6. LEVERAGES

CONCEPT WISE ANALYSIS OF PAST EXAM PAPERS OF IPCC

No.	Model Name	M-09	N-09	M-10	N-10	M-11	N-11	M-12	N-12	M-13	N-13	M-14	N-14	M-15	N-15	M-16	N-16
1.	CALCULATION OF DOL, DFL, DCL	-	-	-	4	5	8	-	5	-	5	-	-	4	-	5	5
2.	CALCULATION OF EPS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.	CALCULATION OF ROE, ROI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.	INCOME STATEMENT	-	8	-	-	-	-	-	-	-	-	-	-	-	5	-	-
5.	COMPREHENSIVE PROBLEMS	-	-	-	-	-	-	8	-	-	-	8	4	-	-	-	-
6.	MISCELLENEOUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1. Operating Leverage $= \dfrac{\%\text{ Change in E.B.I.T.}}{\%\text{ Change in sales}}$ or $\dfrac{\left\{\dfrac{\text{Increase in E.B.I.T.}}{\text{E.B.I.T.}}\right\}}{\left\{\dfrac{\text{Increase in sales}}{\text{Sales}}\right\}}$

2. Degree of Operating Leverage $= \dfrac{\text{Contribution}}{\text{E.B.I.T}}$

3. Financial Leverage $= \dfrac{\%\text{ Change in E.P.S}}{\%\text{ Change in E.B.I.T.}} = \dfrac{\text{Increase in E.P.S./E.P.S}}{\text{Increase in E.B.I.T./E.B.I.T.}}$

4. Degree of Financial Leverage $= \dfrac{\text{EBIT}}{\text{EBIT - Fixed Financial Charge}} = \dfrac{\text{EBIT}}{\text{EBT}}$

5. Combined leverage = Operating leverage X Financial leverage

$$= \frac{\%\text{ Change in E.B.I.T.}}{\%\text{ Change in Sales}} \times \frac{\%\text{ Change in E.P.S.}}{\%\text{ Change in E.B.I.T}}$$

$$= \frac{\%\text{ Change in E.P.S.}}{\%\text{ Change in Sales}}$$

6. Degree of Combined leverage = Degree of Operating leverage X Degree of Financial leverage

$$= \frac{\text{Contribution}}{\text{E.B.I.T}} \times \frac{\text{E.B.I.T}}{\text{EBT}} = \frac{\text{Contribution}}{\text{EBT}}$$

IMPACT OF FEW COMBINATIONS OF OPERATING & FINANCIAL LEVERAGES IS GIVEN BELOW

Operating Leverage	Financial Leverage	Combined Leverage
High (High fixed cost structure)	High (High level of debt financing)	This combination is very risky i.e. having both high leverages. It shows that the firm is employing excessive assets, for which it has to pay fixed cost and simultaneously it is also using large amount of debt capital. This combination should normally be avoided
Low (Low fixed cost structure)	Low (Low level of debt capital)	This represents a situation, which management is making a cautious approach. It is not possible for a company to maximise the return to the shareholders in this type of situation. This situation should be avoided.

High (High fixed cost structure)	Low (Low level of debt capital)	This situation is not advantageous to shareholders.
Low (Low fixed cost structure)	High (High level of debt financing)	This situation does not take true advantage of debt financing to maximise return on the equity. This is considered to be ideal situation for the maximisation of profit with minimum risk. Since, operating leverage is low, full advantage of debt financing can be taken to increase return on equity.

Financial break-even level: In case the EBIT level of a firm is just sufficient to cover the fixed financial charges then such level of EBIT is known as financial break-even level. Thus, the financial break-even level is such a level of EBIT at which only the fixed financial charges of the firm are covered and consequently the EPS is zero. If the EBIT reduces below this financial break-even level, the EPS will be negative. The financial break-even level of EBIT may be calculated as follows:

If the firm has employed debt only (and no preference shares), the financial break-even EBIT level is:

Financial break-even Level (EBIT)= Interest Charge

If the firm has employed debt as well as preference share capital, then its financial break even EBIT will be determined not only by the interest charge but also by the fixed preference dividend. It may be noted that the preference dividend is payable only out of PAT, whereas the financial break-even level is before tax. The financial break-even level in such a case may be determined as follows:

Financial break-even (EBIT) = Interest Charge + Pref. Div. / (1-t)

PROBLEMS FOR CLASSROOM DISCUSSION

Pr.1: Computation of operating and financial leverages.

a) Find the operating leverage from the following data:

Sales	Rs. 50,000
Variable Costs	60%
Fixed Costs	Rs. 12,000

b) Find the financial leverage from the following data:

Net Worth	Rs. 25,00,000
Debt/Equity	3/1
Interest rate	12%
Operating Profit	Rs. 20 Lakhs

(Ans.: a. 2.5 times, b.1.82 times)

Note:____

Pr.2: A Company produces and sells 10,000 shirts. The selling price per shirt is Rs.500. Variable cost is Rs.200 per shirt and fixed operating cost is Rs.25,00,000. **(SM)**

a) Calculate operating leverage.

b) If sales are up by 10% then what is the impact on EBIT? *(Ans.: a. 6 times, b. 60%)*

(Solve Problem No. 1 of Assignment Problems as rework)

Note:____

Pr.3: Calculate the operating leverage for each of the four firms A, B, C and D from the following price and cost data. **(SM)**

	Firms			
	A	B	C	D
Sale price per unit (in Rs.)	20	32	50	70
Variable cost per unit (in Rs.)	6	16	20	50
Fixed operating cost (in Rs.)	80,000	40,000	2,00,000	Nil

What conclusions 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.: For every 1% change in Sales EBIT will change by 7 times,2 times, 3 times & 1 time Respectively for A,B,C,D)

Note:____

Pr.4: A firm has sales of Rs.10,00,000, variable cost of Rs.7,00,000 and fixed costs of Rs.2,00,000 and debt of Rs.5,00,000 at 10% rate of interest. What are the operating, financial and combined leverages? If the firm wants to double its Earnings before interest and tax (EBIT), how much of a rise in sales would be needed on a percentage basis?

(Ans.: (i) 3 times (ii) 2 times & (iii) 6 times, % Change in sales 33.33%)

Note:____

Pr.5: Consider the following information for Strong Ltd: **(SM)**

	Rs. in lakh
EBIT	1,120
PBT	320 Rs. in lakh
Fixed Cost	700 Rs. in lakh

Calculate the percentage of change in earnings per share, if sales increased by 5 percent.

(Ans.: % Change in EPS Rs. 28.44)

Note:____

Pr.6: **(PRINTED SOLUTION AVAILABLE)** A firm's details are as under:

Sales (@ 100 per unit)	Rs.24,00,000
Variable Cost	50%
Fixed Cost	Rs.10,00,000

It has borrowed Rs.10,00,000 @ 10% p.a. and its equity share capital is Rs.10,00,000 (Rs. 100 each)

Calculate:

a) Operating Leverage

b) Financial Leverage

c) Combined Leverage

d) Return on Investment

e) If the sales increases by Rs.6,00,000; what will the new EBIT?

(Ans.: a. 6 times, b. 2 times, c. 12 times, d. 10%, e. Rs. 3,00,000)

Note:____

Pr.7: **(PRINTED SOLUTION AVAILABLE)** From the following information available for four companies, calculate EBIT, EPS, Operating leverage, Financial leverage and interpret the results.

Particulars		P	Q	R	S
Selling price/unit	Rs.	15	20	25	30
Variable cost/unit	Rs.	10	15	20	25
Quantity	(Nos.)	20,000	25,000	30,000	40,000
Fixed costs	Rs.	30,000	40,000	50,000	60,000
Interest	Rs.	15,000	25,000	35,000	40,000
Tax rate	%	40	40	40	40
No. of equity shares		5,000	9,000	10,000	12,000

(Ans.: P is Rs.70,000, Rs.6.6, 1.43, 1.27, Q is Rs.85,000, Rs.4, 1.47, 1.42 & R is Rs.1,00,000, Rs.3.9, 1.50, 1.54 & S is Rs. 1,40,000, Rs.5, 1.43, 1.40)

Note:____

Pr.8: **(PRINTED SOLUTION AVAILABLE)** Betatronics Ltd. has the following balance sheet and income statement information: **(SM)**

Balance Sheet as on March 31st

Liabilities	(Rs.)	Assets	(Rs.)
Equity capital (Rs. 10 per share)	8,00,000	Net fixed assets	10,00,000
10% Debt	6,00,000	Current assets	9,00,000
Retained earnings	3,50,000		
Current liabilities	1,50,000		
	19,00,000		19,00,000

Income Statement for the year ending March 31

	(Rs.)
Sales	3,40,000
Operating expenses (including Rs. 60,000 depreciation)	1,20,000
EBIT	2,20,000
Less: Interest	60,000
Earnings before tax	1,60,000
Less: Taxes	56,000
Net Earnings (EAT)	1,04,000

a) Determine the degree of operating, financial and combined leverages at the current sales level, if all operating expenses, other than depreciation, are variable costs.

b) If total assets remain at the same level, but sales (i) increase by 20 percent and (ii) decrease by 20 percent, what will be the earnings per share at the new sales level?

(Ans. a. 1.27 times, 1.375 times, 1.75 times & b. (i) Rs. 1.755 (ii) Rs. 0.845)

Note:____

Pr.9: Annual sales of a company is Rs.60,00,000. Sales to variable cost ratio is 150 percent and Fixed cost other than interest is Rs.5,00,000 per annum. Company has 11 percent debentures of Rs.30,00,000. **(PM)**
You are required to calculate the operating, Financial and combined leverage of the company.

(Ans. 1.33 times, 1.28 times, 1.705 times)

Note:____

Pr.10: X Corporation has estimated that for a new product its break-even point is 2,000 units if the item is sold for Rs.14 per unit; the cost accounting department has currently identified variable cost of Rs.9 per unit. Calculate the degree of operating leverage for sales volume of 2,500 units and 3,000 units. What do you infer from the degree of operating leverage at the sales volumes of 2,500 units and 3,000 units and their difference if any? **(PM)**

(Ans.: For every 1 % changes in sales from 2500 units level, EBIT will change by 5%)

Note:____

Pr.11: **(PRINTED SOLUTION AVAILABLE)** Calculate degree of operating leverage, degree of financial leverage and combined leverage from the following data: Sales 1,00,000 units @ Rs. 2 per unit = Rs. 2,00,000; Variable cost per unit @ Rs. 0.70; Fixed Costs Rs. 1,00,000; Interest charges Rs. 3,688. Which combinations of operating and financial leverage constitute: (a) risky situation; (b) ideal situation. ***(Ans. 4.33 times, 1.14 times, 4.94 times)***

Note:____

Pr.12: **(PRINTED SOLUTION AVAILABLE)** A company operates at a production level of 5,000 units. The contribution is Rs.60 per unit, operating leverage is 6,combined leverage is 24. If tax rate is 30%, what would be its earnings after tax? **(PM)** ***(Ans.: Rs. 8,750)***

Note:____

Pr.13: **(PRINTED SOLUTION AVAILABLE)** The following figures relates to two companies:

	P Ltd.	Q Ltd.
	(In Rs. Lakhs)	
Sales	500	1,000
Variable Costs	200	300
Contribution	300	700
Fixed Costs	150	400
EBIT	150	300
Interest	50	100
Profit before Tax	100	200

You are required to:

a) Calculate the operating, financial and combined leverages for the two companies; and

b) Comment on the relative risk position of them.

(Ans.: a. For P Ltd. 2 times, 1.5 times, 3 times & Q Ltd. 2.33 times, 1.5 times, 3.495 times)

(Solve Problem No. 2, 3, 4 of Assignment Problems as rework)

Note:____

Pr.14: **(PRINTED SOLUTION AVAILABLE)** The capital structure of progressive corporation consists of an ordinary share capital of Rs.10,00,000 (share of 100 per value) and Rs. 10,00,000 of 10% debentures. Sales increased by 20% from 1,00,000 units to 1,20,000 units, the selling price is 10 per unit, variable costs amount to Rs. 6 per unit and fixed expenses amount to Rs.2,00,000. The income tax rate is assumed to be 50%. You are required to calculate the following:

a) The percentage increase in Earnings Per Share.

b) The degree of financial leverage at 1,00,000 units and 1,20,000 units.

c) The degree of operating leverage at 1,00,000 and 1,20,000 units.

(Ans.: a. 80% b. 2 times, 1.55 times, c. 2 times, 1.71 times)

Note:____

Pr.15: The following details of A Ltd. for the year ended 31.3.1995 are furnished:

Operating leverage	3:1
Financial leverage	2:1
Interest charges per annum	Rs. 20 lakhs
Corporate tax rate	50%
Variable cost as percentage of sales	60%

Prepare the Income Statement of the company. *(Ans.: EAT is Rs.10,00,000)*

Note:____

Pr.16: **(PRINTED SOLUTION AVAILABLE)** From the following financial data of Company A and Company B: Prepare their Income Statements. **(PM)**

	Company A	Company B
	Rs.	Rs.
Variable Cost	56,000	60% of sales
Fixed Cost	20,000	-
Interest Expenses	12,000	9,000
Financial Leverage	5 : 1	-
Operating Leverage	-	4:1
Income Tax Rate	30%	30%
Sales	-	1,05,000

(N -09) *(Ans.: EAT for company A is Rs. 2,100 & company B is Rs. 1,050)*

Note:____

Pr.17: The Gudia Enterprises manufactures and sells a typical electronic toy. The selling price and variable cost per toy are Rs.20 and Rs.10 respectively. Operating fixed costs amount to Rs.5 lacs. The interest expense is Rs.2.5 lacs and DFL is 2. Find out DOL and Sales volume respectively. *(Ans.: 2 times & 1,00,000 units)*

Note:____

Pr.18: A company operates at a production level of 1,000 units. The contribution is Rs. 60 per unit, operating leverage is 6, and combined leverage is 24. If tax rate is 30%, what would be its earnings after tax? **(PM) (N 08)** *(Ans.: EAT is Rs. 1,750)*

Note:____

Pr.19: The operating and total leverage of Enigma Company are 2 and 5 respectively. Total variable costs at the existing level of operations amount to Rs.6.5 lacs. Interest expense and dividend on preference shares are Rs.75,000 and Rs.36,000 respectively. Corporate tax is 60%. Find out the sales revenue. *(Ans.: Sales is Rs. 12,00,0000)*

Pr.20: **(PRINTED SOLUTION AVAILABLE)** Calculate the operating leverage, financial leverage and combined leverage from the following data under Situation I and II and Financial Plans A and B: **(SM)**

Installed Capacity	4,000 Units
Actual Production and Sales	75% of the Capacity
Selling Price	Rs. 30 per Unit
Variable cost	Rs. 15 per Unit

Fixed Cost:

Under Situation I Under Situation II	Rs. 15,000 Rs. 20,000

Capital structure:

Financial plan	A	B
Equity	10,000	15,000
Debt (Rate of Interest at 20%)	10,000	5,000
Total	20,000	20,000

(Ans.: In Situation I _ Plan A is 1.5 times, 1.07 times, 1.61 times & Plan B is 1.5 times, 1.03 times, 1.55 times & In Situation II _ Plan A is 1.8 times, 1.09 times, 1.96 times & Plan B is 1.8 times, 1.04 times, 1.87 times)

Note:____

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Pr.21: **(PRINTED SOLUTION AVAILABLE)** A Company had the following Balance Sheet as on March 31, 2006: **(PM) (N-06)**

Liabilities and Equity	Rs. (in crores)	Assets	Rs. (in crores)
Equity Share Capital		Fixed Assets (Net)	25
(one crore shares of Rs. 10 each)	10	Current Assets	15
Reserves and Surplus	2		
15% Debentures	20		
Current Liabilities	8		
	40		40

The additional information given is as under:

Fixed Costs per annum (excluding interest)	Rs. 8 crores
Variable operating costs ratio	65%
Total Assets turnover ratio	2.5
Income-tax rate	40%

Required:

Calculate the following and comment:

a) Earnings per share
b) Operating Leverage
c) Financial Leverage
d) Combined *Leverage* *(Ans.: a. Rs. 14.40, b. 1.296 times, c. 1.125 times, d. 1.458 times)*

(Solve Problem No. 5, 6 of Assignment Problems as rework)

Note:____

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Pr.22: **(PRINTED SOLUTION AVAILABLE)** The following data relate to two companies A ltd. and B Ltd.:

Particulars	A Ltd	B Ltd
Capital Employed:		
Equity share capital (in Rs.10 shares)	5,00,000	2,50,000
9% Debentures	---	2,50,000
earnings before interest and tax	1,00,000	1,00,000
Return on capital employed	20%	20%

The equity shareholders of A Ltd. find that inspite of same return earned by their company on the total capital employed, their earnings per share is much less as compared to B Ltd.

You are required to state for the satisfaction of the shareholders of A Ltd., the reasons for such lower earnings per share on their capital. Assume the tax at 50%.

(Ans.: EPS of A Ltd is Rs. 1 & B Ltd is Rs. 1.55)

Note:____

Pr.23: The following data is available for XYZ Ltd:

Sales	Rs.2,00,000
Less: Variable Cost @ 30%	60,000
Contribution	1,40,000
Less: Fixed cost	1,00,000
EBIT	40,000
Less: Interest	5,000
Profit Before Tax	35,000

Find out:

a) Using the concept of financial leverage, by what percentage will the taxable income increase if EBIT increases by 6%.

b) Using the concept of operating leverage, by what percentage will EBIT increase if there is 10% increase in sales, and

c) Using the concepts of leverage, by what percentage will the taxable income increase if the sales increase by 6%. Also verity the results in view of the above figures.

(Ans.: a. %Change in EPS is 6.8, b. %Change in EBIT is 35, c. %Change in EPS is 24)

Note:____

Pr.24: Z Limited is considering the installation of a new project costing Rs.80,00,000. Expected annual sales revenue from the project is Rs.90,00,000 and its variable costs are 60 percent of sales. Expected annual fixed cost other than interest is Rs.10,00,000. Corporate tax rate is 30 percent. The company wants to arrange the funds through issuing 4,00,000 equity shares of Rs.10 each and 12 percent debentures of Rs.40,00,000. **(PM)**

You are required to:

a) Calculate the operating, financial and combined leverages and Earnings per Share (EPS).

b) Determine the likely level of EBIT, if EPS is (1) Rs. 4, (2) Rs. 2, (3) Rs. 0. (Nov-09)

(Ans.: a) 1.384, 1.226, 1.696, 3.71; b) 1)Rs. 27,65,714; 2) Rs. 16,22,857; 3) Rs. 4,80,000)

Note:____

Pr.25: **(PRINTED SOLUTION AVAILABLE)** Delta Ltd. currently has an equity share capital of Rs.10,00,000 Equity share of Rs.10 each. The company is going through a major expansion plan requiring to raise funds to the tune of Rs. 6,00,000. To finance the expansion the management has following plans: **(PM)**

Plan-I : Issue 60,000 Equity shares of Rs.10 each.

Plan-II : Issued 40,000 Equity shares of Rs.10 each and the balance through longterm borrowing at 12% interest p.a.

Plan-III : Issue 30,000 Equity shares of Rs.10 each and 3,000 Rs.100, 9% Debentures.

Plan-IV : Issue 30,000 Equity shares of Rs.10 each and the balance through 6% preference Shares.

The EBIT of the company is expected to be Rs.4,00,000 p.a. assume corporate tax rate of 40%.

Required:

a) Calculate EPS in each of the above plans.
b) Ascertain the degree of financial leverage in each plan.

(Ans.: a) I – 1.50; II – 1.61; III – 1.72; IV – 1.71; b) I – 1.00; II – 1.06; III – 1.07; IV – 1.08)

Note:____

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Pr.26: (PRINTED SOLUTION AVAILABLE) Saraju Ltd. produces electronic components with a selling price per unit of Rs.100. Fixed cost amounts to Rs.2,00,000. 5,000 units are produced and sold each year. Annual profits amount to Rs. 50,000. The company's all equity-financed assets are Rs. 5,00,000. The company proposes to change its production process, adding Rs.4,00,000 to investment and Rs.50,000 to fixed operational costs. The consequences of such proposal are:

a) Reduction in variable cost per unit by Rs. 10.

b) Increase in output by 2,000 units.

c) Reduction in S.P./unit to 95.

Assuming an average cost of capital 10%, examine the above proposal and advise whether or not the company should make the change. Also measure degree of operating leverage and break-even point. *(Ans.: It is advisable for the company to implement the proposed changes)*

(Solve Problem No. 7 of Assignment Problems as rework)

Note:____

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Pr.27: (PRINTED SOLUTION AVAILABLE) The following details of RST Limited for the year ended 31March, 2013 are given below: **(PM) (M 07)**

Operating leverage	1.4
Combined leverage	2.8
Fixed Cost (Excluding interest)	Rs. 2.04 lakhs
Sales	Rs. 30.00 lakhs
12% Debentures of Rs. 100 each	Rs. 21.25 lakhs
Equity Share Capital of Rs. 10 each	Rs. 17.00 lakhs
Income tax rate	30 per cent

Required:

a) Calculate financial leverage

b) Calculate p/v ratio and earning per share (EPS)

c) If the company belongs to an industry, whose assets turnover is 1.5, does it have a high or low assets leverage?

d) At what level of sales the earning before tax (EBT) of the company will be equal to zero?

(Ans.: a) 2; b) 23.8%; 1.05; c) low asset turnover; d) 19.29 lakhs)

(Solve Problem No. 8, 9 of Assignment Problems as rework)

Note:____

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Pr.28: The following summarises the percentage changes in operating income, percentage changes in revenues, and betas for four pharmaceutical firms.

Firm Ltd	Change in Revenue	Change in operating Income	Beta
PQR Ltd.	27%	25%	1.00
RST Ltd.	25%	32%	1.15
TUV Ltd.	23%	36%	1.30
TUV Ltd.	21%	40%	1.40

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. **(PM M-15)**

(Ans:(i) 0.9259,1.28,1.5652,1.9048)

Note:____

Pr.29. The capital structure of JCPL ltd is as follows.

	Rs.
Equity Share Capital of Rs.10/- each	8,00,000
8% Preference Share capital of Rs.10/- each	6,25,000
10% Debentures of Rs.100/- each	4,00,000
	18,25,000

Additional Information:

Profit after tax (tax rate 30%) Rs.1,82,000

Operating expenses (including depreciation Rs.90,000) being 1.50 times of EBIT

Equity Share dividend paid 15%

Market Price per equity share Rs.20/-

Required to calculate:

i) Operating and Financial Leverage

ii) Cover for the preference and Equity share of dividends .

iii) The earning yield and price earnings ratio.

iv) The net fund flow. **(PM)**

(Ans:(i)1.30times,1.15times (ii) 3.64times ,1.10 times (iii) 8.25% (iv) Rs.1,02,000)

(Solve Problem No. 10, 11 of Assignment Problems as rework)

Note:____

'A' CATEGORY PROBLEMS
2,3,6,8,9,10,11,12,17,19,21,23,26,25,26,28,29
(APPLICABLE FOR WEEKEND EXAMS ONLY BUT NOT FOR ANY OTHER EXAMS)

ASSIGNMENT PROBLEMS

Pr.1: A firm has Sales of Rs.40 lakhs; Variable cost of Rs.25 lakhs; Fixed cost of Rs.6 lakhs; 10% debt of Rs.30 lakhs; and Equity Capital of Rs.45 lakhs. **(PM)**

Required:

Calculate operating and financial leverage. *(Ans.: 1.67 & 1.50)*

Pr.2: The following data relate to RT Ltd: **(PM)**

	Rs.
Earnings before interest and tax (EBIT)	10,00,000
Fixed cost	20,00,000
Earnings Before Tax (EBT)	8,00,000

Required: Calculate combined leverage. *(Ans.: 3.75 times)*

Pr.3 The data relating to two Companies are as given below: **(SM) (PM)**

	Company A	Company B
Equity Capital	Rs. 6,00,000	Rs. 3,50,000
12% Debentures	Rs. 4,00,000	Rs. 6,50,000
Output (units) per annum	60,000	15,000
Selling price/unit	Rs. 30	Rs. 250
Fixed Costs per annum	Rs. 7,00,000	Rs. 14,00,000
Variable cost per unit	Rs. 10	Rs. 75

You are required to calculate the Operating leverage, financial leverage and combined leverage of the two companies. **(N 02 – 4M)**

(Ans.: Company A is 2.4, 1.11, 2.664 & Company B is 2.14, 1.07, 2.568)

Pr.4: Calculate the degree of operating leverage, degree of financial leverage and the degree of combined leverage for the following firms and interpret the results: **(PM)**

	P	Q	R
Output (units)	2,50,000	1,25,000	7,50,000
Fixed Cost (Rs.)	5,00,000	2,50,000	10,00,000
Unit Variable Cost (Rs.)	5	2	7.50
Unit Selling Price (Rs.)	7.50	7	10.0
Interest Expense (Rs.)	75,000	25,000	-

(Ans.: For P is Aggressive Policy, Q is Moderate Policy & R is Moderate Policy with no financial leverage)

Pr.5: From the following prepare Income Statement of Company A, B and C. Briefly comment on each company's performance:

Company	A	B	C
DOFL	3:1	4:1	2:1
Interest	Rs. 200	Rs. 300	Rs. 1000
DOL	4:1	5:1	3:1
Variable Cost as % to sales	66	75%	50%
Income-tax Rate	45%	45%	45%

(Ans.: Sales for Company A Rs. 3,600 & Company B Rs. 8,000 & Company C Rs. 12,000)

Pr.6: You are given two financial plans of a company which has two financial situations. The detailed information are as under: **(PM)**

Installed capacity	10,000 units
Actual production and sales	60% of installed capacity
Selling price per unit	Rs.30
Variable cost per unit	Rs.20

Fixed cost:

Situation 'A' = Rs. 20,000

Situation 'B' = Rs. 25,000

Capital structure of the company is as follows:

	Financial Plans	
	XY	**XM**
	Rs.	**Rs.**
Equity	12,000	35,000
Debt (cost of debt 12%)	40,000	10,000
	52,000	45,000

You are required to calculate operating leverage and financial leverage of both the plans.

(Ans.: Financial Plan XY, Situation A is 1.5 & 1.14, Situation B is 1.71 & 1.16 & Financial Plan XM, Situation A is 1.5 & 1.03, Situation B is 1.71 & 1.04)

Pr.7: The balance sheet of Well Estimated Company is as follows:

Liabilities	Rs.	Assets	Rs.
Equity share capital	60,000	Fixed Assets	1,50,000
Retained Earnings	20,000	Current Assets	50,000
10% Long term debt	80,000		
Current Liabilities	40,000		
	2,00,000		2,00,000

The company's Total Assets turnover ratio is 3. Its Fixed operating costs are Rs.1,00,000 and its Variable operating cost ratio is 40%. The income – tax rate is 50%. Calculate for the Company the different types of leverages given that the face value of the share is Rs.10.

(Ans.: DOL is 1.38, DOFL is 1.03, DOCL is 1.42)

Pr.8: The well Established Company's most recent balance sheet is as follows:

Liabilities	Amount	Assets	Amount
Equity capital (Rs.10 per share)	Rs.60,000	Net fixed assets	Rs.1,50,000
10% Long-term debt	80,000	Current assets	50,000
Retained earnings	20,000		
Current liabilities	40,000		
	2,00,000		2,00,000

The company's total asset turnover ratio is 3, its fixed operating costs are Rs.1,00,000 and the variable costs ratio is 40%. The income tax rate is 35 percent.

a) Calculate all the three types of leverages.

b) Determine the likely level of EBIT if EPS is (i) Re 1, (ii) Rs 3, and (iii) Zero.

(Ans.: a. DOL is 1.38, DOFL is 1.031, DOCL is 1.42, b. (i) Rs. 17,230.76 (ii) Rs. 35,692 (iii) Rs. 8,000)

Pr.9: Alpha Ltd. has furnished the following Balance Sheet as on March 31, 2011: **(PM)**

Liabilities	Rs.	Assets	Rs.
Equity Share Capital (1,00,000 equity shares of Rs. 10 each)	10,00,000	Fixed Assets	30,00,000
		Current Assets	18,00,000
General Reserve	2,00,000		
15% Debentures	28,00,000		
Current Liabilities	8,00,000		
	48,00,000		48,00,000

Additional Information:

1.	Annual Fixed Cost other than Interest	28,00,000
2.	Variable Cost Ratio	60%
3.	Total Assets Turnover Ratio	2.5
4.	Tax Rate	30%

You are required to calculate:

i) Earnings per Share (EPS), and **(N-11)**

ii) Combined Leverage. *(Ans.: (i) Rs. 11.06 (ii) 3.04)*

Pr.10: A firm has sales of Rs.75,00,000 variable cost of Rs.42,00,000 and fixed cost of Rs. 6,00,000. It has a debt of Rs.45,00,000 at 9% and equity of Rs.55,00,000.

a) What is the firm's ROI?

b) Does it have favourable financial leverage?

c) If the firm belongs to an industry whose asset turnover is 3, does it have a high or low asset leverage?

d) What are the operating, financial and combined leverages of the firm?

e) If the sales drop to Rs.50,00,000, what will be the new EBIT?

f) At what level the EBT of the firm will be equal to zero?

(Ans.: a. 27% b. is favorable financial leverage c. The firm's asset turnover ratio is less than the Industry ratio, d. 1.222, 1.1764, 1.438, e. Rs. 16,00,290, f. Sales Rs. 22,84,091)

Pr.11: The Net sales of A Ltd. is Rs.30 crores. Earnings before interest and tax of the company as a percentage of net sales are 12%. The capital employed comprises Rs.10 crores of equity, Rs.2 crores of 13% Cumulative Preference Share Capital and 15% Debentures of Rs. 6 crores. Income-tax rate is 40%.

i) Calculate the Return-on-equity for the company and indicate its segments due to the Presence of Preference Share Capital and Borrowing (Debentures).

ii) Calculate the operating leverage of the company given that the combined leverage is 3.

(PM) ***(Ans:13.60%)***

'A' CATEGORY ASSIGNMENT PROBLEMS – 1,4,5,6,9,10,11
(APPLICABLE FOR WEEKEND EXAMS ONLY BUT NOT FOR ANY OTHER EXAMS)

Verified by : M.P. Raju Sir
Executed by: Sai Ram Sir

THE END