LEVERAGE

In financial management the term 'leverage' is used to describe the firm's ability to use fixed cost assets to increase the return to its owners; i.e. equity shareholders. The leverage affects the profit earning capacity and financial strength of the firm.

Leverages are the tools for measuring Business Risk, Financial Risk and Overall Risk.

Business Risk V/s Financial Risk

Sr	Financial Risk	Business risk
1	Financial risk is created by the use of fixed cost securities (i.e. debt and pref shares)	Business risk / operating risk is the risk associated with normal day to day operations of the firm.
2	An entity may, in order to finance its business, burden itself with some financial fixed cost which will be incurred irrespective of the fact whether entity makes any profit.	An entity carrying on a business may, in order to carry its day to day operations burden itself with some operating fixed costs which will be incurred irrespective of fact whether entity makes any sales or not.
3	Financial risk is the variability in the owner's return created by a firm's fixed cost capital.	Business risk represents the variability in return created by a firm's uses of funds.
4	It is avoidable.	It is unavoidable.
5	It is controllable risk because it is associated with a capital structure decision of the firm.	It is not within the control of the company because operating fixed cost will continue to incur irrespective of the level of revenues generated.
6	DFL = EBIT / EBT	DOL = Contribution / EBIT

Financial Leverage as 'Trading on Equity'

Financial leverage indicates the use of funds with fixed cost like long term debts and preference share capital along with equity share capital which is known as trading on equity. The basic aim of financial leverage is to increase the earnings available to equity shareholders using fixed cost fund. A firm is known to have a positive leverage when its earnings are more than the cost of debt. If earnings is equal to or less than cost of debt, it will be an unfavourable leverage. When the quantity of fixed cost fund is relatively high in comparison to equity capital it is said that the firm is "trading on equity".

Financial Leverage as a 'Double edged Sword' - On one hand when cost of 'fixed cost fund' is less than the return on investment financial leverage will help to increase return on equity and EPS. The firm will also benefit from the saving of tax on interest on debts etc. However, when cost of debt will be more than the return it will affect return of equity and EPS unfavourably and as a result firm can be under financial distress. This is why financial leverage is known as "double edged sword".

Effect on EPS and ROE:

When, ROI > Interest – Favourable – Advantage When, ROI < Interest – Unfavourable – Disadvantage

When, ROI = Interest – Neutral – Neither advantage nor disadvantage.

PRACTICAL PROBLEMS

COMPUTATION OF DOL, DFL AND DCL

Page No.
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R1 R2 R3

Q 1 A simplified income statement of Zenith is given below :

Zenith Limited

Income Statement for the year ending March 31, 2015

	₹
Sales	10,50,000
Variable cost	7,67,000
Fixed cost	75,000
EBIT	**2,08,000**
Interest	1,10,000
Taxes (30%)	29,400
Net income	**68,600**

Calculate DOL, DFL and DCL.

Learning objective

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Q 2 The following data relate to Strong Ltd:

	₹ in lakh
Earnings before interest and tax (EBIT)	1,120
Fixed cost	700
Earnings Before Tax (EBT)	320

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

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Q 3 Annual sales of a company is ₹ 60,00,000. Sales to variable cost ratio is 150 percent and fixed cost other than interest is ₹ 5,00,000 per annum. Company has 11 percent debentures of ₹ 30,00,000. You are required to calculate the operating, Financial and combined leverage of the company.

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Q 4 A company operates at a production level of ₹ 5,000 units .The contribution is ₹ 60 per unit, operating leverage is 6. Combined leverage is 24. If tax rate is 30%, what would be its earnings after tax?

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R1 R2 R3

Q 5 From the following information available for four companies, calculate: (i) EBIT; (ii) EPS; (iii) Operating leverage; (iv) Financial leverage

Particulars		P	Q	R	S
Selling Price/ unit	(₹)	15	20	25	30
Variable Cost/ Unit	(₹)	10	15	20	25
Quantity	(Nos.)	20,000	25,000	30,000	40,000
Fixed Costs	(₹)	30,000	40,000	50,000	60,000
Interest	(₹)	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

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Q 6 Z Limited is considering the installation of a new project costing ₹ 80,00,000. Expected annual sales revenue from the project is ₹ 90,00,000 and its variable costs are 60 percent of sales. Expected annual fixed cost other than interest is ₹10,00,000. Corporate tax rate is 30 percent. The company wants to arrange the funds through issuing 4,00,000 equity shares of 10 each and 12 percent debentures of ₹40,00,000. Calculate the operating, financial and combined leverages and Earnings per Share (EPS).

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Q 7 You are given two financial plans of a company which has two financial situations. The detailed information are as under:

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

Fixed cost: Situation 'A' = 20,000
Situation 'B' = 25,000

Capital structure of the company is as follows:

	Financial Plans	
	XV	**XM**
	₹	₹
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.

▶ Learning objective

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Q 8 A company had the following Balance Sheet as on March 31, 2015

Liabilities and Equity	₹ (in Crores)	Assets	₹ (in Crores)
Equity Share Capital (1 crore shares of ₹ 10 each)	10	Fixed Assets (Net)	25
Reserves and Surplus	2	Current Assets	15
15% Debentures	20		
Current Liabilities	8		
	40		40

The additional information given is as under:

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

Required: Calculate the following and comment:

(i) Earnings per share
(ii) Operating Leverage
(iii) Financial Leverage
(iv) Combined Leverage

▶ Learning objective

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R1 R2 R3

Q 9

X Ltd. details are as under:

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

It has borrowed ₹10,00,000 @ 10% p.a. and its equity share capital is ₹10,00,000 (₹ 100 each). The company is in a tax bracket of 50%.

Calculate:

(i) Operating Leverage (ii) Financial Leverage

(iii) Combined Leverage (iv) Return on Equity

(v) If the sales increases by ₹ 6,00,000; what will the new EBIT?

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Q 10

The following data are available for the ABC Ltd. and XYZ Ltd.:-

	ABC Ltd.	XYZ Ltd.
Sales Volume	10,000 units	10,000 units
Selling price per unit of output	₹ 200	₹200
Variable cost per unit of output	₹ 120	₹ 150
Fixed operating cost per unit of output	₹ 60	₹ 30
Equity	₹ 3,00,000	₹ 6,00,000
Preference Shares	₹ 1,00,000	----
Debt	₹ 6,00,000	₹ 4,00,000
Interest rate on debt	16.25%	15%
Dividend rate on Preference Share	13%	---
Tax rate	60%	60%

Required:-

(a) Calculate the ROE, DOL, DFL, DCL for each company.

(b) As a financial analyst which of the two companies would you described as more risky? Give reasons.

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Q 11

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

(i) What is the firm's ROI ?

(ii) Does it have favourable financial leverage ?

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

(iv) What are the operating, financial and combined leverage of the firm ?

(v) If the sales drop to ₹ 50,00,000 what will be the new EBIT ?

(vi) At what level the EBIT of the firm, PBT will be equal zero ?

REVERSE WORKING WITH DOL, DFL AND DCL

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R1 R2 R3

Q 12 From the following financial data of Company A and Company B: Prepare their Income Statements. (₹)

	Company A	Company B
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

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Q 13 The selected financial data for A, B and C companies for the current year ended 31st December are as follows:

Particulars	A	B	C
Variable cost %	66.66	75	50
Interest expense	200	300	1,000
Operating leverage	5	6	6
Financial leverage	3	4	2
Income tax rate %	50	50	50

Prepare the income statement of all the three companies.

FINANCING METHODS – LEVERAGE EFFECT ON ROE AND EPS

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Q 14 The following summarizes the percentage changes in operating income, percentage changes in revenues, and betas for four pharmaceutical firms.

Firm	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
WXY 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.

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R1 R2 R3

Q 15 The capital structure of JCPL Ltd. is as follows:

	₹
Equity share capital of 10 each	8,00,000
8% Preferences share capital of 10 each	6,25,000
10% Debenture of 100 each	4,00,000
	18,25,000

Additional Information:

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

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

Equity share dividend paid 15%. Market price per equity share ₹ 20.

Require 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.

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Q 16 Delta Ltd. currently has an equity share capital of ₹10,00,000 consisting of 1,00,000 Equity share of ₹ 10 each. The company is going through a major expansion plan requiring to raise funds to the tune of ₹ 6,00,000. To finance the expansion the management has following plans:

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

Plan-II: Issue 40,000 Equity shares of ₹ 10 each and the balance through long term borrowing at 12% interest p.a.

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

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

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

Required:

(i) Calculate EPS in- each of the above plans. (ii) Ascertain the degree of financial leverage in each plan.

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R1 R2 R3

Q 17 Betatronics Ltd. Has the following balance sheet and income statement information:

Balance Sheet as on March 31st

Liabilities	(₹)	Assets	(₹)
Equity capital (₹ 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

Liabilities	(₹)
Sales	3,40,000
Operating expenses (including ₹ 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?

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Q 18 From the following information, prepare Income Statement of Company A & B:

Particulars	Company A	Company B
Margin of safety	0.20	0.25
Interest	₹ 3,000	₹ 2,000
Profit volume ratio	25%	33.33%
Financial Leverage	4	3
Tax rate	45%	45%

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Q 19 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.

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Q 20 The following particulars relating to Navya Ltd. for the year ended 31st March 2021 is given:

Output	1,00,000 units at normal capacity
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%.

Learning objective

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R1 R2 R3

Q 21 The following information is related to Yizi Company Ltd. for the year ended 31st March, 2021:

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.

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Q 22

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) Prepare Income Statement

(ii) Calculate Financial Leverage and Combined Leverage.

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

Learning objective

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R1 R2 R3

Q 23

Information of A Ltd. is given below:

	₹
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.

Learning objective

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Q 24 Following information has been extracted from the accounts of newly incorporated TextylPvt. Ltd. for the Financial Year 2020-21:

	₹
Sales	₹ 15,00,000
P/V ratio	70%
Operating Leverage	1.4 times
Financial Leverage	1.25 times

Using the concept of leverage, find out and verify in each case:

(i) The percentage change in taxable income if sales increase by 15%.

(ii) The percentage change in EBIT if sales decrease by 10%.

(iii) The percentage change in taxable income if EBIT increase by 15%.

Learning objective

MANAGEMENT OF RECEIVABLES

Receivables are asset accounts representing amounts owed to the firm as a result of sale of goods/services in the ordinary course of business.

Credit Evaluation:

A firm selling on credit terms cannot extend credit to all customers. Before granting credit to a customer, a firm seeks information of the creditworthiness of that customer. In judging the creditworthiness of an applicant, three basic factors - the three Cs have to be considered. And they are - character, capacity, and collateral. Character refers to the willingness of the customer to honour his obligations. It reflects integrity, a moral attribute, considered very important by credit manager. Capacity refers to the ability of the customer to pay on time. It depends on the financial situation (particularly the working capital position and profitability) and the general business conditions affecting the performance of the customer. Collateral represents the security offered by the firm in the form of mortgages.

Credit granting decision is taken on a case-to-case basis, based on the following illustrative factors:

(1) **Trade references:** The prospective customer may be required to give two/three trade references. Thus, the customers may give a list of personal acquaintances or some other existing credit- worthy customers. The credit manager can send a short questionnaire, seeking relevant information, to the referees.

(2) **Bank references:** Sometimes, the customer is asked to request the banker to provide the required information. In India, bankers do not generally give detailed and unqualified credit reference.

(3) **Credit bureau reports:** Associations for specific industries may maintain a credit bureau which provides useful and authentic credit information for their members.

(4) **Past experience:** The past experience of dealings with an existing customer is a valuable source of essential data. The transactions should be carefully scrutinized and interpreted for finding out the credit risk involved.

(5) **Published financial statements:** Published financial statements of a customer, (in case of limited companies) can be examined to determine the credit-worthiness.

(6) **Salesman's interview and reports:** Credit-worthiness can be evaluated by the reports provided by consulting salesmen or sales representatives. Such reports provide first hand information to the Company for proper determination of the credit limit.

(7) **Credit Rating:** If the customer is a corporate institution the firm selling on credit may also check its Credit Ratings so as to check the safety of its dues.

PRACTICAL PROBLEMS

DEBTORS MANAGEMENT – CREDIT TERM DECISION

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Q 1 A company currently has an annual turnover of ₹ 50 lakh and an average collection period of 30 days. The company wants to experiment with a more liberal credit policy on the ground that increase in collection period will generate additional sales. From the following information, kindly indicate which policy the company should adopt:

Credit policy	Average collection period	Annual sales(₹ lakhs)
A	45 days	56
B	60 days	60
C	75 days	62
D	90 days	63

Costs: variable cost: 80% of sales: fixed cost: ₹ 6 lakhs per annum; Required (pre-tax) ROI: 20%

A year may be taken to comprise of 360 days.

▶ Learning objective

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Q 2 ABC Ltd. is examining the question of relaxing its credit policy. It sells at present 20,000 units at a price of ₹ 100 per unit, the variable cost per unit ₹ 88 and average cost per unit at the current sales volume is ₹ 92. All the sales are on credit, the average collection being 36 days. A relaxed credit policy is expected to increase sale by 10% and the average age of receivables to 60 days. Assuming 15% return, should the firm relax its credit policy?

▶ Learning objective

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R1 R2 R3

Q 3 A Group of customers want to enter into a contract with you to buy goods worth ₹ 20 lakhs during 2007. The deliveries to be made in four equal instalments quarterly. The price of the commodity is ₹ 20 per unit on which you expect a profit of ₹ 10. The acceptance of this proposal would mean an additional recurring expenditure of ₹ 10000 p.a. on your part.

The ageing schedule of accounts receivables in respect of this group of customers in the past was as follows:

Period	Percentage of bills for which payment received
At the end of 30 days	15%
At the end of 60 days	25%
At the end of 90 days	40%
At the end of 100 days	20%

Assuming on opportunity cost of 20% of the funds locked up in accounts receivables, will it be desirable to accept this proposal?

▶ Learning objective

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Q 4 Pranshu Corporation currently provides 30 days of credit to its customers. It's total sales (all on credit) are ₹ 6 crore. The company is examining the possibility of increasing the credit period to 60 days. Such on extension is likely to increase the sales by ₹ 80 lakh. The company's bad debts to sales ratio are 5% which is likely to remain unchanged under new credit policy. Other relevant financial data are as under:

Variable cost to sales ratio	— 0.75
Tax rate	— 40%
Post Tax Cost of capital	— 10%

Is it desirable to change the existing credit policy?

▶ Learning objective

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Q 5 A company is presently having credit sales of ₹ 12 lakh. The existing credit terms are 1/10, net 45 days and average collection period is 30 days. The current bad debts loss is 1.5%. In order to accelerate the collection process further as also to increase sales, the company is contemplating liberalization of its existing credit terms to 2/10, net 45 days. It is expected that sales are likely to increase by 1/3 of existing sales, bad debts increase to 2% of sales and average collection period to decline to 20 days. The contribution to sales ratio of the company is 22% and opportunity cost of investment in receivables is 15 percent (pre-tax). 50 per cent and 80 percent of customers in terms of sales revenue are expected to avail cash discount under existing and liberalization scheme respectively. The tax rate is 30%.

Should the company change its credit terms? (Assume 360 days in a year).

▶ Learning objective

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R1 R2 R3

Q 6 As a part of a strategy to increase sales and profit, the Sales Manager of a company proposes to sell goods to a group of new customers with 10% risk of non-payment. This group would require 1.5 month's credit and this is likely to increase sale by ₹ 1 lac per annum. Production and selling expenses amount to 80% of Sales and the income-tax rate is 50%. The minimum rate of return expected to be earned by the company is 25% (after tax). You are required to comment on the acceptability of the proposal.

Also find out the degree of risk of non-payment that the company should be willing to assume if the required rate of returns are 30%, 40% and 60% (after tax)

▶ Learning objective

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Q 7 PQR Ltd. is considering relaxing its credit policy and evaluating two proposed policies. Currently the firm has annual credit sales of ₹ 50 lakhs and account receivables of ₹ 12,50,000. The current level of loss due to bad debt is ₹ 1,50,000.

The firm is to give a return of 20% on investment in the new (additional) accounts receivables. The company's variable costs are 70% of the selling price. The following further information is furnished:

	Present Policy	Policy option I	Policy option II
Annual credit sales	50,00 ,000	60,00,000	67,50,000
Accounts receivables	12,50,000	20,00,000	28,12,500
Bad debts losses	1,50,000	3,00,000	4,50,000

You are the management accountant of the firm. Advise the Managing Director which option should be adopted.

▶ Learning objective

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Q 8 JKL Ltd. is considering the revision of its credit policy with a view to increasing its sales and profits. Currently all its sales are on credit and the customers are given one month's time to settle the dues. It has a contribution of 40% on sales and it can raise additional funds at a cost of 20% per annum. The marketing director of the company has given the following options with draft estimates for consideration

Particulars		Current position	Option I	Option II	Option III
Sales	(₹ lakhs)	200	210	220	250
Credit period	(months)	1	1 ½	2	3
Bad debts	(% of sales)	2	2½	3	5
Cost of credit administration	(₹ lakhs)	1.20	1.30	1.50	3.00

Advise the company to take the right decision. (Workings should form part of the answer)

▶ Learning objective

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Q 9 The marketing manager of DREAM ltd. is giving a proposal to the board of directors of the company that an increase in credit period allowed to customers from the present one month to two months will bring a 25% increase in sales volume in the next year.

The following operational data of the company for the current year are taken from the records of the company:

	₹
Selling price	21 per unit
Variable cost	14 per unit
Total cost	18 per unit
Sales value	18,90,000

The board, by forwarding the above proposal and data request you to give your expert opinion on the adoption of the new credit policy in next year subject to a condition that the company's required rate of return on investments is 40%.

▶ Learning objective

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Q 10

A Company has sales of ₹ 25,00,000. Average collection period is 50 days, bad debt losses are 5% of sales and collection expenses are ₹ 25,000. The cost of funds is 15%. The company has two alternative collection programmes:

	Programme I	Programme II
Average collection period reduced to	40 days	30 days
Bad debts losses reduced to	4% of sales	3% of sales
Collection expenses	₹ 50,000	₹ 80,000

Evaluate which programme is viable.

▶ Learning objective

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R1 R2 R3

Q 11

XYZ Ltd. has annual credit sales amounting to ₹ 10,00,000 for which it grants a credit of 60 days. However, at present no discount facility is offered by the firm to its customers. The company is considering a plan to offer a discount of "3/15 net 60". The offer of discount is expected to bring the total credit periods from 60 days to 45 days and 50% of the customers (in value) are likely to avail the discount facility. The selling price of the product is ₹ 15 while the average cost per unit comes to ₹12. Please advise the company whether to resort to discount facility if the rate of return is 20% and a month is equal to 30 days.

▶ Learning objective

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Q 12

Slow Payers are regular customers of Goods Dealers Ltd., Calcutta and have approached the sellers for extension of a credit facility for enabling them to purchase goods from Goods Dealers Ltd. On an analysis of past performance and on the basis of information supplied, the following pattern of payment schedule emerges in regard to Slow Payers:

	Pattern of Payment Schedule
At the end of 30 days	15% of the bill
At the end of 60 days	34% of the bill.
At the end of 90 days	30% of the bill.
At the end of 100 days	20% of the bill.
Non-recovery	1% of the bill.

Slow Payers want to enter into a firm commitment for purchase of goods of ₹ 15 lakhs in 2013, deliveries to be made in equal quantities on the first day of each quarter in the calendar year. The price per unit of commodity is ₹ 150 on which a profit of ₹ 5 per unit is expected to be made. It is anticipated by Goods Dealers Ltd. that taking up of this contract would mean an extra recurring expenditure of ₹ 5,000 per annum. If the opportunity cost of funds in the hands of Goods Dealers is 24% per annum, would you as the finance manager of the seller recommend the grant of credit to Slow Payers? Workings should form part of your answer. Assume year of 360 days.

▶ Learning objective

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Q 13 XYZ Ltd. makes all sales on a credit basis. Once a year it evaluates the creditworthiness of all its customers. The evaluation procedure ranks customers from 1 to 5, with 1 indicating the "best" customers. Results of the ranking are as follows:

Customer Category	Percentage of Bad Debts	Average Collection Period (Days)	Credit Decision	Annual Sales Lost Due to Credit Strictness
1.	None	7	Unlimited Credit	None
2.	2.0	15	Unlimited Credit	None
3.	4.0	20	Limited Credit	₹ 4,00,000
4.	10.0	50	Limited Credit	₹ 1,90,000
5.	19.0	90	Limited Credit	₹ 2,40,000

The PV Ratio is 20%. The cost of capital invested in receivables is 18%. What would be the effect on the profitability of extending unlimited credit to each of the categories 3,4 and 5?

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Q 14 Star Ltd. are considering the liberation of existing credit terms of three large customers. Relevant data:

Credit Period (Days)	Quantity of Sales		
	A	B	C
0	1,000	1,000	---
30	1,000	1,500	---
60	1,000	2,000	1,000
90	1,000	2,500	1,500

Selling price ₹ 9,000 per unit. V.C. is 80 per cent of selling price. Cost of carrying debtors is 20 per cent p.a. Determine the credit period allowed to each customer Assume 360 days in a year.

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Q 15 A trader whose current sales are in the region of ₹ 6 lakhs per annum and an average collection period of 30 days wants to pursue a more liberal policy to improve sales. A study made by a management consultant reveals the following information:-

Credit Policy	Increase in collection period	Increase in sales	Present default Anticipated
A	10 days	₹ 30,000	1.5%
B	20 days	₹ 48,000	2%
C	30 days	₹ 75,000	3%
D	45 days	₹ 90,000	4%

The selling price per unit is ₹ 3. Average cost per unit is ₹ 2.25 and variable costs per unit are ₹ 2 The current bad debt loss is 1%. Required return on additional investment is 20%. Assume a 360 days year.

Which of the above policies would you recommend for adoption?

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Q 16 Mosaic Limited has current sales of ₹15 lakhs per year. Cost of sales is 75 per cent of sales and bad debts are one per cent of sales. Cost of sales comprises 80 per cent variable costs and 20 per cent fixed costs, while the company's required rate of return is 12 per cent. Mosaic Limited currently allows customers 30 days' credit, but is considering increasing this to 60 days' credit in order to increase sales.

It has been estimated that this change in policy will increase sales by 15 per cent, while bad debts will increase from one per cent to four per cent. It is not expected that the policy change will result in an increase in fixed costs and creditors and stock will be unchanged.

Should Mosaic Limited introduce the proposed policy? (Assume a 360 days year)

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Q 17 The Dolce Company purchases raw materials on terms of 2/10, net 30. A review of the company's records by the owner, Mr. Gupta, revealed that payments are usually made 15 days after purchases are received. When asked why the firm did not take advantage of its discounts, the accountant, Mr. Ram, replied that it cost only 2 per cent for these funds, whereas a bank loan would cost the company 12 per cent.

(a) What mistake is Ram making?

(b) What is the real cost of not taking advantage of the discount?

(c) If the firm could not borrow from the bank and was forced to resort to the use of trade credit funds, what suggestion might be made to Ram that would reduce the annual interest cost?

DEBTORS MANAGEMENT – FACTORING DECISION

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Q 18 A firm has total sales of ₹ 1200000 and its average collection period is 90 days. The past experience indicates that bad debt losses are 1.5% on sales. The expenditure incurred by the firm in administrating receivable collection efforts are ₹ 50000. A factor is prepared to buy the firm's receivables by charging 2% commission. The factor will pay advance on receivables to the firm at an interest rate of 16% p.a. after withholding 10% as reserve. Calculate effective cost of factoring to the firm. Assume 360 days in a year

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Q 19 The turnover of PQR Ltd. is ₹120 lakhs of which 75 per cent is on credit. The variable cost ratio is 80 per cent. The credit terms are 2/10, net 30. On the current level of sales, the bad debts are 1 per cent. The company spends ₹ 1,20,000 per annum on administering its credit sales. The cost includes salaries of staff who handle credit checking, collection etc. These are avoidable costs. The past experience indicates that 60 per cent of the customers avail of the cash discount, the remaining customers pay on an average 60 days after the date of sale.

The Book debts (receivable) of the company are presently being financed in the ratio of 1 : 1 by a mix of bank borrowings and owned funds which cost per annum 15 per cent and 14 per cent respectively.

A factoring firm has offered to buy the firm's receivables. The main elements of such deal structured by the factor are:

(i) Factor reserve, 12 per cent

(ii) Guaranteed payment, 25 days

(iii) Interest charges, 15 per cent, and

(iv) Commission 4 per cent of the value of receivables.

Assume 360 days in a year. What advice would you give to PQR Ltd. - whether to continue with the in house management of receivables or accept the factoring firm's offer?

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PLEDGE OF RECEIVABLES

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Q 20 A Bank is analyzing the receivables of Jackson Company in order to identify acceptable collateral for a short-term loan. The company's credit policy is 2/10 net 30. The bank lends 80 per cent on accounts where customers are not currently overdue and where the average payment period does not exceed 10 days past the net period. A schedule of Jackson's receivables has been prepared. How much will the bank lend on a pledge of receivables. If the bank uses a 10 per cent allowance for cash discount and returns?

Account	Amount ₹	Days Outstanding In days	Average Payment Period historically
74	25,000	15	20
91	9,000	45	60
107	11,500	22	24
108	2,300	9	10
114	18,000	50	45
116	29,000	16	10
123	14,000	27	48
	1,08,800		

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Q 21

The Alliance Ltd., a Petrochemical sector company had just invested huge amount in its new expansion project. Due to huge capital investment, the company is in need of an additional ₹ 1,50,000 in working capital immediately. The Finance Manger has determined the following three feasible sources of working capital funds:

(i) **Bank loan:** The Company's bank will lend ₹ 2,00,000 at 15%. A 10% compensatingbalance will be required, which otherwise would not be maintained by the company.

(ii) **Trade credit:** The company has been offered credit terms from its major supplier of3/30, net 90 for purchasing raw materials worth ₹ 1,00,000 per month.

(iii) **Factoring:** A factoring firm will buy the company's receivables of ₹ 2,00,000 per month, which have a collection period of 60 days. The factor will advance up to 75% of the face value of the receivables at 12% on an annual basis. The factor will also charge commission of 2% on all receivables purchased. It has been estimated that the factor's services will save the company a credit department expense and bad debt expense of ₹ 1,250 and ₹ 1,750 per month respectively.

On the basis of annual percentage cost, ADVISE which alternative should the company select? Assume 360 days year.

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