times

$$\text{Inventory Turnover} = \frac{\text{Cost of goods sold (COGS)}}{\text{Average Inventory}}$$

$$\text{Average Inventory} = \frac{\text{Cost of goods sold (COGS)}}{\text{Inventory Turnover}}$$

COGS = Rs. 3,20,000 × 5 = Rs. 16,00,000

5. $$\text{Gross Margin} = \frac{\text{Sales} - \text{COGS}}{25\% \text{ Sales}} \times 100 =$$

$$\text{Sales} = \frac{16,00,000}{0.75} = \text{Rs. } 21,33,333.33$$

6. Average Collection Period (ACP) = 1.5 months = 45 days

$$\text{Debtors Turnover} = \frac{360}{\text{ACP}} = \frac{360}{45} = 8 \text{ times}$$

$$\text{Also, Debtors Turnover} = \frac{\text{Sales}}{\text{Average Debtors}}$$

$$\text{Hence, Debtors} = \frac{\text{Rs.}21,33,333.33}{8} = \text{Rs.}2,66,667$$

Q.23 Prepare B/S | MTP Nov 18 (2)

From the following information, PREPARE a summarised Balance Sheet as at 31st March, 20X6:

Working Capital	Rs.2,40,000
Bank overdraft	Rs.40,000
Fixed Assets to Proprietary ratio	0.75
Reserves and Surplus	Rs.1,60,000
Current ratio	2.5
Liquid ratio	1.5

Ans. **Working notes:**

(i) Current assets and Current liabilities computation:

$$\frac{\text{Current assets}}{\text{Current liabilities}} = \frac{2.5}{1}$$

$$\text{Or, } \frac{\text{Current assets}}{2.5} = \frac{\text{Current liabilities}}{1} = \text{k (say)}$$

Or, Current Assets = 2.5 k and Current Liabilities = k

Or, Working capital = (Current Assets − Current Liabilities) Or, Rs.2,40,000 = k (2.5 − 1) = 1.5 k

Or, k = Rs.1,60,000

Current Liabilities = Rs. 1,60,000

Current Assets = Rs.1,60,000 × 2.5 = Rs.4,00,000

(ii) Computation of stock

$$\text{Liquid ratio} = \frac{\text{Liquid assets}}{\text{Current liabilities}}$$

$$\text{Or, } 1.5 = \frac{\text{Current Assets - Stock}}{\text{Rs.1,60,000}}$$

Or, 1.5 × Rs.1,60,000 = Rs.4,00,000 − Stock

Or, Stock = Rs.1,60,000

(iii) Computation of Proprietary fund; Fixed assets; Capital and Sundry payables (creditors)

$$\text{Proprietary ratio} = \frac{\text{Fixed assets}}{\text{Proprietary fund}} = 0.75$$

Fixed assets = 0.75 Proprietary fund

And Net working capital = 0.25 Proprietary fund

Or, Rs.2,40,000/0.25 = Proprietary fund

Or, Proprietary fund = Rs.9,60,000

And Fixed assets = 0.75 proprietary fund

= 0.75 x Rs.9,60,000

= Rs.7,20,000

Equity Capital = Proprietary fund - Reserves & Surplus

= Rs.9,60,000 - Rs.1,60,000

= Rs.8,00,000

Sundry payables (creditors) = (Current liabilities − Bank overdraft)

= (Rs.1,60,000 − Rs.40,000) = Rs.1,20,000

Balance Sheet

Liabilities	(Rs.)	Assets	(Rs.)
Equity Capital	8,00,000	Fixed assets	7,20,000
Reserves & Surplus	1,60,000	Stock	1,60,000
Bank overdraft	40,000	Current assets	2,40,000
Sundry payables	1,20,000		
	11,20,000		11,20,000

Q.24 Debtor / Creditor | MTP Nov 18 (1)

Following information relate to a concern:

Debtors Velocity	3 months
Credits Velocity	2 months
Stock Turnover Ratio	1.5
Gross Profit Ratio	25%

Bills Receivables	Rs. 25,000
Bills Payables	Rs. 10,000
Gross Profit	Rs. 4,00,000
Fixed Assets to turnover Ratio	4

Closing stock of the period is Rs. 10,000 above the opening stock. CALCULATE

(i) Sales and cost of goods sold
(ii) Sundry Debtors
(iii) Sundry Creditors
(iv) Closing Stock
(v) Fixed Assets

Ans.

(i) Determination of Sales and Cost of goods sold:

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

$$\text{Or, } \frac{25}{100} = \frac{\text{Rs.4, 00, 000}}{\text{Sales}}$$

$$\text{Or, Sales} = \frac{\text{Rs.4, 00, 000}}{25} = \text{Rs. 16,00,000}$$

Cost of Goods Sold = Sales – Gross Profit
= Rs. 16,00,000 - Rs. 4,00,000 = Rs. 12,00,000

(ii) Determination of Sundry Debtors:

Debtors velocity is 3 months or Debtors' collection period is 3 months,

$$\text{So, Debtors' turnover ratio} = \frac{12\text{months}}{3\text{months}} = 4$$

$$\text{Debtors' turnover ratio} = \frac{\text{Credit Sales}}{\text{Average Accounts Receivable}}$$

$$= \frac{\text{Rs.16,00,0 00}}{\text{Bills Receivable + Sundry Debtors}} = 4$$

Or, Sundry Debtors + Bills receivable = Rs. 4,00,000
Sundry Debtors = Rs. 4,00,000 – Rs. 25,000 = Rs. 3,75,000

(iii) Determination of Sundry Creditors:

Creditors velocity of 2 months or credit payment period is 2 months.

$$\text{So, Creditors' turnover ratio} = \frac{12\text{months}}{2\text{months}} = 6$$

$$\text{Creditors turnover ratio} = \frac{\text{Credit Purchases *}}{\text{Average Accounts Payables}}$$

$$= \frac{\text{Rs.12,10,0 00}}{\text{Sundry Creditors + Bills Payables}} = 6$$

So, Sundry Creditors + Bills Payable = Rs. 2,01,667
Or, Sundry Creditors + Rs. 10,000 = Rs. 2,01,667
Or, Sundry Creditors = Rs. 2,01,667 – Rs. 10,000 = Rs. 1,91,667

(iv) Closing Stock

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}} = \frac{\text{Rs.12,00,0 00}}{\text{Average Stock}} = 1.5$$

So, Average Stock = Rs. 8,00,000

$$\text{Now Average Stock} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

$$\text{Or} \quad \frac{\text{Opening Stock} + (\text{Opening Stock} + \text{Rs.10, 000})}{2} = \text{Rs. 8,00,000}$$

Or, Opening Stock = Rs. 7,95,000

So, Closing Stock= Rs. 7,95,000 + Rs. 10,000 = Rs. 8,05,000

(v) Calculation of Fixed Assets

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Fixed Assets}} = 4$$

$$\text{Or,} \quad \frac{\text{Rs.12,00,0 00}}{\text{Fixed Assets}} = 4$$

Or, Fixed Asset = Rs. 3,00,000

Workings:

***Calculation of Credit purchases:**

Cost of goods sold = Opening stock + Purchases – Closing stock

Rs. 12,00,000 = Rs. 7,95,000 + Purchases – Rs. 8,05,000

Rs. 12,00,000 + Rs. 10,000 = Purchases Rs. 12,10,000 = Purchases (credit).

Assumption:

(i) All sales are credit sales

(ii) All purchases are credit purchase

(iii) Stock Turnover Ratio and Fixed Asset Turnover Ratio may be calculated either on Sales or on Cost of Goods Sold.

Q.25 All Ratios | ICAI MAT

In a meeting held at Solan towards the end of 2021-22, the Directors of HPCL Ltd. have taken a decision to diversify. At present HPCL Ltd. sells all finished goods from its own warehouse. The company issued debentures on 01. 04.2022 and purchased fixed assets on the same day. The purchase prices have remained stable during the concerned period. Following information is provided to you:

INCOME STATEMENT

Particulars	*2021-22 (₹)*		*2022-23 (₹)*	
Cash Sales	*30,000*		*32,000*	
Credit Sales	*2,70,000*	*3,00,000*	*3,42,000*	*3,74,000*
Less: Cost of goods sold		*2,36,000*		*2,98,000*
Gross profit		*64,000*		*76,000*
Less: Operating Expenses:				
Warehousing	*13,000*		*14,000*	
Transport	*6,000*		*10,000*	

Administrative	19,000		19,000	
Selling	11,000	49,000	14,000	57,000
Net Profit		15,000		19,000

BALANCE SHEET

Assets & Liabilities	2021-22 (₹)		2022-23 (₹)	
Fixed Assets (Net Block)	-	30,000	-	40,000
Receivables	50,000		82,000	
Cash at Bank	10,000		7,000	
Stock	60,000		94,000	
Total Current Assets (CA)	1,20,000		1,83,000	
Payables	50,000		76,000	
Total Current Liabilities (CL)	50,000		76,000	
Working Capital (CA - CL)		70,000		1,07,000
Net Assets		1,00,000		1,47,000
Represented by:				
Share Capital		75,000		75,000
Reserve and Surplus		25,000		42,000
Debentures		-		30,000
		1,00,000		1,47,000

You are required to CALCULATE the following ratios for the years 2021-22 and 2022-23:

(i) Gross Profit Ratio
(ii) Operating Expenses to Sales Ratio
(iii) Operating Profit Ratio
(iv) Capital Turnover Ratio
(v) Stock Turnover Ratio
(vi) Net Profit to Net Worth Ratio
(vii) Receivables Collection Period

Ratio relating to capital employed should be based on the capital at the end of the year. Give the reasons for change in the ratios for 2 years. Assume opening stock of ₹ 40,000 for the year 2021-22. Ignore Taxation.

Ans.

Computation of Ratios		
Ratio	**2021-22 (₹)**	**2022-23 (₹)**
1. Gross profit ratio (Gross profit/sales)	$\frac{64,000 \times 100}{3,00,000}$ =21.3%	$\frac{76,000 \times 100}{3,74,000}$ =20.3%
2. Operating expense to sales ratio (Operating exp/ Total sales)	$\frac{49,000 \times 100}{3,00,000}$ =16.3%	$\frac{57,000 \times 100}{3,74,000}$ =15.2%
3. Operating profit ratio (Operating profit/ Total sales)	$\frac{15,000 \times 100}{3,00,000}$ = 5%	$\frac{19,000 \times 100}{3,74,000}$ =5.08%
4. Capital turnover ratio (Sales/capital employed)	$\frac{3,00,000}{1,00,000}$ = 3	$\frac{3,74,000}{1,47,000}$ = 2.54

5. Stock turnover ratio (COGS/ Average stock) (Refer to W.N. 1)	2,36,000 / 50,000 = 4.72	2,98,000 / 77,000 = 3.87
6. Net Profit to Net worth ratio (Net profit / Net worth)	15,000 x100 / 1,00,000 = 15%	19,000×100 / 1,17,000 =16.24%
7. Receivables collection period (Average receivables/Average daily credit sales) (Refer to W.N. 2)	50,000 / 739.73 = 67.6 days	82,000 / 936.99 = 87.5 days
Working notes (W.N.):		
1. Average Stock = (opening stock + closing stock)/2	(40,000 + 60,000)/2 = 50,000	(60,000 + 94,000)/2 = 77,000
2. Average daily sales = Credit sales / 365	2,70,000 / 365 = 739.73	3,42,000 / 365 = 936.99

Analysis: The decline in the Gross profit ratio could be either due to a reduction in the selling price or increase in the direct expenses (since the purchase price has remained the same). In this case, cost of goods sold have increased more than proportion of increment in sales & hence impacting gross profit ratio.

Similarly, there is a decline in the ratio of operating expenses to sales. Further analysis reveals that in comparison to increase in sales, there has a lesser proportionate increase in operating expenses. As a result, even the operating profit ratio has remained the same approximately in spite of a decline in the Gross profit ratio.

The company has not been able to deploy its capital efficiently. This is indicated by a decline in the Capital turnover ratio from 3 to 2.54 times.

The decline in stock turnover ratio implies that the company has increased its investment in stock. Net Profit to Net worth ratio has increased indicating that the company's Net worth or Shareholders' capital is efficient in generating profits.

The increase in the Receivables collection period indicates that the company has become liberal in extending credit on sales. There is a corresponding increase in the receivables also due to such credit policy.

Q.26 All Ratios | ICAI MAT

Following is the abridged Balance Sheet of Alpha Ltd.:

Liabilities	₹	Assets	₹	₹
Share Capital	1,00,000	Land and Buildings		80,000
Profit and Loss Account	17,000	Plant and Machineries	50,000	
Current Liabilities	40,000	Less: Depreciation	15,000	35,000
				1,15,000
		Stock	21,000	
		Receivables	20,000	
		Bank	1,000	42,000

Total	1,57,000	Total		1,57,000

With the help of the additional information furnished below, you are required to

PREPARE Trading and Profit & Loss Account and Balance Sheet as at 31st March, 2023:

(i) The company went in for re-organisation of capital structure, with share capital remaining the same as follows:

Share capital	50%
Other Shareholders' funds	15%
5% Debentures	10%
Current Liabilities	25%

Debentures were issued on 1st April, interest being paid annually on 31st March.

(ii) Land and Buildings remained unchanged. Additional plant and machinery has been bought and a further ₹ 5,000 depreciation was written off.
(The total fixed assets then constituted 60% of total fixed and current assets.)

(iii) Working capital ratio was 8 : 5.

(iv) Quick assets ratio was 1 : 1.

(v) The receivables (four-fifth of the quick assets) to sales ratio revealed a credit period of 2 months. There were no cash sales.

(vi) Return on net worth was 10%.

(vii) Gross profit was at the rate of 15% of selling price. (viii) Stock turnover was eight times for the year. Ignore Taxation.

Ans.

Particulars	%	(₹)
Share capital (given to be same)	50%	1,00,000
Other shareholders funds	15%	30,000
5% Debentures	10%	20,000
Current Liabilities	25%	50,000
Total (1,00,000 / 50%)	100%	2,00,000

Calculation of Assets

Total liabilities	=	Total Assets
₹ 2,00,000	=	Total Assets
Fixed Assets	=	60% of total fixed assets and current assets
	=	₹ 2,00,000 × 60/100 = ₹ 1,20,000
Current Assets	=	Total Assets – Fixed Assets
	=	₹ 2,00,000 – ₹ 1,20,000 = ₹ 80,000

Calculation of additions to Plant & Machinery

	₹
Total fixed assets	1,20,000
Less: Land & Buildings	80,000
Plant and Machinery (after providing depreciation)	40,000
Less: Existing Plant & Machinery (after extra	30,000

depreciation of ₹ 5,000) i.e. 50,000 – 20,000	
Addition to the Plant & Machinery	10,000

Calculation of stock

Quick ratio: $= \frac{\text{Current assets} - \text{stock}}{\text{Current liabilities}} = 1$

$= \frac{`80,000 - \text{stock}}{50,000} = 1$

₹ 50,000 = ₹ 80,000 – Stock

Stock = ₹ 80,000 - ₹ 50,000

= ₹ 30,000

Receivables = 4/5th of quick assets

= (₹ 80,000 – ₹ 30,000) x 4/5

= ₹ 40,000

Receivables turnover $= \frac{\text{Receivables}}{\text{Credit Sales}} \times 12\text{Months} = 2 \text{ months}$

$= \frac{40,000 \times 12}{\text{Credit Sales}} = 2 \text{ months}$

2×credit sales = 4,80,000

Credit sales = 4,80,000/2

= ₹ 2,40,000 = Total Sales (As there were no cash sales)

Gross profit = 15% of sales = ₹ 2,40,000 x 15/100 = ₹ 36,000

Return on net worth (net profit)

Net worth = ₹ 1,00,000 + ₹ 30,000

= ₹ 1,30,000

Net profit = ₹ 1,30,000 x 10/100 = ₹ 13,000

Debenture interest = ₹ 20,000 x 5/100 = ₹ 1,000

Projected profit and loss account for the year ended 31st March, 2023

Particulars	₹	Particulars	₹
To cost of goods sold	2,04,000	By sales	2,40,000
To gross profit	36,000		
	2,40,000		2,40,000
To debenture interest	1,000	By gross profit	36,000
To administration and other expenses (bal. fig.)	22,000		
To net profit	13,000		
	36,000		36,000

Projected Balance Sheet as at 31st March, 2023

Liabilities	₹	Assets		₹

Share capital	1,00,000	Fixed assets:		
Profit and loss A/c	30,000	Land & buildings		80,000
(17,000+13,000)		Plant & machinery	60,000	
5% Debentures	20,000	*Less*: Depreciation	20,000	40,000
Current liabilities	50,000	Current assets		
		Stock	30,000	
		Receivables	40,000	
		Bank	10,000	
				80,000
	2,00,000			2,00,000

Q.27 Balance Sheet | ICAI MAT

From the following ratios and information given below, PREPARE Trading Account, Profit and Loss Account and Balance Sheet of Aebece Company:

Fixed Assets	₹ 40,00,000
Closing Stock	₹ 4,00,000
Stock turnover ratio	10
Gross profit ratio	25 percent
Net profit ratio	20 percent
Net profit to capital	1/5
Capital to total liabilities	1/2
Fixed assets to capital	5/4
Fixed assets/Total current assets	5/7

Ans. **Workings:**

(i) $\frac{\text{Fixed Assets}}{\text{Total Current Assets}} = \frac{5}{7}$

Or, Total Current Assets = $\frac{40,00,000 \times 7}{5}$ = ₹ 56,00,000

(ii) $\frac{\text{Fixed Assets}}{\text{Capital}} = \frac{5}{4}$

Or, Capital = $\frac{40,00,000 \times 4}{5}$ = ₹ 32,00,000

(iii) $\frac{\text{Capital}}{\text{Total Liabilities}^*} = \frac{1}{2}$

Or, Total liabilities = ₹ 32,00,000 × 2 = ₹ 64,00,000

*It is assumed that total liabilities do not include capital.

(iv) $\frac{\text{Net Profit}}{\text{Capital}} = \frac{1}{5}$

Or, Net Profit = ₹ 32,00,000 × 1/5 = ₹ 6,40,000

(v) $\frac{\text{Net Profit}}{\text{Sales}} = \frac{1}{5}$

Or, Sales = ₹ 6,40,000 × 5 = ₹ 32,00,000

(vi) Gross Profit = 25% of ₹ 32,00,000 = ₹ 8,00,000

(vii) Stock Turnover $= \frac{\text{Costof Goods Sold } (\text{i.e. Sales } - \text{ Gross profit})}{\text{Average Stock}} = 10$

$= \frac{32,00,000 - ` 8,00,000}{\text{Average Stock}} = 10$

Or, Average Stock = ₹ 2,40,000

Or, $\frac{\text{Opening Stock} + ` 4,00,000}{2}$ = ₹ 2,40,000

Or, Opening Stock = ₹ 80,000

Trading Account

Particulars	(₹)	Particulars	(₹)
To Opening Stock	80,000	By Sales	32,00,000
To Manufacturing exp./ Purchase (Balancing figure)	27,20,000		
To Gross Profit b/d	8,00,000	By Closing Stock	4,00,000
	36,00,000		36,00,000

Profit and Loss Account

Particulars	(₹)	Particulars	(₹)
To Operating Expenses (Balancing figure)	1,60,000	By Gross Profit c/d	8,00,000
To Net Profit	6,40,000		
	8,00,000		8,00,000

Balance Sheet

Capital and Liabilities	(₹)	Assets	(₹)
Capital	32,00,000	Fixed Assets	40,00,000
Liabilities	64,00,000	Current Assets:	
		Closing Stock	4,00,000
		Other Current Assets (Bal. figure)	52,00,000
	96,00,000		96,00,000

Q.28 All Ratios | ICAI MAT

Following information are available for Navya Ltd. along with various ratios relevant to the particular industry it belongs to. APPRAISE your comments on strength and weakness of Navya Ltd. comparing its ratios with the given industry norms.

Navya Ltd.

Balance Sheet as at 31.3.2023

Liabilities	(₹)	*Assets*	(₹)
Equity Share Capital	48,00,000	Fixed Assets	24,20,000
10% Debentures	9,20,000	Cash	8,80,000
Sundry Creditors	6,60,000	Sundry debtors	11,00,000
Bills Payable	8,80,000	Stock	33,00,000
Other current Liabilities	4,40,000		-
Total	77,00,000	Total	77,00,000

Statement of Profitability
For the year ending 31.3.2023

Particulars	(₹)	(₹)
Sales		1,10,00,000
Less: Cost of goods sold: Material	41,80,000	
Wages	26,40,000	
Factory Overhead	12,98,000	81,18,000
Gross Profit		28,82,000
Less: Selling and Distribution Cost	11,00,000	
Administrative Cost	12,28,000	23,28,000
Earnings before Interest and Taxes		5,54,000
Less: Interest Charges		92,000
Earning before Tax		4,62,000
Less: Taxes @ 50%		2,31,000
Net Profit (PAT)		2,31,000

Industry Norms

Ratios	*Norm*
Current Ratio	*2.5*
Receivables Turnover Ratio	*8.0*
Inventory Turnover Ratio (based on Sales)	*9.0*
Total Assets Turnover Ratio	*2.0*
Net Profit Ratio	*3.5%*
Return on Total Assets (on EBIT)	*7.0%*
Return on Net worth (Based on Net profit)	*10.5%*
Total Debt/Total Assets	*60.0%*

Ans.

Ratios	Navya Ltd.	Industry Norms
1. Current Ratio = $\frac{\text{Current Ass}}{\text{Current Liabilities}}$	$\frac{₹52,80,000}{₹19,80,000}$ = 2.67	2.50
2 Receivable Turnover Ratio = $\frac{\text{Sales}}{\text{Debtors}}$	$\frac{₹1,10,00,000}{₹11,00,000}$ =10.0	8.00
3. Inventory turnover ratio = $\frac{\text{Sales}}{\text{Stock}}$	$\frac{₹1,10,00,000}{₹33,00,000}$ = 3.33	9.00
4. Total Asset Turn over ratio = $\frac{\text{Sales}}{}$	$\frac{₹1,10,00,000}{}$ =1.43	2.00

	Total Assets	₹77,00,000	
5 Net Profit Ratio = Net Profit / Sales	₹2,31,000 / ₹1,10,00,000	= 2.10%	3.50%
6. Return on Total Asset = EBIT / Total Assets	₹5,54,000 / ₹77,00,000	= 7.19%	7%
7. Return on Net worth = Net Profit / Net Worth	₹2,31,000 / ₹48,00,000	= 4.81%	10.5%
8. Total Debt / Total Assets	₹29,00,000 / ₹77,00,000	= 37.66%	60%

Comments:

1. The position of Navya Ltd. is better than the industry norm with respect to Current Ratio and Receivables Turnover Ratio.
2. However, the Inventory turnover ratio and Total Asset Turnover ratio is poor comparing to industry norm indicating that company is inefficient to utilize its inventory and assets.
3. The firm also has its net profit ratio and return on net worth ratio much lower than the industry norm.
4. Total debt to total assets ratio is lower that the industry standard which suggests that the firm is less levered by debt and more by equity resulting in less risky company.

Q.29 Balance Sheet | ICAI MAT

Ganpati Limited has furnished the following ratios and information relating to the year ended 31st March, 2023:

Sales	₹ 60,00,000
Return on net worth	25%
Rate of income tax	50%
Share capital to reserves	7:3
Current ratio	2
Net profit to sales	6.25%
Inventory turnover (based on cost of goods sold)	12
Cost of goods sold	₹ 18,00,000
Interest on debentures	₹ 60,000
Receivables	₹ 2,00,000
Payables	₹ 2,00,000

You are required to:

(a) CALCULATE the operating expenses for the year ended 31st March, 2023.

(b) PREPARE a Balance Sheet as on 31st March, 2023 in the following format:

Balance Sheet as on 31st March, 2023

Liabilities	₹	Assets	₹
Share Capital		Fixed Assets	
Reserve and Surplus		Current Assets	
15% Debentures		Stock	
Payables		Receivables	
		Cash	

Ans. **(a)** **Calculation of Operating Expenses for the year ended 31st March, 2023**

		(₹)
Net Profit [@ 6.25% of Sales]		3,75,000
Add: Income Tax (@ 50%)		3,75,000
Profit Before Tax (PBT)		7,50,000
Add: Debenture Interest		60,000
Profit before interest and tax (PBIT)		8,10,000
Sales		60,00,000
Less: Cost of goods sold	18,00,000	
PBIT	8,10,000	26,10,000
Operating Expenses		33,90,000

(b) **Balance Sheet as on 31st March, 2023**

Liabilities	₹	**Assets**	₹
Share Capital	10,50,000	Fixed Assets	17,00,000
Reserve and Surplus	4,50,000	Current Assets:	
15% Debentures	4,00,000	Stock	1,50,000
Payables	2,00,000	Receivables	2,00,000
		Cash	50,000
	21,00,000		21,00,000

Working Notes:

(i) Share Capital and Reserves and Surplus

The return on net worth is 25%. Therefore, the profit after tax of ₹ 3,75,000 should be equivalent to 25% of the net worth.

Net worth x $\frac{25}{100}$ = ₹ 3,75,000

Net worth = $\frac{3,75,000}{25}$ × 100 = ₹ 15,00,000

The ratio of share capital to reserves is 7:3

Share Capital = 15,00,000 x $\frac{7}{10}$ = ₹ 10,50,000

Reserves and Surplus = 15,00,000 $\frac{3}{10}$ = ₹ 4,50,000

(ii) Debentures

Interest on Debentures @ 15% = ₹ 60,000

Debentures = $\frac{60,000 \times 100}{15}$ = ₹ 4,00,000

(iii) Current Assets

Current Ratio = 2
Payables = ₹ 2,00,000
Current Assets = 2 Current Liabilities = 2 x 2,00,000 = ₹ 4,00,000

(iv) Fixed Assets

	₹
Share capital	10,50,000
Reserves and Surplus	4,50,000
Debentures	4,00,000
Payables	2,00,000
	21,00,000
Less: Current Assets	4,00,000
Fixed Assets	17,00,000

(v) Composition of Current Assets

Inventory Turnover = 12 $\frac{\text{Cost of goods sold}}{\text{Closing stock}} = 12$

Closing stock = $\frac{18,\ 00,\ 000}{12}$ = ₹ 1,50,000

Composition	₹
Stock	1,50,000
Receivables	2,00,000
Cash (balancing figure)	50,000
Total Current Assets	4,00,000

Q.30 All Ratios | ICAI MAT

Manan Pvt. Ltd. gives you the following information relating to the year ending 31st March, 2023:

(1)	Current Ratio	2.5 : 1
(2)	Debt-Equity Ratio	1 : 1.5
(3)	Return on Total Assets (After Tax)	15%
(4)	Total Assets Turnover Ratio	2
(5)	Gross Profit Ratio	20%
(6)	Stock Turnover Ratio	7
(7)	Net Working Capital	₹ 13,50,000
(8)	Fixed Assets	₹ 30,00,000
(9)	1,80,000 Equity Shares of	₹ 10 each
(10)	60,000, 9% Preference Shares of	₹ 10 each
(11)	Opening Stock	₹ 11,40,000

You are required to CALCULATE:

(a) Quick Ratio

(b) Fixed Assets Turnover Ratio

(c) Proprietary Ratio
(d) Earnings per Share

Ans. **Workings Notes:**

(i) Computation of Current Assets & Current Liabilities & Total Assets

Net Working Capital = Current Assets – Current Liabilities
= 2.5 – 1 = 1.5

Thus, Current Assets = $\frac{\text{NetWorking Capital} \times 2.5}{1.5} = \frac{13,50,000 \times 25}{1.5}$
= ₹ 22,50,000

Current Liabilities (CL) = ₹ 22,50,000 – ₹ 13,50,000 = ₹ 9,00,000

Total Assets = Current Assets + Fixed Assets
= ₹ 22,50,000 + ₹ 30,00,000 = ₹ 52,50,000

(ii) Computation of Sales & Cost of Goods Sold

Sales = Total Assets Turnover × Total Assets
= 2 x (Fixed Assets + Current Assets)
= 2 × (₹ 30,00,000 + ₹ 22,50,000)
= ₹ 1,05,00,000

Cost of Goods Sold = (100% – 20%) of Sales = 80% of Sales
= 80% × ₹ 1,05,00,000 = ₹ 84,00,000

(iii) Computation of Stock & Quick Assets

Average Stock = $\frac{\text{Cost of Good Sold}}{\text{Stock Turnover Ratio}} = \frac{84,00,000}{7}$
= 12,00,000

Closing Stock = (Average Stock × 2) – Opening Stock
= (₹ 12,00,000 × 2) – ₹ 11,40,000
= ₹ 12,60,000

Quick Assets = Current Assets – Closing Stock
= ₹ 22,50,000 – ₹ 12,60,000 = ₹ 9,90,000

(iv) Computation of Proprietary Fund

Debt-Equity Ratio = $\frac{\text{Debt}}{\text{Equity}} = \frac{1}{1.5}$

Or, Equity = 1.5 Debt

Total Assets = Equity + Preference capital + Debt + CL

₹ 52,50,000 = 1.5 Debt+ ₹ 6,00,000 + Debt + ₹ 9,00,000

Thus, Debt = $\frac{37,50,000}{2.5}$ = ₹ 15,00,000

Equity = ₹ 15,00,000 × 1.5
= ₹ 22,50,000

So, Proprietary Fund = Equity + Preference Capital
= ₹ 22,50,000 + ₹ 6,00,000
= ₹ 28,50,000

(v) Computation of Profit after tax (PAT)

= Total Assets × Return on Total Assets
= ₹ 52,50,000 × 15%
= ₹ 7,87,500

(a) Quick Ratio

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}} = \frac{9,90,000}{9,00,000} = 1.1$$

(b) Fixed Assets Turnover Ratio

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Fixed Assets}} = \frac{1,\ 05,\ 00,\ 000}{30,00,000} = 3.5$$

(c) Proprietary Ratio

$$\text{Proprietary Ratio} = \frac{\text{Proprietary fund}}{\text{Total Assets}} = \frac{28,50,000}{52,50,000} = 0.54$$

(d) Earnings per Equity Share (EPS)

$$\text{Earnings per Equity Share} = \frac{\text{PAT} - \text{Preference Share Dividend}}{\text{Number of Equity Shares}}$$

$$= \frac{`7,\ 87,500 - `54,\ 000\ (9\%\ \text{of}\ `6,\ 00,\ 000)}{1,80,000}$$

= ₹ 4.075 per share

Q.31

Theme Ltd provides you the following information:

12.5 % Debt	₹ 45,00,000
Debt to Equity ratio	1.5 : 1
Return on Shareholder's fund	54%
Operating Ratio	85%
Ratio of operating expenses to Cost of Goods sold	2 : 6
Tax rate	25%
Fixed Assets	₹ 39,00,000
Current Ratio	1.8 : 1

You are required to calculate:

(i) Interest Coverage Ratio
(ii) Gross Profit Ratio
(iii) Current Assets

Ans.

Working Notes:

Debt = ₹ 45,00,000

Interest = ₹ 45,00,000 x 12.5%= 5,62,500

$$\text{Debt to Equity} = 1.5{:}1 = \frac{\text{Total Debt}}{\text{Shareholders' Equity}}$$

Equity = ₹ 30,00,000

$$\text{Return of Shareholder's funds} = 54\% = \frac{\text{Net Profit after taxes}}{\text{Equity shareholders' fund}} \times 100$$

Profit after tax (PAT)		= 54% x Equity = ₹16,20,000
Profit before tax (PBT)(1-25%)		= Profit after tax
		= ₹16,20,000/75% = ₹21,60,000
Earning before interest and tax (EBIT)		= PBT + Interest
		= ₹21,60,000 + ₹ 5,62,500
		= ₹27,22,500
(i)	Interest Coverage Ratio	= EBIT/Interest
		= ₹27,22,500/₹5,62,500
		= 4.84 Times
(ii)	Operating Profit Ratio	= 1 - Operating Ratio
		= 1 – 0.85 = 0.15 or 15%
	0.15	$= \frac{\text{Operating Profit}}{\text{Sales}} \times 100$
	Sales	= EBIT or Operating Profit /0.15
		= ₹ 27,22,500 / 0.15
		= ₹ 1,81,50,000
	Operating ratio	$= \frac{\text{Operating expenses}}{\text{Cost of goods sold}\,(COGS)} = 2:6 = 1:3$
	Operating expenses	= 1/3COGS
	Operating cost	= Sales – Operating profit
		= ₹ 1,81,50,000 - ₹ 27,22,500
		= ₹ 1,54,27,500
	₹ 1,54,27,500	= COGS + Operating expenses
	₹ 1,54,27,500	= COGS + 1/3COGS
	COGS	= ₹ 1,15,70,625
	Gross profit	= Sales - COGS
		= 1,81,50,000 – 1,15,70,625
		= ₹ 65,79,375
	Gross Profit ratio	$= \frac{\text{Gross Profit}}{\text{Sales}} \times 100$
		= 65,79,375/1,81,50,000
		= **0.3625 or 36.25%**

Gross profit and sales can be calculated in alternative way also. However, there will be no change in GP ratio i.e 36.25%

(iii)	Current Ratio	$= \frac{\text{Current Assets}}{\text{Current Liabilities}}$
		= 1.8
	Current Assets	= 1.8 Current Liabilities
	Total of Balance sheet liability	= Equity + Debt + Current Liabilities
		=30,00,000+45,00,000+CL……(2)
	Total Balance sheet asset	= Fixed Assets + Current Assets
		= 39 lakhs + CA= 39 + 1.8CL (3)
	Equating 2 and 3,	
	75,00,000 + CL	= 39,00,000 + 1.8CL
	0.8CL	= 36,00,000

CL	=₹ 45,00,000
Current Assets	= 1.8 CL = 1.8 x 45 lakhs= **₹ 81,00,000**

Q.32 MTP Sept 24 (2)

EPL Ltd. has furnished the following information relating to the year ended 31st March 2023 and 31st March, 2024:

	31st March, 2023	31st March, 2024
Share Capital	50,00,000	50,00,000
Reserve and Surplus	20,00,000	25,00,000
Long term loan	30,00,000	30,00,000

- Net profit ratio: 8%
- Gross profit ratio: 20%
- Long-term loan has been used to finance 40% of the fixed assets.
- Stock turnover with respect to cost of goods sold is 4.
- Debtors represent 90 days sales.
- The company holds cash equivalent to $1\frac{1}{2}$ months cost of goods sold.
- Ignore taxation and assume 360 days in a year.

You are required to PREPARE Balance Sheet as on 31st March 2024 in following format:

Liabilities	(₹)	Assets	(₹)
Share Capital	-	Fixed Assets	-
Reserve and Surplus	-	Sundry Debtors	-
Long-term loan	-	Closing Stock	-
Sundry Creditors	-	Cash in hand	-

Ans.

Change in Reserve & Surplus = ₹ 25, 00,000 - ₹ 20,00,000 = ₹ 5,00,000

So, Net profit = ₹ 5, 00,000

(i) Net Profit Ratio = 8%

$\therefore$ Sales = $\frac{5,00,000}{8\%}$ =₹ 62, 50, 000

(ii) Cost of Goods sold

= Sales – Gross profit Margin

= ₹ 62, 50,000 – 20% of ₹ 62, 50,000

= ₹ 50, 00,000

(iii) Fixed Assets = $\frac{30,00,000}{40\%}$ =₹ 75, 00, 000

(iv) Stock = $\frac{\text{Costof Goods Sold}}{\text{STR}} = \frac{50,00,000}{4}$ = = ₹12, 50, 000

(v) Debtors = $\frac{62,50,000}{360}$ × 90 = ₹15, 62, 500

(vi) Cash Equivalent = $\frac{50,00,000}{12}$ ×1.5 = ₹ 6, 25, 000

Balance Sheet as on 31st March 2024

Liabilities	(₹)	Assets	(₹)
Share Capital	50,00,000	Fixed Assets	75,00,000
Reserve and Surplus	25,00,000	Sundry Debtors	15,62,500
Long-term loan	30,00,000	Closing Stock	12,50,000

Sundry Creditors (Balancing Figure)	4,37,500	Cash in hand	6,25,000
	1,09,37,500		1,09,37,500

Q.33 MTP Jan 25 (2)

The financial statement and operating results of Alpha Limited revealed the following position as on 31st March, 2023:

- Equity share capital (Rs. 10 fully paid share) — Rs. 20,00,000
- Working capital — Rs. 6,00,000
- Bank overdraft — Rs. 1,00,000
- Current ratio — 2.5 : 1
- Liquidity ratio — 1.5 : 1
- Proprietary ratio (Net fixed assets/Proprietary fund) — .75 : 1
- Cost of sales — Rs. 14,40,000
- Debtors velocity — 2 months
- Stock turnover based on cost of sales — 4 times
- Gross profit ratio — 20% of sales
- Net profit ratio — 15% of sales

Closing stock was 25% higher than the opening stock. There were also free reserves brought forward from earlier years. Current assets include stock, debtors and cash only. The current liabilities expect bank overdraft treated as creditors.

Expenses include depreciation of Rs. 90,000.

The following information was collected from the records for the year ended 31st March, 2024:

- Total sales for the year were 20% higher as compared to previous year.
- Balances as on 31st March, 2024 were : Stock Rs. 5,20,000, Creditors Rs. 4,15,000, Debtors Rs. 4,95,000 and Cash balance Rs. 3,10,000.
- Percentage of Gross profit on turnover has gone up from 20% to 25% and ratio of net profit to sales from 15% to 16%.
- A portion of Fixed assets was very old (book values Rs. 1,80,000) disposed for Rs. 90,000. (No depreciations to be provided on this item).
- Long-term investments were purchased for Rs. 2,96,600.
- Bank overdraft fully discharged.
- Percentage of depreciation to Fixed assets to be provided at the rate in the previous year.

PREPARE Balance Sheet as on 31st March, 2023 and 31st March, 2024.

Ans.

Balance Sheets of Alpha Limited

Liabilities	₹ 31 March 2023	₹ 31 March 2024	Assets	₹ 31 March 2023	₹ 31 March 2024
Equity share capital (₹ 10 each fully paid)	20,00,000	20,00,000	Fixed Assets (₹18,90,000- ₹90,000)	18,00,000	15,39,000
Reserve and Surplus (balancing)	1,30,000	1,30,000	Long term investment	-	2,96,600
Profit & Loss A/c (15% of sales)	2,70,000	6,15,600	**Current Assets** (₹ 10,00,000)		
Current Liabilities			Stock	4,00,000	5,20,000
Bank Overdraft	1,00,000	-	Sundry Debtors	3,00,000	4,95,000

Creditors	3,00,000	4,15,000	Cash at Bank (Balancing)	3,00,000	3,10,000
Total	**28,00,000**	**31,60,600**	**Total**	**28,00,000**	**31,60,600**

Calculation for 31st March, 2023

(i) Calculation of Current Liabilities

Suppose that Current Liabilities = x, then current assets will be 2.5 x

Working capital = Current Assets – Current Liabilities

6,00,000 = 2.5x – x

x = 6,00,000 / 1.5 = ₹ 4,00,000 (C.L.)

Other Current Liabilities = Current Liabilities – Bank Overdraft

(Creditors) = 4,00,000 – 1,00,000 = ₹ 3,00,000

Current Assets = 2.5 x 4,00,000 = ₹ 10,00,000

(ii) Liquid Ratio $= \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$

$1.5 = \frac{\text{Liquid Assets}}{4,00,000}$

Liquid assets = ₹6,00,000

Liquid assets = Current Assets – Stock

6,00,000 = 10,00,000 – Stock

So, Stock = ₹ 4,00,000

(iii) Calculation of fixed assets: Fixed assets to proprietary fund is 0.75, working capital is therefore 0.25 of proprietary fund. So,

Fixed Assets = 6,00,000 / 0.25 x 0.75 = ₹ 18,00,000

(iv) Sales = (14,40,000 / 80) x 100 = ₹ 18,00,000

(v) Debtors $= \frac{2}{12} \times \text{Sales}$

2 / 12 x 18,00,000 = ₹ 3,00,000

(vi) Net profit = 15% of ₹18,00,000 = ₹ 2,70,000

Calculation for the year 31st March, 2024

(vii) Sales = 18,00,000 + (18,00,000 x 0.2) = 21,60,000

(viii) Calculation of fixed assets

	₹		₹
To Opening balance	18,00,000	By Banks (Sale)	90,000
		By Loss on sales of Fixed asset	90,000
		By P & L (Dep.) (5% as in previous year)	81,000
		By Balance b/d	15,39,000
Total	18,00,000		18,00,000

(ix) Net profit for the year 2011, 16% x 21,60,000 = ₹ 3,45,600

Total Profit = 2,70,000 + 3,45,600 = ₹ 6,15,600

Q.34 MTP May 24 (2)

EOC Ltd is a listed company and has presented the below abridged financial statements below.

Statement of Profit and Loss	₹	₹
Sales		1,25,00,000
Cost of goods sold		(76,40,000)
Gross Profit		48,60,000

Less: Operating Expenses		
Administrative Expenses	13,20,000	
Selling and Distribution Expenses	15,90,000	(29,10,000)
Operating Profit		19,50,000
Add: Non Operating Income		3,28,000
Less: Non Operating Expenses		(1,27,000)
Profit before Interest and taxes		21,51,000
Less: Interest		(4,39,000)
Profit before tax		17,12,000
Less: Taxes		(4,28,000)
Profit after Tax		12,84,000

Balance Sheet

Sources of Funds	₹	₹
Owned Funds		
Equity Share Capital	30,00,000	
Reserves and Surplus	18,00,000	48,00,000
Borrowed Funds		
Secured Loan	10,00,000	
Unsecured Loan	4,30,000	14,30,000
Total Funds Raised		**62,30,000**
Application of Funds		
Non-Current Assets		
Building	7,50,000	
Machinery	2,30,000	
Furniture	7,60,000	
Intangible Assets	50,000	17,90,000
Current Assets		
Inventory	38,60,000	
Receivables	39,97,000	
ST investments	3,00,000	
Cash and Bank	2,30,000	83,87,000
Less: Current Liabilities		
Creditors	25,67,000	
ST loans	13,80,000	(39,47,000)
Total Funds Employed		**62,30,000**

The company has set certain standards for the upcoming year financial status.
All the ratios are based on closing figures in financial statements.

Equity SC to Reserves=	1	
Net Profit Ratio=	15%	
Gross Profit Ratio=	50%	
Long Term Debt to Equity=	0.5	
Debtor Turnover=	100	Days
Creditor Turnover (based on COGS)=	100	Days
Inventory=	70%	of Opening inventory

Cash Balance is assumed to remain same for next year You are required to -

(1) CALCULATE inventory turnover ratio in days for current year
(2) CALCULATE receivables turnover ratio in days for current year
(3) CALCULATE the projected receivables, inventory, payables and long term debt

Ans. Inventory Turnover = $\frac{\text{Inventory}}{COGS} x365 = \frac{38,60,000 \times 365}{76,40,000}$ ×365 = 184.41 days

= 185 days (apx)

Receivables Turnover = $\frac{\text{Receivables}}{\text{Sales}} x365 = \frac{39,97,000 \times 365}{1,25,00,000} = 116.71$

= 117 days (apx)

Equity to Reserves = 1

Reserves = 1 x 30,00,000 = 30,00,000

Projected profit = 30,00,000 - 18,00,000 = 12,00,000

Net Profit Margin = 15%

12,00,000/ Sales = 0.15

Sales = 80,00,000

Gross Profit = 80,00,000 x 50% = 40,00,000

COGS = 80,00,000 - 40,00,000 = 40,00,000

Projected Debtors Turnover = 100 days = $\frac{\text{Closing Receivables}}{\text{Sales}} x365$

$$100 = \frac{\text{Closing Receivables}}{80,00,000} x365$$

$$\text{Closing Receivables} = \frac{80,00,000 \times 100}{365} = 21,91,781$$

Projected Closing Inventory = 70% of opening inventory = 70% of 38,60,000 = 27,02,000

Projected Creditor Turnover= 100 days = $\frac{\text{Closing Creditors}}{COGS} x365$

Closing Creditors = $\frac{COGS}{365} x100$

Closing Creditor = $\frac{40,00,000}{365} x100 = 10,95,890$

Equity Share Capital + Reserves = 30,00,000 + 30,00,000 = 60,00,000

Long Term Debt to Equity = 0.5

$$\frac{LTD}{60,00,000} = 0.5$$

Long Term Debt = 0.5 x 60,00,000

Long Term Debt = 30,00,000

Q.35 MTP SEP 2025(2)

Fortune Ltd. ha s furnished the following information relating to the year ended 31st March, 2024 and 31st March, 2025:

	31st March, 2024 (₹)	31st March, 2025 (₹)
Share Capital	60,00,000	60,00,000
Reserve and Surplus	30,00,000	40,00,000
Long term loan	40,00,000	40,00,000

- Net profit ratio: 8%
- Gross profit ratio: 20%
- Long-term loan has been used to finance 40% of the fixed assets.

- Stock turnover with respect to cost of goods sold is 4.
- Debtors represent 90 days of credit sales.
- The company holds cash equivalent to $1\frac{1}{2}$ months cost of goods sold.
- Ignore taxation and assume 360 days in a year.
- All sales are credit sales.

You are required to PREPARE Balance Sheet as on 31st March, 2025 in the following format:

Liabilities	(₹)	Assets	(₹)
Share Capital	-	Fixed Assets	-
Reserve and Surplus	-	Sundry Debtors	-
Long-term loan	-	Closing Stock	-
Sundry Creditors	-	Cash in hand	-

Ans.

(i) Change in Reserve & Surplus = ₹ 40,00,000 – ₹ 30,00,000 = ₹ 10,00,000

So, Net profit = ₹ 10,00,000

Net Profit Ratio = 8%

$\therefore$ Sales = $\frac{[10,00,000]}{(8\%)}$ = ₹ 1,25,00,000

(ii) Cost of Goods sold

= Sales – Gross profit Margin

= ₹ 1,25,000,000 – 20% of ₹ 1,25,00,000

= ₹ 1,00,00,000

(iii) Fixed Assets = $\frac{₹\ 40,00,000}{40\%}$ = ₹ 1,00,00,000

(iv) Stock = $\frac{\text{Cost of Goods Sold}}{\text{Stock Turnover ratio}} = \frac{₹\ 10,00,000}{4}$ = ₹ 25,00,000

(v) Debtors = $\frac{1,25,00,000}{360} \times 90$ = ₹ 31,25,000

(vi) Cash Equivalent = $\frac{₹\ 1,00,00,000}{12} \times 1.5$ = ₹ 12,50,000

Balance Sheet as on 31st March 2025

Liabilities	(₹)	Assets	(₹)
Share Capital	60,00,000	Fixed Assets	1,00,00,000
Reserve and Surplus	40,00,000	Sundry Debtors	31,25,000
Long-term loan	40,00,000	Closing Stock	25,00,000
Sundry Creditors (Balancing Figure)	28,75,000	Cash in hand	12,50,000
	1,68,75,000		1,68,75,000

Q.36

The Balance Sheets of A Ltd. and B Ltd. as on 31st March 2023 are as follows:

Particulars	A Ltd	B Ltd
Liabilities:		
Share Capital	40,00,000	40,00,000
Reserve and surplus	32,30,000	25,00,000
Secured Loans	25,25,000	32,50,000
Current Liabilities and provisions:		
Sundry Creditors	15,00,000	14,00,000
Outstanding Expenses	2,00,000	3,00,000
Provision for Tax	3,00,000	3,00,000

Proposed Dividend	6,00,000	-
Unclaimed Dividend	15,000	-
Assets:	**1,23,70,000**	**1,17,50,000**
Fixed Assets (Net)	**80,00,000**	**50,00,000**
Investments	15,00,000	-
Inventory at Cost	23,00,000	45,00,000
Sundry Debtors	-	17,00,000
Cash & Bank	5,70,000	5,50,000
	1,23,70,000	**1,17,50,000**

Additional information available:

(i) 75% of the Inventory in A Ltd. readily saleable at cost plus 20%,

(ii) 50% of Sundry Debtors of B Ltd. are due from C Ltd. which is not in a position to repay the amount B Ltd. agreed to accept 15% debentures of C Ltd.

(iii) B Ltd. had also proposed 15% dividend but that was not shown in the accounts.

(iv) At the year end, B Ltd. sold investments amounting to ₹1,20,000 and repaid Sundry Creditors.

On the basis of the given Balance Sheet and the additional information, you are required to evaluate liquidity of the companies. All working should form part of the answer.

Ans.

Particulars	A	B
Current Assets and Liquid Assets:		
Stock (23,00,000 × 75%) + 20%	20,70,000	-
Debtor (17,00,000 × 50%)	-	8,50,000
Cash & Bank	5,70,000	5,50,000
Liquid Assets	**26,40,000**	**14,00,000**
Add: Stock (23,00,000 × 25%)	5,75,000	45,00,000
Total Current Assets	**32,15,000**	**59,00,000**
Current Liabilities:		
Proposed Dividend	6,00,000	6,00,000
Creditor	15,00,000	15,20,000
Out Expenses	2,00,000	3,00,000
Provision for tax	3,00,000	3,00,000
Unclaimed Dividend	15,000	-
	26,15,000	**27,20,000**

Evaluation of Liquidity		
RATIO	**A**	**B**
1. Current Ratio = $\frac{CA}{CL}$	$\frac{32,15,000}{26,15,000}$ = **1.23**	$\frac{59,00,000}{27,20,000}$ = **2.17**
2. Liquid Ratio = $\frac{LA}{CL}$	$\frac{26,40,000}{26,15,000}$ = **1.009**	$\frac{14,00,000}{27,20,000}$ = **.51**

2 CHAPTER LEVERAGE

Q.1 EPS calculation | PY May 23

Following information is given for X Ltd.:

Total contribution (₹)	*4,25,000*
Operating leverage	*3.125*
15% Preference shares (₹ 100 each)	*1,000*
Number of equity shares	*2,500*
Tax rate	*50%*

Calculate EPS of X Ltd., if 40% decrease in sales will result EPS to zero.

Ans.

(i) Operating Leverage (OL) = $\frac{\text{Contribution}}{\text{EBIT}}$ Or, 3.125 = $\frac{4,25,000}{\text{EBIT}}$

Or EBIT = ₹ 1,36,000

(ii) Degree of Combined Leverage (CL) = $\frac{\%\text{ Change in EPS}}{\%\text{ Change in Sales}} = \frac{100}{40} = 2.5$

(iii) Combined Leverage = OL × FL = 3.125 × FL

So, Financial Leverage = 2.5 /3.125 = 0.8

(iv) Financial Leverage = $\frac{\text{EBIT}}{\text{EBT}} = \frac{1,36,000}{\text{EBT}} = 0.8$

So, EBT = $\frac{1,36,000}{0.80}$ = ₹ 1,70,000

Calculation of EPS of X Ltd

Particulars	(₹)
EBT	1,70,000
Less: Tax (50%)	85,000
EAT	85,000
Preference Dividend	15,000
Net Earnings for Equity Shareholders	70,000
Number of equity shares	2,500
EPS	**28**

Q.2 PL Statement | PY Nov 22

The following information is available for SS Ltd.

Profit volume (PV) ratio	30%
Operating leverage	2.00
Financial leverage	1.50
Loan	₹ 1,25,000
Post-tax interest rate	5.6%
Tax rate	30%
Market Price per share (MPS)	₹ 140
Price Earnings Ratio (PER)	10

You are required to:

(1) Prepare the Profit-Loss statement of SS Ltd. and

(2) Find out the number of equity shares.

Ans. **(1) Preparation of Profit – Loss Statement**

Working Notes:

1.

Post tax interest	5.60%
Tax rate	30%
Pre tax interest rate = (5.6/70) x 100	8%
Loan amount	₹ 1,25,000
Interest amount = 1,25,000 x 8%	₹ 10,000

$$\text{Financial Leverage (FL)} = \left(\frac{EBIT}{EBT}\right) = \left[\frac{EBIT}{(EBIT - Interest)}\right] = \left[\frac{EBIT}{(EBIT - 10,000)}\right]$$

$$1.5 = \left[\frac{EBIT}{(EBIT - 10,000)}\right]$$

1.5 EBIT -15000 = EBIT

1.5 EBIT – EBIT = 15,000

0.5 EBIT = 15,000

EBIT = ₹ 30,000

EBT = EBIT – Interest = 30,000 – 10,000 = ₹ 20,000

2. $\text{Operating Leverage (OL)} = \frac{\text{Contribution}}{EBIT}$

$$2 = \frac{\text{Contribution}}{30,000}$$

Contribution = ₹ 60,000

3., **Fixed cost** = Contribution – Profit

= 60,000 – 30,000 = ₹ 30,000

4., $\text{Sales} = \frac{\text{Contribution}}{\text{PV Ratio}}$

$= \frac{60,000}{30\%} =$ ₹ 2,00,000

5. If PV ratio is 30%, then the variable cost is 70% on sales.

Variable cost = 2,00,000 x 70% = **₹ 1,40,000**

Profit – Loss Statement

Particulars	₹
Sales	2,00,000
Less: Variable cost	1,40,000

Contribution	60000
Less: Fixed cost	30,000
EBIT	30,000
Less: Interest	10,000
EBT	20,000
Less: Tax @ 30% EAT	6,000
	14,000

(2) Calculation of no. of Equity shares

Market Price per Share (MPS) = ₹140

Price Earnings Ratio (PER) = 10

WKT,

$$\textbf{EPS} = \frac{MPS}{PER} = \frac{140}{10} = ₹\ 14$$

Total earnings (EAT) = ₹ 14,000

No. of Equity Shares = 14,000 / 14 = **1000**

Q.3 ROCE / EPS / OL / FL / CL | PY May 22

Details of a company for the year ended 31st March, 2022 are given below:

Sales	*₹ 86 lakhs*
Profit Volume (P/V) Ratio	*35%*
Fixed Cost excluding interest expenses	*₹ 10 lakhs*
10% Debt	*₹ 55 lakhs*
Equity Share Capital of ₹ 10 each	*₹ 75 lakhs*
Income Tax Rate	*40%*

Required:

(i) Determine company's Return on Capital Employed (Pre-tax) and EPS.

(ii) Does the company have a favourable financial leverage?

(iii) Calculate operating and combined leverages of the company.

(iv) Calculate percentage change in EBIT, if sales increases by 10%.

(v) At what level of sales, the Earning before Tax (EBT) of the company will be equal to zero?

Ans.

Income Statement

Particulars	Amount (₹)
Sales	86,00,000
Less: Variable cost (65% of 86,00,000)	55,90,000
Contribution (35% of 86,00,000)	30,10,000
Less: Fixed costs	10,00,000
Earnings before interest and tax (EBIT)	20,10,000
Less: Interest on debt (@ 10% on ₹ 55 lakhs)	5,50,000
Earnings before tax (EBT)	14,60,000
Tax (40%)	5,84,000
PAT	8,76,000

(i) **ROCE (Pre-tax)** $= \frac{\text{EBIT}}{\text{Capital employed}} \times 100 = \frac{\text{EBIT}}{\text{Equity + Debt}} \times 100$

$= \frac{20,10,000}{(75,00,000 + 55,00,000)} \times 100 =$ **15.46%**

EPS (PAT/No. of equity shares) **1.168 or ₹ 1.17**

(ii) ROCE is 15.46% and Interest on debt is 10%. Hence, it has a **favourable financial leverage.**

(iii) Calculation of Operating, Financial and Combined leverages:

Operating Leverage $= \frac{\text{Contribution}}{\text{EBIT}} = \frac{30,10,000}{20,10,000} =$ **1.497 (approx.)**

Financial Leverage $= \frac{\text{EBIT}}{\text{EBIT}} = \frac{20,10,000}{14,60,000} =$ 1.377 (approx.)

Combined Leverage $= \frac{\text{Contribution}}{\text{EBIT}} = \frac{30,10,000}{14,60,000} =$ 2.062 (approx.)

Or, = Operating Leverage × Financial Leverage = 1.497 × 1.37 7 = **2.06 (approx.)**

(iv) Operating leverage is 1.497. So, if sales are increased by 10%.
EBIT will be increased by 1.497 × 10% i.e. 14.97% (approx.)

(v) Since the combined Leverage is 2.062, sales have to drop by 100/2.062 i.e. 48.50% to bring EBT to Zero.
Accordingly, New Sales = ₹ 86,00,000 × (1 - 0.4850)
= ₹ 86,00,000 × 0.515
= ₹ 44,29,000 (approx.)

Hence, at ₹ 44,29,000 sales level, EBT of the firm will be equal to Zero.

Q.4 % change in EPS / PL / FL / CL | PY Dec 21

Information of A Ltd. is given below:

- Earnings after tax: 5% on sales
- Income tax rate: 50%
- Degree of Operating Leverage: 4 times
- 10% Debenture in capital structure: ₹ 3 lakhs
- Variable costs: ₹ 6 lakhs

Required:

(i) From the given data complete following statement:

Sales	*XXXX*
Less: Variable costs	*₹ 6,00,000*
Contribution	*XXXX*
Less: Fixed costs	*XXXX*
EBIT	*XXXX*
Less: Interest expenses	*XXXX*
EBT	*XXXX*

Less: Income tax	*XXXX*
EAT	*XXXX*

(ii) Calculate Financial Leverage and Combined Leverage.

(iii) Calculate the percentage change in earning per share, if sales increased by 5%.

Ans. **(i)** **Working Notes**

Earning after tax (EAT) is 5% of sales

Income tax is 50%

So, EBT is 10% of Sales

Since Interest Expenses is ₹ 30,000

EBIT = 10% of Sales + ₹30,000 ..... (Equation i)

Now Degree of operating leverage = 4

So, $\frac{\text{Contribution}}{\text{EBIT}} = 4$

Or, Contribution = 4 EBIT

Or, Sales – Variable Cost = 4 EBIT

Or, Sales – ₹ 6,00,000 = 4 EBIT ..... (Equation ii)

Replacing the value of EBIT of equation (i) in Equation (ii)

We get, Sales – ₹ 6,00,000 = 4 (10% of Sales + ₹ 30,000)

Or, Sales – ₹ 6,00,000 = 40% of Sales + ₹ 1,20,000

Or, 60% of Sales = ₹ 7,20,000

So, Sales = $\frac{7,20,000}{60\%}$ = ₹ 12,00,000

Contribution = Sales – Variable Cost = ₹ 12,00,000 – ₹ 6,00,000 = ₹ 6,00,000

EBIT = $\frac{6,00,000}{4}$ = ₹ 1,50,000

Fixed Cost = Contribution – EBIT = ₹ 6,00,000 – ₹ 1,50,000 = ₹ 4,50,000

EBT = EBIT – Interest = ₹ 1,50,000 – ₹ 30,000 = ₹ 1,20,000

EAT = 50% of ₹ 1,20,000 = ₹ 60,000

Income Statement

Particulars	(₹)
Sales	**12,00,000**
Less: Variable cost	6,00,000
Contribution	6,00,000
Less: Fixed cost	4,50,000
EBIT	**1,50,000**
Less: Interest	30,000
EBT	**1,20,000**
Less: Tax (50%)	60,000
EAT	60,000

(ii) Financial Leverage $= \frac{EBIT}{EBT} = \frac{1,50,000}{1,20,000} = 1.25$ times

Combined Leverage = Operating Leverage × Financial Leverage

= 4 x 1.25 = 5 times

Or,

$$\text{Combined Leverage} = \frac{\text{Contribution}}{EBIT} \times \frac{EBIT}{EBT}$$

$$\text{Combined Leverage} = \frac{\text{Contribution}}{EBIT} = \frac{6,00,000}{1,20,000} = 5 \text{ times}$$

(iii) Percentage Change in Earnings per share

$$\text{Combined Leverage} = \frac{\%\text{ Change in EPS}}{\%\text{ change in Sales}} = \frac{\%\text{ Change in EPS}}{5\%}$$

% Change in EPS = 25%

Hence, if sales increased by 5 %, EPS will be increased by 25 %.

Q.5 EPS / OL / CL | PY Jan 21

The information related to XYZ Company Ltd. for the year ended 31st March, 2020 are as follows:

Equity Share Capital of ₹ 100 each	₹ 50 Lakhs
12% Bonds of ₹ 1000 each	₹ 30 Lakhs
Sales	₹ 84 Lakhs
Fixed Cost (Excluding Interest)	₹ 7.5 Lakhs
Financial Leverage	1.39
Profit-Volume Ratio	25%
Market Price per Equity Share	₹ 200
Income Tax Rate Applicable	30%

You are required to compute the following:

(i) Operating Leverage
(ii) Combined Leverage
(iii) Earning per share
(iv) Earning Yield

Ans. **Workings:**

1. Profit Volume Ratio $= \frac{\text{Contribution}}{\text{Sales}} \times 100$

So, $25 = \frac{\text{Contribution}}{84,00,000} \times 100$

$$\text{Contribution} = \frac{84,00,000 \times 25}{100} = ₹\ 21,00,000$$

2. Financial leverage $= \frac{EBIT}{EBT}$

Or, $1.39 = \frac{13,50,000 \text{ (as calculated above) EBT}}{\text{EBT}}$ ₹

EBT = ₹ 9,71,223

3. Income Statement

Particulars	(₹)
Sales	84,00,000
Less: Variable Cost (Sales - Contribution)	(63,00,000)
Contribution	21,00,000
Less: Fixed Cost	(7,50,000)
EBIT	13,50,000
Less: Interest (EBIT - EBT)	(3,78,777)
EBT	9,71,223
Less: Tax @ 30%	(2,91,367)
Profit after Tax (PAT)	**6,79,856**

(i) Operating Leverage $= \frac{\text{Contribution}}{\text{Earningsbefore interest and tax (EBIT)}}$

$= \frac{21,00,000}{13,50,000} = 1.556$ (approx.)

(ii) Combined Leverage = Operating Leverage x Financial Leverage

= 1.556 x 1.39 = 2.163 (approx.)

Or, $\frac{\text{Contribution}}{\text{EBT}} = \frac{21,00,000}{9,71,223} = 2.162$ (approx.)

(iii) Earnings per Share (EPS)

EPS = $\frac{\text{PAT}}{6,79,856}$ = ₹ 13.597

No. of shares = 50,000

(iv) Earning Yield

$= \frac{\text{EPS}}{\text{Market Price}} \times 100 = \frac{13.597}{200} \times 100 =$ **6.80% (approx.)**

Note: The question has been solved considering Financial Leverage given in the question as the base for calculating total interest expense including the interest of 12% Bonds of ₹ 30 Lakhs. The question can also be solved in other alternative ways.

Q.6 % change in EBIT | PY Nov 20

The following data is available for Stone Ltd. : (₹)

Sales	5,00,000
(-) Variable cost @ 40%	2,00,000
Contribution	3,00,000
(-) Fixed cost	2,00,000
EBIT	1,00,000
(-) Interest	25,000
Profit before tax	75,000

Using the concept of leverage, find out
(i) The percentage change in taxable income if EBIT increases by 10%.
(ii) The percentage change in EBIT if sales increases by 10%.
(iii) The percentage change in taxable income if sales increases by 10%.
Also verify the results in each of the above case.

Ans.

(i) Degree of Financial Leverage = $\frac{EBIT}{EBT} = \frac{1,00,000}{75,000}$ = 1.333 times

So, If EBIT increases by 10% then Taxable Income (EBT) will be increased by 1.333 × 10 = 13.33% (approx.)

Verification

Particulars	Amount (₹)
New EBIT after 10% increase (₹ 1,00,000 + 10%)	1,10,000
Less: Interest	25,000
Earnings before Tax after change (EBT)	85,000

Increase in Earnings before Tax = ₹ 85,000 - ₹ 75,000 = ₹ 10,000

So, percentage change in Taxable Income (EBT) = $\frac{1,00,000}{75,000}$ x 100 = 13.333%, hence verified

(ii) Degree of Operating Leverage = $\frac{Contribution}{EBIT} = \frac{3,00,000}{1,00,000}$ = 3 times

So, if sale is increased by 10% then EBIT will be increased by 3 × 10 = 30%

Verification

Particulars	Amount (₹)
New Sales after 10% increase (₹ 5,00,000 + 10%)	5,50,000
Less: Variable cost (40% of ₹ 5,50,000)	2,20,000
Contribution	3,30,000
Less: Fixed costs	2,00,000
Earnings before interest and tax after change (EBIT)	1,30,000

Increase in Earnings before interest and tax (EBIT) = ₹ 1,30,000 - ₹ 1,00,000 = ₹ 30,000

So, percentage change in EBIT = $\frac{30,000}{1,00,000}$ x 100 = 30%, hence verified.

(iii) Degree of Combined Leverage = $\frac{Contribution}{EBIT} = \frac{3,00,000}{75,000}$ = 4 times

So, if sale is increased by 10% then Taxable Income (EBT) will be increased by 4 × 10 = 40%

Verification

Particulars	Amount (₹)
New Sales after 10% increase (₹ 5,00,000 + 10%)	5,50,000
Less: Variable cost (40% of ₹ 5,50,000)	2,20,000
Contribution	3,30,000
Less: Fixed costs	2,00,000
Earnings before interest and tax (EBIT)	1,30,000
Less: Interest	25,000

Earnings before tax after change (EBT)	1,05,000

Increase in Earnings before tax (EBT) = ₹ 1,05,000 - ₹ 75,000 = ₹ 30,000

So, percentage change in Taxable Income (EBT) = $\frac{30,000}{75,000}$ x 100 = 40%, hence verified

Q.7 EBIT / OL / FL / CL | PY Nov 19

The Balance Sheet of Gitashree Ltd. is given below:

Liabilities		(₹)
Shareholders' fund		
Equity share capital of ₹ 10 each	*₹ 1,80,000*	
Retained earnings	*₹ 60,000*	*2,40,000*
Non-current liabilities 10% debt		*2,40,000*
Current liabilities		*1,20,000*
		6,00,000
Assets		
Fixed Assets		*4,50,000*
Current Assets		*1,50,000*
		6,00,000

The company's total asset turnover ratio is 4. Its fixed operating cost is ₹ 2,00,000 and its variable operating cost ratio is 60%. The income tax rate is 30%.

Calculate:

(i) (a) Degree of Operating leverage.

(b) Degree of Financial leverage.

(c) Degree of Combined leverage.

(ii) Find out EBIT if EPS is (a) ₹ 1 (b) ₹ 2 and (c) ₹ 0.

Ans. **Working Notes:**

Total Assets = ₹ 6,00,000

Total Asset Turnover Ratio i.e. = $\frac{\text{Total Sales}}{\text{Total Assets}}$ = 4

Hence, Total Sales = ₹ 6,00,000 x 4 = ₹ 24,00,000

Computation of Profits after Tax (PAT)

Particulars	(₹)
Sales	24,00,000
Less: Variable operating cost @ 60%	14,40,000
Contribution	9,60,000
Less: Fixed operating cost (other than Interest)	2,00,000
EBIT (Earning before interest and tax)	7,60,000
Less: Interest on debt (10% ▯ 2,40,000)	24,000

EBT (Earning before tax)	7,36,000
Less: Tax 30%	2,20,800
EAT (Earning after tax)	5,15,200

(i) (a) Degree of Operating Leverage

$$\text{Degree of Operating leverage} = \frac{\text{Contribution}}{\text{EBIT}} = ₹\frac{9,60,000}{7,60,000} = 1.263 \text{ (approx.)}$$

(b) Degree of Financial Leverage

$$\text{Degree of Financial Leverage} = \frac{\text{EBIT}}{\text{EBT}} = \frac{9,60,000}{7,60,000} = 1.033 \text{ (approx.)}$$

(c) Degree of Combined Leverage

$$\text{Degree of Combined Leverage} = \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{EBT}} \times \frac{\text{Contribution}}{\text{EBT}}$$

$$= \frac{9,60,000}{7,60,000} = 1.304 \text{ (approx.)}$$

Or

Degree of Combined Leverage = Degree of Operating Leverage x Degree of Financial Leverage
= 1.263 x 1.033 = 1.304 (approx.)

(ii) (a) If EPS is Re. 1

$$\text{EPS} = \frac{(\text{EBIT} - \text{Interest})(1 - \text{tax})}{\text{Noof equity shares}}$$

$$\text{Or, } 1 = \frac{(\text{EBIT} - ` 24,000)\ (1 - 0.30)}{18,000}$$

Or, EBIT = ₹ 49,714 (approx.)

(b) If EPS is ₹ 2

$$2 = \frac{(\text{EBIT} - ` 24,000)\ (1 - 0.30)}{18,000}$$

Or, EBIT = ₹ 75,429 (approx.)

(c) If EPS is ₹ 0

$$0 = \frac{(\text{EBIT} - ` 24,000)\ (1 - 0.30)}{18,000}$$

Or, EBIT = ₹ 24,000

Alternatively, if EPS is 0 (zero), EBIT will be equal to interest on debt i.e. ₹ 24,000.

Q.8 % change in EPS / OL / FL | PY May 19

The capital structure of the Shiva Ltd. consists of equity share capital of ₹ 20,00,000 (Share of ₹ 100 per value) and ₹ 20,00,000 of 10% Debentures, sales increased by 20% from 2,00,000 units to 2,40,000 units, the selling price is ₹ 10 per unit; variable costs amount to ₹ 6 per unit and fixed expenses amount to ₹ 4,00,000. The income tax rate is assumed to be 50%.

(a) You are required to calculate the following:

(i) The percentage increase in earnings per share;

(ii) Financial leverage at 2,00,000 units and 2,40,000 units.

(iii) Operating leverage at 2,00,000 units and 2,40,000 units.

(b) Comment on the behaviour of operating and Financial leverages in relation to increase in production from 2,00,000 units to 2,40,000 units.

Ans. **(a)**

Sales in units	2,00,000 (₹)	2,40,000 (₹)
Sales Value @ ₹ 10 Per Unit	20,00,000	24,00,000
Variable Cost @ ₹ 6 per unit	(12,00,000)	(14,40,000)
Contribution	8,00,000	9,60,000
Fixed expenses	(4,00,000)	(4,00,000)
EBIT	4,00,000	5,60,000
Debenture Interest	(2,00,000)	(2,00,000)
EBT	2,00,000	3,60,000
Tax @ 50%	(1,00,000)	(1,80,000)
Profit after tax (PAT)	1,00,000	1,80,000
No of Share	20,000	20,000
Earnings per share (EPS)	5	9
(i)The percentage Increase in **EPS**		$\frac{4}{5} \times 100 = 80\%$
(ii) **Financial Leverage** = $\frac{EBIT}{EBT}$	$\frac{4,00,000}{2,00,000} = 2$	$\frac{₹\ 5,60,000}{₹\ 3,60,000} = 1.56$
(iii) **Operating leverage**= $\frac{Contribution}{EBIT}$	$\frac{8,00,000}{4,00,000} = 2$	$\frac{9,60,000}{5,60,000} = 1.71$

(b) When production is increased from 2,00,000 units to 2,40,000 units both financial leverage and operating leverages reduced from 2 to 1.56 and 1.71 respectively. Reduction in financial leverage and operating leverages signifies reduction in business risk and financial risk.

Q.9 PL Statement | RTP May 23

The selected financial data for A, B and C companies for the current year ended 31st March are as follows:

Particulars	A	B	C
Variable Expenses as a % of sales	60	50	40
Interest	₹ 1,00,000	₹ 4,00,000	₹ 6,00,000
Degree of Operating Leverage	4:1	3:1	2.5:1
Degree of Financial Leverage	3:1	5:1	2.5:1
Income Tax Rate	30%	30%	30%

(a) PREPARE income statement for A, B and C companies

(b) COMMENT on the financial position and structure of these companies

Ans. **Income Statement of companies A, B and C**

Particulars	A	B	C
Sales	₹15,00,000	₹30,00,000	₹41,66,667
Less: Variable Expenses	₹9,00,000	₹15,00,000	₹16,66,667
Contribution	₹6,00,000	₹15,00,000	₹25,00,000
Less: Fixed Cost	₹4,50,000	₹10,00,000	₹15,00,000
EBIT	₹1,50,000	₹5,00,000	₹10,00,000
Less: Interest	₹1,00,000	₹4,00,000	₹6,00,000
PBT	₹50,000	₹1,00,000	₹4,00,000
Less: Tax @ 30%	₹15,000	₹30,000	₹1,20,000
PAT	₹35,000	₹70,000	₹2,80,000

Working Notes:

(i) Degree of Financial Leverage = $\frac{EBIT}{EBIT - Interest}$

DFL x (EBIT – Int) = EBIT
DFL x EBIT – Int x DFL= EBIT
DFL x EBIT – EBIT =Int x DFL
EBIT (DFL – 1) = Int x DFL

$EBIT = \frac{intx\ DFL}{DFL - 1}$

For A,

$EBIT_A = \frac{1,00,000 \times 3}{3 - 1}$

$EBIT_A$ = ₹150000

For B

$EBIT_B = \frac{4,00,000 \times 5}{5 - 1}$

EBITB = ₹500000

For C

$EBIT_c = \frac{6,00,000 \times 2.5}{2.5 - 1}$ ₹

$EBIT_c$ =10,00,000

(ii) $DOL = \frac{Contribution}{EBIT}$

Contribution = DOL x EBIT
$Contribution_A$ = 4 x ₹1,50,000
$Contribution_A$ = ₹6,00,000
$Contribution_B$ = 3 x ₹5,00,000
$Contribution_B$ = ₹15,00,000
$Contribution_C$ = 2.5 x ₹10,00,000
$Contribution_C$ = ₹25,00,000

(iii) Fixed Cost = Contribution – EBIT
$Fixed\ Cost_A$= ₹6,00,000 – ₹1,50,000 = ₹4,50,000

Fixed Cost$_B$ =₹15,00,000 – ₹5,00,000 = ₹10,00,000
Fixed Cost$_C$ = ₹25,00,000 – ₹10,00,000 = ₹15,00,000

(iv) Contribution = Sales – VC
VC= Sales – Contribution
Sales x VC Ratio= Sales – Contribution
Contribution= Sales – Sales x VC Ratio
Contribution=Sales(1-VCR)

$$\text{Sales} = \frac{\text{Contribution}}{1 - \text{VCR}}$$

Sales$_A$ = ₹6,00,000/(1-0.6) = ₹15,00,000
Sales$_B$ = ₹15,00,000/(1-0.5) = ₹30,00,000
Sales$_C$ = ₹25,00,000/(1-0.4) = ₹41,66,667

Of all the companies, A has the highest degree of Operating Leverage, B has highest degree of Financial Leverage and C is equally leveraged on both Operating and Financial fronts. If we consider combined leverage companies will have the leverages of 12, 15 and 6.25 (by multiplying both operating and financial leverages). This means A is undertaking a higher degree of operating risk while B is undertaking a higher degree of financial risk.

Q.10 EPS / FL | RTP Nov 22

Debu Ltd. currently has an equity share capital of ₹ 1,30,00,000 consisting of 13,00,000 Equity shares. The company is going through a major expansion plan requiring to raise funds to the tune of ₹ 78,00,000. To finance the expansion the management has following plans:
Plan-I : Issue 7,80,000 Equity shares of ₹ 10 each.
Plan-II : Issue 5,20,000 Equity shares of ₹ 10 each and the balance through long-term borrowing at 12% interest p.a.
Plan-III : Issue 3,90,000 Equity shares of ₹ 10 each and 39,000, 9% Debentures of ₹ 100 each.
Plan-IV : Issue 3,90,000 Equity shares of ₹ 10 each and the balance through 6% preference shares.
EBIT of the company is expected to be ₹ 52,00,000 p.a.
Considering corporate tax rate @ 40%, you are required to-
(i) CALCULATE EPS in each of the above plans.
(ii) ASCERTAIN financial leverage in each plan and comment.

Ans.

Sources of Capital	Plan I	Plan II	Plan III	Plan IV
Present Equity Shares	13,00,000	13,00,000	13,00,000	13,00,000
New Issue	7,80,000	5,20,000	3,90,000	3,90,000
Equity share capital (₹)	2,08,00,000	1,82,00,000	1,69,00,000	1,69,00,000
No. of Equity shares	20,80,000	18,20,000	16,90,000	16,90,000
12% Long term loan (₹)	-	26,00,000	-	-
9% Debentures (₹)	-	-	39,00,000	-
6% Preference Shares (₹)	-	-	-	39,00,000

Computation of EPS and Financial Leverage

Sources of Capital	Plan I	Plan II	Plan III	Plan IV
EBIT (₹)	52,00,000	52,00,000	52,00,000	52,00,000
Less: Interest on 12% Loan (₹)	-	3,12,000	-	-

Less: Interest on 9% debentures (₹)	-	-	3,51,000	-
EBT (₹)	52,00,000	48,88,000	48,49,000	52,00,000
Less: Tax@ 40%	20,80,000	19,55,200	19,39,600	20,80,000
EAT (₹)	31,20,000	29,32,800	29,09,400	31,20,000
Less: Preference Dividends (₹)	-	-	-	2,34,000
(a) Net Earnings available for equity shares (₹)	31,20,000	29,32,800	29,09,400	28,86,000
(b) No. of equity shares	20,80,000	18,20,000	16,90,000	16,90,000
(c) EPS (a / b) (₹)	1.50	1.61	1.72	1.71
Financial leverage $\left(\frac{EBIT}{EBT}\right)$	1.00	1.06	1.07	1.08*

* Financial Leverage in the case of Preference dividend = $\left(\frac{EBIT}{(EBIT - Interest) - \left(\frac{Dp}{(1-t)}\right)}\right)$

$$\left(\frac{52,00,000}{(52,00,000 - 0) - \left(\frac{2,34,000}{(1 - 40)}\right)}\right) = \left(\frac{52,00,000}{48,10,000}\right) = 1.08$$

Q.11 PL Statement | RTP May 22

Company P and Q are having same earnings before tax. However, t he margin of safety of Company P is 0.20 and, for Company Q, is 1.25 times than that of Company P. The interest expense of Company P is ₹ 1,50,000 and, for Company Q, is 1/3rd less than that of Company P. Further, the financial leverage of Company P is 4 and, for Company Q, is 75% of Company P.

Other information is given as below:

Particulars	Company P	Company Q
Profit volume ratio	25%	33.33%
Tax rate	45%	45%

You are required to PREPARE Income Statement for both the companies.

Ans.

Income Statement

Particulars	Company P (₹)	Company Q (₹)
Sales	40,00,000	18,00,000
Less: Variable Cost	30,00,000	12,00,000
Contribution	10,00,000	6,00,000
Less: Fixed Cost	8,00,000	4,50,000
EBIT	2,00,000	1,50,000
Less: Interest	1,50,000	1,00,000
EBT	50,000	50,000
Tax (45%)	22,500	22,500
EAT	27,500	27,500

Workings:

(i) Margin of Safety

For Company P = 0.20

For Company Q = 0.20 x 1.25 = 0.25

(ii) Interest Expenses

For Company P = ₹ 1,50,000

For Company Q = ₹ 1,50,000 (1-1/3) = ₹ 1,00,000

(iii) Financial Leverage

For Company P = 4

For Company Q = 4 x 75% = 3

(iv) EBIT

For Company A

Financial Leverage	= EBIT/(EBIT- Interest)
4	= EBIT/(EBIT- ₹ 1,50,000)
4EBIT – ₹ 6,00,000	= EBIT
3EBIT	= ₹ 6,00,000
EBIT	= ₹ 2,00,000

For Company B

Financial Leverage	= EBIT/(EBIT - Interest)
3	= EBIT/(EBIT – ₹ 1,00,000)
3EBIT – ₹ 3,00,000	= EBIT
2EBIT EBIT	= ₹ 3,00,000
Contribution	= **₹ 1,50,000**

(v) For Company A

Operating Leverage

= 1/Margin of Safety

Operating Leverage = 1/0.20 = 5

5 = Contribution/EBIT

Contribution = Contribution/₹ 2,00,000

For Company B = ₹ 10,00,000

Operating Leverage

= 1/Margin of Safety

Operating Leverage = 1/0.25 = 4

4 = Contribution/EBIT

Contribution = Contribution/₹ 1,50,000

Sales = ₹ 6,00,000

(vi) For Company A

Profit Volume Ratio = 25%

Profit Volume Ratio = Contribution/Sales 100

25% = ₹ 10,00,000/Sales

Sales = ₹ 10,00,000/25%

Sales = ₹ 40,00,000

For Company B

Profit Volume Ratio = 33.33%

Therefore, Sales = ₹ 6,00,000/33.33%

Sales = ₹ 18,00,000

Q.12 Raise money by Equity or Debt | RTP Dec 21

The following particulars relating to Navya Ltd. for the year ended 31st March 2021 is given:

Output	1,00,000 units at normal
Selling price per unit	₹ 40
Variable cost per unit	₹ 20
Fixed cost	₹ 10,00,000

The capital structure of the company as on 31st March, 2021 is as follows:

Particulars	₹
Equity share capital (1,00,000 shares of ₹ 10 each)	10,00,000
Reserves and surplus	5,00,000
7% debentures	10,00,000
Current liabilities	5,00,000
Total	**30,00,000**

Navya Ltd. has decided to undertake an expansion project to use the market potential, that will involve ₹ 10 lakhs. The company expects an increase in output by 50%. Fixed cost will be increased by ₹ 5,00,000 and variable cost per unit will be decreased by 10%. The additional output can be sold at the existing selling price without any adverse impact on the market.

The following alternative schemes for financing the proposed expansion programme are planned:

(i) Entirely by equity shares of ₹ 10 each at par.

(ii) ₹ 5 lakh by issue of equity shares of ₹ 10 each and the balance by issue of 6% debentures of ₹ 100 each at par.

(iii) Entirely by 6% debentures of ₹ 100 each at par.

FIND out which of the above-mentioned alternatives would you recommend for Navya Ltd. with reference to the risk and return involved, assuming a corporate tax of 40%.

Ans. **Statement showing Profitability of Alternative Schemes for Financing**

(₹ in '00,000)

Particulars	Existing	Alternative Schemes		
		(i)	(ii)	(iii)
Equity Share capital (existing)	10	10	10	10
New issues	-	10	5	-
	10	**20**	**15**	**10**
7% debentures	10	10	10	10
6% debentures	-	-	5	10
	20	**30**	**30**	**30**
Debenture interest (7%)	0.7	0.7	0.7	0.7
Debenture interest (6%)	-	-	0.3	0.6
	0.7	**0.7**	**1.0**	**1.3**
Output (units in lakh)	1	1.5	1.5	1.5
Contribution per. unit (₹) (Selling price - Variable Cost)	**20**	**22**	**22**	**22**
Contribution (₹ lakh)	**20**	**33**	**33**	**33**
Less: Fixed cost	10	15	15	15

EBIT	**10**	**18**	**18**	**18**
Less: Interest (as calculated above)	0.7	0.7	1.0	1.3
EBT	**9.3**	**17.3**	**17**	**16.7**
Less: Tax (40%)	3.72	6.92	6.8	6.68
EAT	**5.58**	**10.38**	**10.20**	**10.02**
Operating Leverage (Contribution /EBIT)	**2.00**	**1.83**	**1.83**	**1.83**
Financial Leverage (EBIT/EBT)	**1.08**	**1.04**	**1.06**	**1.08**
Combined Leverage (Contribution/EBT)	**2.15**	**1.91**	**1.94**	**1.98**
EPS (EAT/No. of shares) (₹)	**5.58**	**5.19**	**6.80**	**10.02**
Risk	**-**	**Lowest**	**Lower than option (3)**	**Highest**
Return	**-**	**Lowest**	**Lower than option (3)**	**Highest**

From the above figures, we can see that the Operating Leverage is same in all alternatives though Financial Leverage differs. Alternative (iii) uses the maximum amount of debt and result into the highest degree of financial leverage, followed by alternative (ii). Accordingly, risk of the company will be maximum in these options. Corresponding to this scheme, however, maximum EPS (i.e., ₹ 10.02 per share) will be also in option (iii).

So, if Navya Ltd. is ready to take a high degree of risk, then alternative (iii) is strongly recommended. In case of opting for less risk, alternative (ii) is the next best option with a reduced EPS of ₹ 6.80 per share. In case of alternative (i), EPS is even lower than the existing option, hence not recommended.

Q.13 EPS / OL / CL | RTP May 20

The following information is related to YZ Company Ltd. for the year ended 31st March, 2020:

Equity share capital (of ₹ 10 each)	₹ 50 lakhs
12% Bonds of ₹ 1,000 each	₹ 37 lakhs
Sales	₹ 84 lakhs
Fixed cost (excluding interest)	₹ 6.96 lakhs
Financial leverage	1.49
Profit-volume Ratio	27.55% Income
Tax Applicable	40%

You are required to CALCULATE:

(i) Operating Leverage;
(ii) Combined leverage; and
(iii) Earnings per share.

Show calculations up-to two decimal points.

Ans. **Computation of Profits after Tax (PAT)**

Particulars	Amount (₹)
Sales	84,00,000
Contribution (Sales × P/V ratio)	23,14,200
Less: Fixed cost (excluding Interest)	(6,96,000)
EBIT (Earnings before interest and tax)	16,18,200
Less: Interest on debentures (12% ₹37 lakhs)	(4,44,000)
Less: Other fixed Interest (balancing figure)	(88,160)
EBT (Earnings before tax)	10,86,040*

Less: Tax @ 40%	4,34,416
PAT (Profit after tax)	6,51,624

(i) Operating Leverage:

$$= \frac{\text{Contribution}}{\text{EBIT}} = \frac{23,14,200}{16,18,200} = 1.43$$

(ii) Combined Leverage:

= Operating Leverage × Financial Leverage

= 1.43 □ 1.49 = 2.13

Or,

$$\text{Combined Leverage} = \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{EBT}}$$

$$\text{Combined Leverage} = \frac{\text{Contribution}}{\text{EBT}} = \frac{23,14,200}{10,86,040} = 2.13$$

$$\text{*Financial Leverage} = \frac{\text{EBIT}}{\text{EBT}} = \frac{16,18,200}{\text{EBT}} = 1.49$$

$$\text{So, EBT} = \frac{16,18,200}{1.49} = ₹10,86,040$$

Accordingly, other fixed interest

= ₹ 16,18,200 - ₹ 10,86,040 - ₹ 4,44,000 = ₹ 88,160

(iii) Earnings per share (EPS):

$$= \frac{\text{PAT}}{\text{No.ofshares outstanding}} = \frac{6,51,624}{5,00,000\text{equity shares}} = ₹ 1.30$$

Q.14 OL & Beta theory | RTP Nov 19

The following summarises the percentage changes in operating income, percentage changes in revenues, and betas for four listed firms.

Firm	Change in revenue	Change in operating income	Beta
A Ltd.	35%	22%	1.00
B Ltd.	24%	35%	1.65
C Ltd.	29%	26%	1.15
D Ltd.	32%	30%	1.20

Required:

(i) CALCULATE the degree of operating leverage for each of these firms. Comment also.

(ii) Use the operating leverage to EXPLAIN why these firms have different beta.

Ans. (i) $\text{Degree of operating leverage} = \frac{\%\text{Change in Operating income}}{\%\text{Change in Revenues}}$

A Ltd.	=	0.22 / 0.35	=	0.63
B Ltd.	=	0.35 / 0.24	=	1.46
C Ltd.	=	0.26 / 0.29	=	0.90
D Ltd.	=	0.30 / 0.32	=	0.94

It is level specific.

(ii) High operating leverage leads to high beta. So when operating leverage is lowest i.e. 0.63, Beta is minimum (1) and when operating leverage is maximum i.e. 1.46, beta is highest i.e. 1.65

Q.15 ROI / EPS / OL / FL / CL | RTP Nov 18

A firm has sales of ₹ 75,00,000 variable cost is 56% and fixed cost is₹ 6,00,000. It has a debt of ₹ 45,00,000 at 9% and equity of ₹ 55,00,000. You are required to INTERPRET:

(i) The firm's ROI?
(ii) Does it have favourable financial leverage?
(iii) If the firm belongs to an industry whose capital turnover is 3, does it have a high or low capital turnover?
(iv) The operating, financial and combined leverages of the firm?
(v) If the sales is increased by 10% by what percentage EBIT will increase?
(vi) At what level of sales the EBT of the firm will be equal to zero?
(vii) If EBIT increases by 20%, by what percentage EBT will increase?

Ans.

Income Statement

Particulars	Amount (₹)
Sales	75,00,000
Less: Variable cost (56% of 75,00,000)	(42,00,000)
Contribution	33,00,000
Less: Fixed costs	(6,00,000)
Earnings before interest and tax (EBIT)	27,00,000
Less: Interest on debt (@ 9% on ₹ 45 lakhs)	(4,05,000)
Earnings before tax (EBT)	22,95,000

(i) $ROI = \frac{EBIT}{\text{Capital employed}} \times 100 = \frac{EBIT}{\text{Equity} + \text{Debt}} \times 100$

$= \frac{27,00,000}{55,00,000 + 45,00,000} \times 100 = 27\%$

(ROI is calculated on Capital Employed)

(ii) ROI = 27% and Interest on debt is 9%, hence, it has a favourable financial leverage.

(iii) Capital Turnover = $\frac{\text{Net Sales}}{\text{Capital}}$

Or $= \frac{\text{Net Sales}}{\text{Capital}} = \frac{75,00,000}{1,00,00,000} = 0.75$

Which is very low as compared to industry average of 3.

(iv) Calculation of Operating, Financial and Combined leverages

(a) Operating Leverage = $\frac{\text{Contribution}}{EBIT} = \frac{33,00,000}{27,00,000}$ = **1.22 (approx)**

(b) Financial Leverage = $\frac{EBIT}{EBT} = \frac{27,00,000}{22,95,000}$ = **1.18 (approx)**

(c) Combined Leverage = $\frac{\text{Contribution}}{EBT} = \frac{33,00,000}{22,95,000}$ = **1.44 (approx)**

Or = Operating Leverage × Financial Leverage = 1.22 × 1.18 = 1.44 (approx)

(v) Operating leverage is 1.22. So if sales is increased by 10%. EBIT will be increased by 1.22 × 10 i.e. 12.20% (approx)

(vi) Since the combined Leverage is 1.44, sales have to drop by 100/1.44 i.e. 69.44% to bring EBT to Zero

Accordingly, New Sales = ₹ 75,00,000 × (1-0.6944)
= ₹ 75,00,000 × 0.3056
= ₹ 22,92,000 (approx)

Hence at ₹22,92,000 sales level EBT of the firm will be equal to Zero.

(vii) Financial leverage is 1.18. So, if EBIT increases by 20% then EBT will increase by 1.18 × 20 = 23.6% (approx)

Q.16 EBIT / Sales / Fixed Cost | MTP Nov 23 (1)

Following are the selected financial information of A Ltd. and B Ltd. for the current Financial Year:

	A Ltd.	B Ltd.
Variable Cost Ratio	60%	50%
Interest	₹ 30,000	₹ 1,20,000
Operating Leverage	6	3
Financial Leverage	4	3
Tax Rate	30%	30%

You are required to FIND out:

(i) EBIT

(ii) Sales

(iii) Fixed Cost

(iv) Identify the company which is better placed with reasons based on leverages.

Ans. **Company A**

(i) Financial Leverage $= \frac{\text{EBIT}}{\text{EBT i.e EBIT - Interest}}$

So, $4 = \frac{\text{EBIT}}{\text{EBIT} - ₹\ 30{,}000}$

Or, 4 (EBIT – 30,000) = EBIT

Or, 3 EBIT = 1,20,000

Or, EBIT = 40,000

(ii) Operating Leverage $= \frac{\text{Contribution}}{\text{EBIT}}$ Or, $6 = \frac{\text{Contribution}}{40{,}000}$

Or Contribution = ₹ 2, 40,000

Sales $= \frac{\text{Contribution}}{\text{P / V Ratio}\ (1\ -\ \text{variable cost ratio})} = \frac{2{,}40{,}000}{40\%}$ = ₹ 6,00,000

(iii) Fixed Cost = Contribution – EBIT
= ₹ 2, 40,000 – 40,000

Or Fixed cost = ₹ 2,00,000

Company B

(i) Financial Leverage $= \frac{EBIT}{EBT \text{ i.e } EBIT - Interest}$

So, 3 $= \frac{EBIT}{EBIT - 1,20,000}$

Or, 3 (EBIT – ₹1,20,000) = EBIT
Or, 3 EBIT -₹ 3,60,000 = EBIT
Or, 2 EBIT = ₹ 3,60,000
Or, EBIT = ₹ 1,80,000

(ii) Operating Leverage $= \frac{Contribution}{EBIT}$

Or, 3 $= \frac{Contribution}{1,80,000}$

Or, Contribution = ₹ 5,40,000

Sales = $\frac{Contribution}{P/V Ratio\ (1\ -\ variable\ cost\ ratio)} = \frac{5,40,000}{50\%}$ = ₹ 10,80,000

(iii) Fixed Cost = Contribution – EBIT
= ₹ 5,40,000 – ₹ 1,80,000
Or, Fixed cost = ₹ 3,60,000

Income Statements of Company A and Company B

	Company A (₹)	Company B (₹)
Sales	6,00,000	10,80,000
Less: Variable cost	3,60,000	5,40,000
Contribution	2,40,000	5,40,000
Less: Fixed Cost	2,00,000	3,60,000
Earnings before interest and tax (EBIT)	40,000	1,80,000
Less: Interest	30,000	1,20,000
Earnings before tax (EBT)	10,000	60,000
Less: Tax @ 30%	3,000	18,000
Earnings after tax (EAT)	7,000	42,000

Comment based on Leverage

Comment based on leverage – Company B is better than company A of the following reasons:

- Capacity of Company B to meet interest liability is better than that of companies A (from EBIT/ Interest ratio)

  [A = $\frac{40,000}{30,000}$ = 1.33, B = $\frac{1,80,\ 000}{1,20,000}$ = 1.50]

  Company B has the least financial risk as the total risk (business and financial) of company B is lower (combined leverage of Company A – 24 and Company B- 9)

Q.17 OL / Break Even | MTP Nov 22 (1)

Following information is provided relating to SVB Ltd.:

Sales price ₹ 21 per unit

Variable cost	₹ 13.50 per unit
Break-even point	30,000 units

You are required to CALCULATE operating leverage at sales volume 37,500 units and 45,000 units.

Ans.

Computation of Operating Leverage (OL)

Selling Price = ₹ 21 per unit

Variable Cost = ₹ 13.50 per unit

Fixed Cost = BEP × (Selling price – Variable cost) = 30,000 × (21 – 13.50) = 30,000 × 7.5 = 2,25,000

Particulars	For 37,500 units (₹)	For 45,000 units (₹)
Sales (@ ₹ 21 /unit)	7,87,500	9,45,000
Less: Variable Cost (@ 13.50 /unit)	5,06,250	6,07,500
Contribution	2,81,250	3,37,500
Less: Fixed Cost	2,25,000	2,25,000
Earnings before Interest and tax (EBIT)	56,250	1,12,500
Operating Leverage $\left(\frac{\text{Contribution}}{\text{EBIT}}\right)$	$\left(\frac{2,81,250}{56,250}\right)$	$\left(\frac{2,81,250}{1,12,500}\right)$
Operating Leverage	5 times	3 times

Q.18 PL Statement | MTP May 22 (2)

From the given details, PREPARE Income Statement for Alpha Ltd. and Beta Ltd.

Particulars	Alpha Ltd.	Beta Ltd.
Operating Leverage	1.875	1.800
Financial Leverage	1.600	1.250
PV Ratio	60%	50%
Profit after tax	₹ 3,00,000	₹ 2,40,000
Tax rate	40%	40%

Ans.

Particulars	Alpha Ltd. (₹)	Beta Ltd. (₹)	
Sales	25,00,000	18,00,000	
Less: Variable Cost	10,00,000	9,00,000	(Bal. fig.)
Contribution	15,00,000	9,00,000	
Less: Fixed Cost	7,00,000	4,00,000	(Bal. fig.)
EBIT	8,00,000	5,00,000	
Less: Interest	3,00,000	1,00,000	(Bal. fig.)
PBT	5,00,000	4,00,000	
Less: Tax (40%)	2,00,000	1,60,000	
PAT	3,00,000	2,40,000	

Working Note:

Particulars	Alpha Ltd.	Beta Ltd.

PAT	₹ 3,00,000	₹ 2,40,000
Tax Rate (t)	40%	40%
PBT = PAT/(I-t)	$\frac{3,00,000}{1-0.4}$ = 5,00,000	$\frac{2,40,000}{1-0.4}$ = 4,00,000
Finance Leverage	1.60	1.25
EBIT = PBT × FL	5,00,000 × 1.6 = 8,00,000	4,00,000 × 1.25 = 5,00,000
Operating Leverage	1.875	1.800
Contribution = EBIT × OL	8,00,000 × 1.875 = 15,00,000	5,00,000 × 1.8 = 9,00,000
PV ratio	60%	50%
Sales = $\frac{\text{Contribution}}{\text{PV ratio}}$	$\frac{15,00,000}{.60}$ = 25,00,000	$\frac{9,00,000}{.50}$ = 18,00,000

Q.19 FL / PV / EPS | MTP Dec 21 (1)

(a) The following details of PQR Limited for the year ended 31st March, 2021 are given below:

Operating leverage	1.4
Combined leverage	2.8
Fixed Cost (Excluding interest)	₹ 2.10 lakhs
Sales	₹ 40.00 lakhs
10% Debentures of ₹ 100 each	₹ 25.00 lakhs
Equity Share Capital of ₹ 10 each	₹ 20.00 lakhs
Income tax rate	30 per cent

REQUIRED:

(i) Calculate Financial leverage

(ii) Calculate P/V ratio and Earning per Share (EPS)

(iii) If the company belongs to an industry, whose assets turnover is 1.6, does it have a high or low assets turnover?

(iv) At what level of sales, the Earning before Tax (EBT) of the company will be equal to zero? In the question, assume that 10% Debentures and Share Capital consists of total liabilities.

(b) Write a short note on electronic fund transfer.

Ans. **(a)** **(i)** **Financial leverage**

Combined Leverage = Operating Leverage x Financial Leverage

So, financial leverage = Combined Leverage/Operating Leverage

= 2.8/1.4 = 2

(ii) **P/V Ratio and EPS**

Operating Leverage = $\frac{\text{Contribution}}{\text{Contribution} - \text{Fixed Cost}}$

$$1.4 = \frac{\text{Contribution}}{\text{Contribution} - 2,10,000}$$

1.4 Contribution – 2,94,000 = Contribution
0.4 Contribution = 2,94,000
Contribution = 7,35,000

Now, P/V Ratio = $\frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{7,35,000}{40,00,000} \times 100 = 18.375\%$

$$\text{EPS} = \frac{\text{Profit after tax (PAT)}}{\text{No. of equity shares}}$$

Earning before tax (EBT) = Contribution – Fixed Cost – Interest
= 7,35,000 – 2,10,000 – 2,50,000
= 2,75,000

Profit after tax = EBT – Tax @ 30%
= 2,75,000 – 82,500
= 1,92,500

EPS = $\frac{1,92,500}{2,00,000}$ = 0.9625

(iii) Asset Turnover

Total Assets = Equity Share Capital + Debentures = ₹ 20 lakhs + ₹ 25 lakhs = ₹ 45 lakhs

Asset Turnover = $\frac{\text{Sales}}{\text{Total Assets}} = \frac{40,00,000}{45,00,000} = 0.89$

0.89 < 1.6, means lower than industry turnover.

(iv) EBT zero means 100% reduction in EBT. Since combined leverage is 2.8, sales have to be dropped by 100/2.8 = 35.71%. Hence new sales will be
40,00,000 x (100% – 35.71%) = 25,71,600

(b) Electronic Fund Transfer: With the developments which took place in the information technology, the present banking system has switched over to the computerization of banks branches to offer efficient banking services and cash management services to their customers. The network wil l be linked to the different branches, banks. This helped the customers in the following ways:

(i) Instant updating of accounts.
(ii) Quick transfer of funds.
(iii) Instant information about foreign exchange rates.

Q.20 OL / FL | MTP May 21 (2)

Following data of MT Ltd. under Situations 1, 2 and 3 and Financial Plan A and B is given: Installed Capacity (units) 3,600

Actual Production and Sales (units)		2,400
Selling price per unit (Rs.)		30
Variable cost per unit (Rs.)		20
Fixed Costs (Rs.):	Situation 1	3,000
	Situation 2	6,000
	Situation 3	9,000

Capital Structure :

Particulars	Financial Plan

	A	B
Equity	Rs. 15,000	Rs. 22,500
Debt	Rs. 15,000	Rs. 7,500
Cost of Debt	12%	12%

Required:

(i) CALCULATE the operating leverage and financial leverage.

(ii) FIND out the combinations of operating and financial leverage which give the highest value and the least value.

Ans. **(i)** **Operating Leverage**

	Situation 1 (Rs.)	Situation 2 (Rs.)	Situation 3 (Rs.)
Sales (S)			
2,400 units @ Rs. 30 per unit	72,000	72,000	72,000
Less: Variable Cost (VC) @ Rs. 20 per unit	48,000	48,000	48,000
Contribution (C)	24,000	24,000	24,000
Less: Fixed Cost (FC)	3,000	6,000	9,000
EBIT	21,000	18,000	15,000
Operating Leverage = $\frac{C}{EBIT}$	$\frac{\text{Rs. 24,000}}{\text{Rs. 21,000}}$ = 1.14	$\frac{\text{Rs. 24,000}}{\text{Rs. 18,000}}$ = 1.33	$\frac{\text{Rs. 24,000}}{\text{Rs. 15,000}}$ = 1.60

Financial Leverage

	Financial Plan	
	A (Rs.)	B (Rs.)
Situation 1		
EBIT	21,000	21,000
Less: Interest on debt (Rs. 15,000 x 12%);(Rs. 7,500 x 12%)	1,800	900
EBT	19,200	20,100
Financial Leverage = $\frac{EBIT}{EBT}$	$\frac{\text{Rs. 21,000}}{\text{Rs. 19,200}}$ = 1.09	$\frac{\text{Rs. 21,000}}{\text{Rs. 20,100}}$ = 1.04
Situation 2		
EBIT	18,000	18,000
Less: Interest on debt	1,800	900
EBT	16,200	17,100
Financial Leverage = $\frac{EBIT}{EBT}$	$\frac{\text{Rs. 18,000}}{\text{Rs. 16,200}}$ = 1.11	$\frac{\text{Rs. 18,000}}{\text{Rs. 17,100}}$ = 1.05
Situation 3		
EBIT	15,000	15,000
Less: Interest on debt	1,800	900
EBT	13,200	14,100
Financial Leverage = $\frac{EBIT}{EBT}$	$\frac{\text{Rs. 15,000}}{\text{Rs. 13,200}}$ = 1.14	$\frac{\text{Rs. 15,000}}{\text{Rs. 14,100}}$ = 1.06

(ii) Combined Leverages

CL = OL x FL

	Financial Plan	
	A (Rs.)	B (Rs.)
(a) Situation 1	1.14 x 1.09 = 1.24	1.14 x 1.04 = 1.19
(b) Situation 2	1.33 x 1.11 = 1.48	1.33 x 1.05 = 1.40
(c) Situation 3	1.60 x 1.14 = 1.82	1.60 x 1.06 = 1.70

The above calculations suggest that the highest value is in Situation 3 financed by Financial Plan A and the lowest value is in the Situation 1 financed by Financial Plan B.

Q.21 OL / CL | MTP May 21 (1)

Following information are related to four firms of the same industry:

Firm	Change in Revenue	Change in Operating Income	Change in Earning per Share
P	25%	23%	30%
Q	27%	30%	26%
R	24%	36%	20%
S	20%	30%	20%

For all the firms, FIND OUT:

(i) Degree of operating leverage, and

(ii) Degree of combined leverage.

Ans. **Calculation of Degree of Operating leverage and Degree of Combined leverage**

Firm	Degree of Operating Leverage (DOL) = $\frac{\text{\% change in Operating Income}}{\text{\% change in Revenue}}$	Degree of Combined Leverage (DCL) = $\frac{\text{\% change in EPS}}{\text{\% change in Revenue}}$
P	$\frac{23\%}{25\%}$ = 0.92	$\frac{30\%}{25\%}$ = 1.2
Q	$\frac{30\%}{27\%}$ = 1.11	$\frac{26\%}{27\%}$ = 0.96
R	$\frac{36\%}{24\%}$ = 1.50	$\frac{20\%}{24\%}$ = 0.83
S	$\frac{30\%}{20\%}$ = 1.50	$\frac{20\%}{20\%}$ = 1.00

Q.22 PL Statement | MTP Nov 18 (2)

From the following, PREPARE Income Statement of Company A and B.

Company	A	B
Financial leverage	3:1	4:1

Interest	Rs.20,000	Rs.30,000
Operating leverage	4:1	5:1
Variable Cost as a Percentage to Sales	$66\frac{2}{3}$ %	75%
Income tax Rate	45%	45%

Ans.

Working Notes:

Company A

Financial leverage = $\frac{EBIT}{EBT} = \frac{3}{1}$ = Or, EBIT = 3× EBT (1)

Again EBIT – Interest = EBT

Or, EBIT- 20,000 = EBT (2)

Taking (1) and (2) we get

3 EBT- 20,000 = EBT

Or, 2 EBT = 20,000 or EBT = Rs.10,000

Hence EBIT = 3EBT = Rs.30,000

Again, we have operating leverage = $\frac{Contribution}{EBIT} = \frac{4}{1}$

EBIT = Rs. 30,000, hence we get

Contribution = 4 × EBIT = Rs.1,20,000

Now variable cost = $66\frac{2}{3}$ % on sales

Contribution = 100 - $66\frac{2}{3}$ % i.e. $33\frac{1}{3}$ % on sales

Hence, sales = $\frac{1,20,000}{33\frac{1}{3}\%}$ = Rs. 3,60,000

Same way EBIT, EBT, contribution and sales for company B can be worked out.

Company B

Financial leverage = $\frac{EBIT}{EBT} = \frac{4}{1}$ or EBIT = 4 EBT (3)

Again EBIT – Interest = EBT or EBIT – 30,000 = EBT (4)

Taking (3) and (4) we get, 4EBT- 30,000 = EBT

Or, 3EBT = 30,000 Or, EBT=10,000

Hence, EBIT = 4 × EBT= 40,000

Again, we have operating leverage = $\frac{Contribution}{EBIT} = \frac{5}{1}$

EBIT= 40,000; Hence we get contribution = 5 × EBIT = 2,00,000

Now variable cost =75% on sales

Contribution = 100- 75% i.e. 25% on sales

Hence Sales = $\frac{2,00,000}{25\%}$ = Rs. 8,00,000

Income Statement

	A (Rs.)	B (Rs.)
Sales	3,60,000	8,00,000
Less: Variable Cost	2,40,000	6,00,000
Contribution	1,20,000	2,00,000

Less: Fixed Cost (bal. Fig)	90,000	1,60,000
EBIT	30,000	40,000
Less: Interest	20,000	30,000
EBT	10,000	10,000
Less: Tax 45%	4,500	4,500
EAT	5,500	5,500

Q.23 EBIT / OL | ICAI MAT

CALCULATE the operating leverage for each of the four firms A, B, C and D from the following price and cost data:

	Firms			
	A (₹)	B(₹)	C(₹)	D(₹)
Sale price per unit	*20*	*32*	*50*	*70*
Variable cost per unit	*6*	*16*	*20*	*50*
Fixed operating cost	*60,000*	*40,000*	*1,00,000*	*Nil*

What calculations can you draw with respect to levels of fixed cost and the degree of operating leverage result? EXPLAIN. Assume number of units sold is 5,000.

Ans.

	Firms			
	A (₹)	B (₹)	C (₹)	D (₹)
Sales (units)	5,000	5,000	5,000	5,000
Sales revenue (Units × sale price per unit)	1,00,000	1,60,000	2,50,000	3,50,000
Less: Variable cost (Units × variable cost per unit)	(30,000)	(80,000)	(1,00,000)	(2,50,000)
Less: Fixed operating costs	(60,000)	(40,000)	(1,00,000)	Nil
EBIT	10,000	40,000	50,000	1,00,000

$$DOL = \frac{\text{Current sales}(S) - \text{Variable costs}(VC)}{\text{Current EBIT}}$$

$$DOL_{(A)} = \frac{1,00,000 - 30,000}{10,000} = 7$$

$$DOL_{(B)} = \frac{1,60,000 - 80,000}{40,000} = 2$$

$$DOL_{(C)} = \frac{2,50,000 - 1,00,000}{50,000} = 3$$

$$DOL_{(D)} = \frac{3,50,000 - 2,50,000}{1,00,000} = 1$$

The operating leverage exists only when there are fixed costs. In the case of firm D, there is no magnified effect on the EBIT due to change in sales. A 20 per cent increase in sales has resulted in a 20 per cent increase in EBIT. In the case of other firms, operating leverage exists. It is maximum in firm A, followed by firm C and minimum in firm B. The interception of DOL of 7 is that 1 per cent change in sales results in 7 per cent change in EBIT level in the direction of the change of sales level of firm A.

Q.24 % change in EPS | ICAI MAT

From the following information extracted from the books of accounts of Imax Ltd., CALCULATE percentage change in earnings per share, if sales increase by 10% and Fixed Operating cost is ₹ 1,57,500.

Particulars	*(₹)*
EBIT (Earnings before Interest and Tax)	*31,50,000*
Earnings before Tax (EBT)	*14,00,000*

Ans.

Operating Leverage (OL)

$$= \frac{\text{Contribution}}{\text{EBIT}} = \frac{\text{EBIT} + \text{Fixed Cost}}{\text{EBIT}}$$

$$= \frac{31,50,000 + 1,57,500}{31,50,000} = 1.05$$

Financial Leverage (FL)

$$= \frac{\text{EBIT}}{\text{EBT}} = \frac{31,50,000}{14,00,000} = 2.25$$

Combined Leverage (CL)

= 1.05 x 2.25 = 2.3625

Percentage Change in Earnings per share

$$DCL = \frac{\%\text{change in EPS}}{\%\text{change in Sales}} = 2.3625 = \frac{\%\text{change in EPS}}{10}$$

% change in EPS = 23.625%

Hence, if sales increases by 10%, EPS will be increased by 23.625%.

Q.25 EPS | ICAI MAT

The Sale revenue of TM excellence Ltd. @ ₹ 20 Per unit of output is ₹ 20 lakhs and Contribution is ₹ 10 lakhs. At the present level of output, the DOL of the company is 2.5. The company does not have any Preference Shares. The number of Equity Shares are 1 lakh. Applicable corporate Income Tax rate is 50% and the rate of interest on Debt Capital is 16% p.a. CALCULATE the EPS (at sales revenue of ₹ 20 lakhs) and amount of Debt Capital of the company if a 25% decline in Sales will wipe out EPS.

Ans.

(i) Calculation of Fixed Cost

$$DOL = \frac{\text{Contribution}}{\text{Contribution - Fixed Cost}} \text{ or } 2.5 = \frac{10,00,000}{\text{EBIT}} \text{ or EBIT= ₹ 4,00,000}$$

EBIT = Contribution – Fixed Cost

₹ 4,00,000 = ₹ 10,00,000 – Fixed Cost
Fixed Cost = ₹ 10,00,000 - ₹ 4,00,000 = ₹ 6,00,000

(ii) Calculation of Degree of Combined Leverage (DCL)

Question says that 25% change in sales will wipe out EPS. Here, wipe out means it will reduce EPS by 100%.

$$DCL = \frac{\text{Percentage Change in EPS}}{\text{PercentageChange in Sales}} = \frac{100\%}{25\%} = 4$$

(iii) Calculation of Degree of Financial Leverage (DFL)

DCL = DOL x DFL
4 = 2.5 x DFL
So, DFL = 1.6

(iv) Calculation of Interest and amount of Debt

$$DFL = \frac{EBIT}{EBIT - Int} \text{ Or, } 1.6 = \frac{4,00,000}{4,00,000 - Int} \text{ Or, Int} = ₹\ 1,50,000$$

Debt x Interest rate = Amount of Interest
Debt x 16% = ₹ 1,50,000
Debt = ₹ 9,37,500

(v) Calculation of Earnings per share (EPS)

$$EPS = \frac{(EBIT - Int)(1 - t)}{N} = \frac{(₹4,00,000 - ₹1,50,000)0.5}{1,00,000} = ₹\ 1.25$$

Q.26 MTP SEP 2025(2)

ABC Engineering Ltd., a mid-sized capital-intensive manufacturing company, is evaluating the risk-return profile of its operations. The company currently operates at 75% of its production capacity. The following information relates to its current operations:

Income Statement at 75% Capacity

Particulars	Amount (₹)
Sales Revenue	7,50,00,000
Variable Cost	4,50,00,000
Fixed Operating Costs	1,20,00,000
EBIT (Earnings Before Interest & Tax)	?
Interest on Debt (12% Debentures)	?
EBT (Earnings Before Tax)	?
Tax Rate	30%

Additional Information:

1. The company has equity share capital of ₹2,00,00,000 (shares of ₹ 10 each, fully paid-up).
2. The current Debt-Equity ratio is 0.75:1, and the company is considering increasing its production to 90% capacity.

3. At 90% capacity:
   - Sales and variable cost per unit will increase proportionately.
   - Fixed operating costs will increase by ₹ 10,00,000 due to additional maintenance, supervisory staff, and overheads.
   - To finance the additional working capital and fixed overheads, the company is considering issuing additional ₹ 50,00,000 in 13% debentures.
4. The management wants to analyze the impact of increased capacity on Operating Leverage, Financial Leverage, and Combined Leverage and the change in EPS (Earnings Per Share) under the new financial plan.

You are required to:

(i) At 75% Capacity (Current Scenario)
   (a) CALCULATE EPS by filling the missing figures.
   (b) CALCULATE Degree of Operating Leverage (DOL), Degree of Financial Leverage (DFL) and Degree of Combined Leverage (DCL).

(ii) At 90% Capacity with Revised Financial Plan
   (a) CALCULATE new DOL, DFL, and DCL.
   (b) Revised EPS.

(iii) ADVICE as to whether the company proceed with the capacity expansion and debt issue.

Ans.

(i) Current Scenario at 75% Capacity

(a) Calculation of EBIT, EBT, Profit after tax and Earning Per Share

Particulars	Amount (₹)
Sales Revenue	7,50,00,000
Less: Variable Cost	4,50,00,000
Contribution	3,00,00,000
Less: Fixed Cost	1,20,00,000
EBIT	1,80,00,000
Less: Interest (1,50,00,000 x 12%)	18,00,000
EBT	1,62,00,000
Less: Tax@30%	48,60,000
Profit after tax	1,13,40,000
No. of Equity Shares	20,00,000
Earnings Per Share	5.67

(b) Calculation of Various Leverages

Degree of Operating Leverage (DOL):

$$DOL = \frac{Contribution}{EBIT} = 3,00,00,000 / 1,80,00,000 = 1.67$$

Degree of Financial Leverage (DFL):

$$DFL = \frac{EBIT}{EBT} = 1,80,00,000 / 1,62,00,000 = 1.11$$

Degree of Combined Leverage (DCL):

$$DCL = DOL \times DFL = 1.67 \times 1.11 = 1.85$$

(ii) New Scenario at 90% Capacity

(a) Revised calculation of EBIT, EBT, Profit after tax and Earning Per Share:

Particulars	Amount (₹)
Sales Revenue [7,50,00,000 × (90/75)]	9,00,00,000
Less: Variable Cost [4,50,00,000 × (90/75)]	5,40,00,000
Contribution	3,60,00,000
Less: Fixed Cost (1,20,00,000 + 10,00,000)	1,30,00,000
EBIT	2,30,00,000
Less: Interest (1,50,00,000 × 12%) + (50,00,000 × 13%)	24,50,000
EBT	2,05,50,000
Less: Tax@30%	61,65,000
Profit after tax	1,43,85,000
No. of Equity Shares	20,00,000
Earning Per Share (1,43,85,000 / 20,00,000)	7.19

(b) Revised Calculation of Various Leverages

DOL = 3,60,00,000 / 2,30,00,000 = 1.57

DFL = 2,30,00,000 / 2,05,50,000 = 1.12

DCL = 1.57 × 1.12 = 1.76

(c) At higher capacity utilization, the company is able to generate higher EBIT and EPS. However, it takes on slightly more financial risk by issuing 13% debentures. The company should go ahead with the capacity expansion and new financing plan, as the overall risk has been slightly reduced as indicated in the combined leverage while shareholder return by way of EPS has significantly increased.

Q.27 RTP SEP 2025

X Limited and Y Limited are two mid-sized companies operating in the same competitive industry. Both companies have recently undergone a financial performance review to assess their operational efficiency, cost structure, and overall financial risk. You, as a financial analyst, have been provided with selective financial indicators and are required to draw insights and comparisons based on leverage analysis and income statement reconstruction.

The management of X Limited has disclosed that the company is currently operating with a Margin of Safety (M/S) ratio of 0.1667. In contrast, Y Limited has a Margin of Safety that is twice as high as that of X Limited. Both companies maintain a Financial Leverage of 3. Their variable cost ratios are 60% for X Limited and 50% for Y Limited.

In terms of financing costs, X Limited incurs an annual interest expense of ₹30,000. Y Limited, however, incurs an interest cost that is 300% higher than X Limited. Both companies are subject to a corporate tax rate of 30%, which affects their net profitability after interest and taxes.

You are required to PREPARE Income statement for both the companies and IDENTIFY the company which is better placed with reasons based on leverages.

Ans.

Company X

(i) Financial Leverage $= \frac{\text{EBIT}}{\text{EBT i.e EBIT – Interest}}$

So, 3 = EBIT EBIT – ₹ 30,000

Or, 3 (EBIT – 30,000) = EBIT

Or, 2 EBIT = 90,000

	Or, EBIT	= 45,000
(ii)	Margin of safety	= 0.1667
	Operating Leverage	= 1/Margin of safety
		= 1/0.1667 = 6
		$= \frac{\text{Contribution}}{\text{EBIT}}$
	Or, 6	$= \frac{\text{Contribution}}{₹\ 45,000}$
	Or, Contribution	= ₹ 2, 70,000
	Sales	$= \frac{\text{Contribution}}{\text{P/V Ratio (1 – variable cost ratio)}}$
		$= \frac{₹\ 2,70,000}{40\%}$
		= ₹ 6,75,000
(iii)	Fixed Cost	= Contribution – EBIT
		= ₹ 2,70,000 – 45,000
	Or, Fixed cost	= ₹ 2,25,000

Company Y

(i)	Financial Leverage	$= \frac{\text{EBIT}}{\text{EBT i.e EBIT – Interest}}$
	So, 3	= EBIT EBIT – ₹ 1,20,000
	Or, 3 (EBIT – ₹ 1,20,000)	= EBIT
	Or, 3 EBIT – ₹ 3,60,000	= EBIT
	Or, EBIT	= ₹ 1,80,000
(ii)	Margin of safety	= 0.1667 x 2 = 0.3333
	Operating Leverage	= 1/Margin of safety
		= 1/0.3333 = 3
		$= \frac{\text{Contribution}}{\text{EBIT}}$
	Or, 3	$= \frac{\text{Contribution}}{₹\ 1,80,000}$
	Or, Contribution	= ₹ 5,40,000
	Sales	$= \frac{\text{Contribution}}{\text{P/V Ratio (1 - variable cost ratio)}}$
		= ₹ 5,40,000 = ₹ 10,80,000
(iii)	Fixed Cost	= Contribution – EBIT
		= ₹ 5,40,000 – ₹ 1,80,000
	Or, Fixed cost	= ₹ 3,60,000
(iv)	Interest	= ₹ 30,000+₹ 30,000x300% = ₹ 1,20,000

Income Statements of X Ltd and Y Ltd

	X Ltd (₹)	Y Ltd (₹)
Sales	6,75,000	10,80,000
Less: Variable cost	4,05,000	5,40,000
Contribution	2,70,000	5,40,000

Less: Fixed Cost	2,25,000	3,60,000
Earnings before interest and tax (EBIT)	45,000	1,80,000
Less: Interest	30,000	1,20,000
Earnings before tax (EBT)	15,000	60,000
Less: Tax @ 30%	4,500	18,000
Earnings after tax (EAT)	10,500	42,000

Comment based on Leverage

Comment based on leverage – Company Y is better than company X of the following reasons:

(i) Capacity of Company Y to meet interest liability is same that of companies X (from EBIT/Interest ratio)

[X = $\frac{₹\ 45,000}{₹\ 30,000}$ = 1.5, Y = $\frac{₹\ 1,80,000}{₹\ 1,20,000}$ = 1.5]

(ii) However, Company Y has lesser financial risk as the total risk (business and financial) of company Y is lower (combined leverage of Company X is 18 and Company Y is 9).

NOTES

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