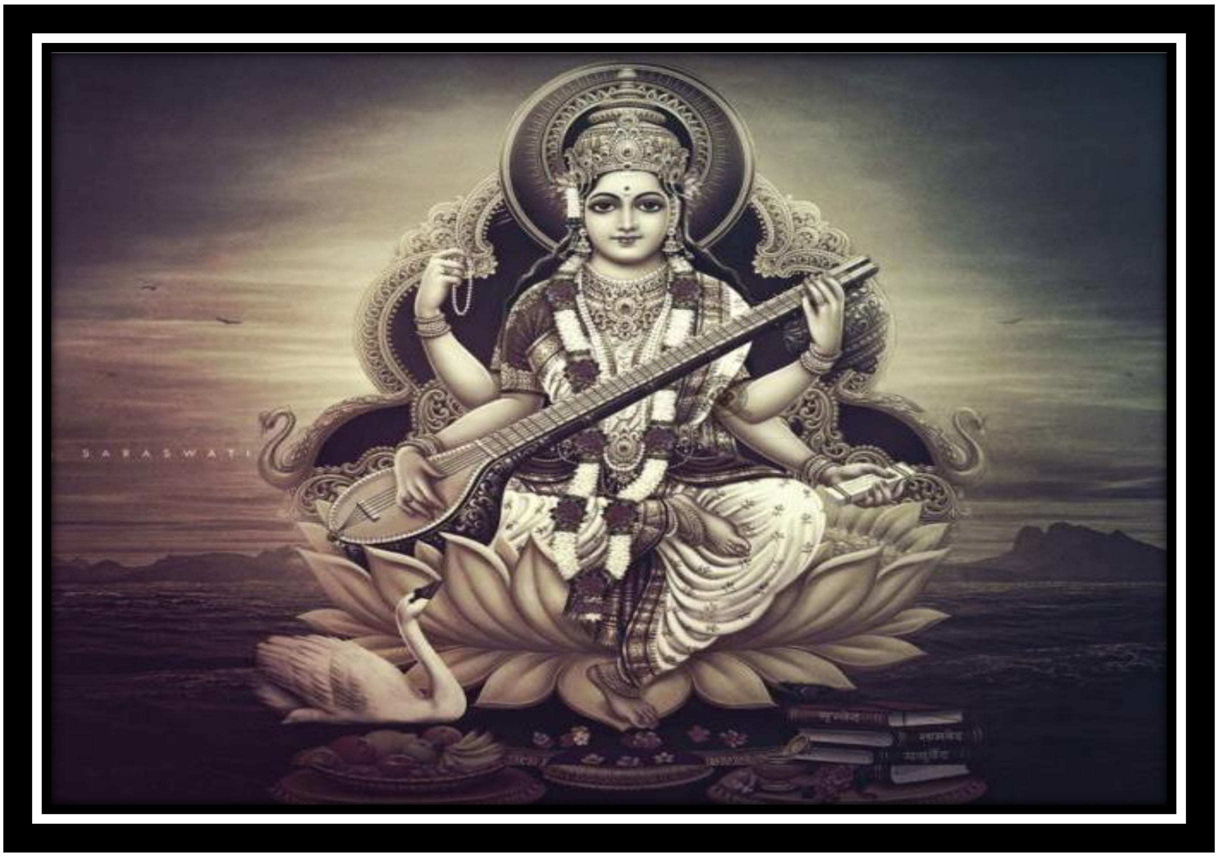
FINANCIAL MANAGEMENT



This piece of work is a result of constant urge for development and providing the best means to all willing students who look upon us for their bright future. This book is dedicated to my family because without their support this would have been impossible. I thank CA CS Avinash Sancheti, who works day and night together to make things easier and better for you all. I wish you all a bright future ahead. Happy learning!!

CA Navneet Mundhra
(8 papers of actuaries)

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Chapter 1

Cost of Capital

Track Your Preparation ✍

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QUESTION 1 — Ex. Book no. Pg.No.

Avinash Ltd issues ₹10,00,000 16% Debentures of ₹ 100 each. The company is in 30% tax bracket. You are required to calculate the cost of debt after tax,

(a) if debentures are issued at (i) par; (ii) 10% discount; (iii) 10% premium.

(b) if brokerage is paid at 2%, What will be the cost of debentures if issue is at par.

QUESTION 2 — Ex. Book no. Pg.No.

Indra Ltd. Issues 12% debentures of face value ₹ 100 each and realises ₹ 95 per debenture. The debentures are redeemable after 10 years at a premium of 10%. Calculate the cost of capital presuming income tax rate is 50%.

QUESTION 3 — Ex. Book no. Pg.No.

A. A company's debentures of the face value of Rs.100 bear 8% coupon rate. Debentures of this type currently yield 10%. What is the Market price of debentures of the company?

B. What would happen to the market price of debentures if interest rate on debentures rises to (i) 16% & (i) drops to 12%?

C. What would be the market price of debentures in situation (a) if it is assumed that debentures were originally having 15 year maturity period & maturity period is 4 years away from now?

D. Would you pay Rs.90 to purchase debentures specified in situation (c)? Explain.

QUESTION 4 — Ex. Book no. Pg.No.

A company has issued 15% debentures aggregating Rs.1,00,000. The flotation cost is 15%. The company has agreed to repay the debentures at par in 5 equal annual instalments starting at the end of year 1. The rate of tax is 35%. Find cost of debt?

PV Factor	1	2	3	4	5	6	7	8	9	10
15%	0.869	0.756	0.657	0.571	0.497	0.432	0.375	0.326	0.284	0.247
18%	0.847	0.718	0.608	0.515	0.437	0.370	0.313	0.266	0.225	0.191

QUESTION 5	Ex. Book no.	Pg.No.

A company issued 10,000, 15% Convertible debentures of Rs. 100 each with a maturity period of 5 years. At maturity the debenture holders will have the option to convert the debentures into equity shares of the company in the ratio of 1:10 (10 shares for each debenture). The current market price of the equity shares is Rs. 12 each and historically the growth rate of the shares is 5% per annum. Compute the cost of debentures using approximation method and IRR method assuming 35% tax rate.

QUESTION 6	Ex. Book no.	Pg.No.

Navneet Ltd. Issued ₹ 200 lakhs 15% preference shares of ₹ 100 each. redeemable at par after 5 years. Calculate the cost of preference shares in each of the following cases.

(i) If preference shares are issued at par with no flotation cost.

(ii) If preference shares are issued at par with a flotation cost of 5% of issue price.

(iii) If preference shares are issued at 10% premium with a flotation cost of 4% on issue price.

(iv) If preference shares are issued at 5% discount with a flotation cost of 2% on issue price.

QUESTION 7	Ex. Book no.	Pg.No.

XYZ & Co. Has 20,000 equity shares of ₹ 10 each fully paid. The current market price per share is ₹ 20. Earnings available to the shareholders at the end of the period under consideration are ₹ 60,000. Calculate cost of equity share capital using earning/price ratio.

QUESTION 8	Ex. Book no.	Pg.No.

The current market price of an equity share of ₹ 10 is ₹ 20. The next expected dividend per share is 20%. The dividends are expected to grow at a rate of 5%. Calculate the cost of equity based on dividend growth model.

QUESTION 9	Ex. Book no.	Pg.No.

A company's share is quoted in market at ₹ 40 currently. A company pays a dividend of ₹ 2 per share and investore expect a growth rate of 10% per year, compute:

(i) The company's cost of equity capital.

(ii) If anticipated growth rate is 11% p.a. calculate the indicated market price per share.

(iii) If the company's cost of capital is 16% and anticipated growth rate is 10% p.a. calculate the market price if dividend of ₹ 2 per share is to be maintained.

QUESTION 10	Ex. Book no.	Pg.No.

From the under mentioned facts determine the cost of equity shares of company X:

(i) Current market price of a share = ₹ 150

(ii) Cost of flotation per share on new shares= ₹ 3

(iii) Dividend paid on the outstanding shares over the past six years:

Year	Dividend Per Share
1	10.50
2	11.02
3	11.58
4	12.16
5	12.76
6	13.40

(iv) Assume a fixed dividend payout ratio.

(v) Expected dividend on the new shares at the end of the current year is ₹ 14.10 per share.

QUESTION 11	Ex. Book no.	Pg.No.

Biogen Ltd., is a biotechnology firm, had a beta of 1.70 in 2015. It has no debt outstanding at the end of that year. Market risk premium is 5.5%

(i) Estimate the cost of equity for Biogen, if the treasury bond rate is 6.4%.

(ii) What effect will an increase in treasury bond rates to 7.5% have on Biogen's cost of equity, market risk premium remaining the same.

QUESTION 12	Ex. Book no.	Pg.No.

Unilever Ltd. is an equity based firm with project undertaken viz. Project A, B and C with R_f 8%, Rm 12%.

Project	Beta	Weight
A	1.3	0.5
B	1.0	0.3
C	0.8	0.2

Compute Cost of Capital.

QUESTION 13	Ex. Book no.	Pg.No.

You are analysing the beta for ABC Computers Ltd. and have divided the company into four broad business groups, with market values and betas for each group.

Business Group	Market value of equity (Rs. billion)	Unleveraged Beta
Main frames	100	1.10
Personal computers	100	1.50
Software	50	2.00

Printers	150	1.00

ABC Computers Ltd. had Rs. 50 billion in debt outstanding.

Required:

(i) Estimate the beta for ABC Computers Ltd. as a Company.

(ii) If the treasury bond rate 7.5% estimate the cost of equity for ABC Computers Ltd. Estimate the cost of equity for each division. Which cost of equity would you use to value the printer division? The average market risk premium is 8.5%.

QUESTION 14 | Ex. Book no. Pg.No.

From the following information, calculate the cost of equity (Ke):

Risk-free rate of interest	12%
Expected return of market portfolio	18%
Standard deviation of an assets	2.8%
Market standard deviation	2.3%
Correlation coefficient of asset with market	0.8

QUESTION 15 | Ex. Book no. Pg.No.

SK Limited has obtained funds from the followings sources, the specific cost are also given against them:

Source of funds	Amount(Rs.)	Cost of Capital
Equity shares	30,00,000	15 Percent
Preference shares	8,00,000	8 Percent
Retained earnings	12,00,000	11 Percent
Debentures	10,00,000	9 Percent (before tax)

You are required to calculate weighted average cost of capital. Assume that Corporate tax rate is 30 percent.

QUESTION 16 | Ex. Book no. Pg.No.

The capital structure of MNP Ltd. is as under:

9% Debenture	Rs. 2,75,000
11% Preference shares	Rs. 2,25,000
Equity shares (face value: Rs. 10 per share)	Rs. 5,00,000
Total	**Rs. 10,00,000**

Additional information:

(i) Rs. 100 per debenture redeemable at par has 2% floatation cost and 10 years of maturity. The market price per debenture is Rs. 105.

(ii) Rs. 100 per preference shares redeemable at par has 3% floatation cost and 10 years of maturity. The market price per preference shares is Rs. 106

(iii) Equity share has Rs. 4 floatation cost and market price per share of Rs. 24. The next year expected dividend is Rs. 2 per share with annual growth of 5%. The firm has a practice of paying all earnings in the form of dividends.

(iv) Corporate Income- tax rate is 35%.

Required: Calculate Weighted Average Cost of Capital (WACC) using market value weights.

QUESTION 17	Ex. Book no.	Pg.No.

You are required to determine the weighted average cost of capital of a firm using (i) book-value weights and (ii) market value weights. The following information is available for your perusal:

Present book value of the firm's capital structure is:

Particulars	(Rs.)
Debentures of Rs. 100 each	8,00,000
Preference shares of Rs. 100 each	2,00,000
Equity shares of Rs. 10 each	10,00,000
Total	**20,00,000**

All these securities are traded in the capital markets. Recent prices are:

Debentures @ Rs. 110, Preference shares @ Rs. 120 and Equity shares @ Rs. 22.

Anticipated external financing opportunities are follows:

(i) Rs. 100 per debenture share redeemable at par: 20 years maturity 8% coupon rate, 4% floatation costs, sale price Rs. 100.

(ii) Rs. 100 per preference share redeemable at par: 15 years maturity, 10% dividend rate, 5% floatation costs, sale price Rs. 100.

(iii) Equity shares: Rs. 2 per share floatation costs, sale price Rs. 22.

In addition, dividend expected on the equity share at the end of the years is Rs. 2 per share; the anticipated growth rate in dividends is 5% and the firm has the practice of paying all its earnings in the form of dividend. The corporate tax rate 50%.

QUESTION 18	Ex. Book no.	Pg.No.

Three companies A, B & C are in the same type of business and hence have similar operating risks. However, the capital structure of each of them is different and the following are the details:

Particulars	A	B	C
Equity Share Capital [Face value of Rs. 10 per share]	4,00,000	2,50,000	5,00,000
Market value per share	Rs. 15	20	12
Dividend per share	Rs. 2.70	4	2.88
Debentures [Face value per debenture Rs. 100]	Rs. Nil	1,00,000	2,50,000
Market value per debenture	Rs. -	125	80
Interest rate		10%	8%

Assume that the current levels of dividends are generally expected to continue indefinitely and the income tax rate at 50%. You are required to compute the weighted average cost of capital each company using market values as weight.

QUESTION 19	Ex. Book no.	Pg.No.

ABC Limited has the following book value capital structure:

Equity Share Capital (150 million Shares, Rs. 10 par)	Rs. 1,500 million
Reserve and Surplus	Rs. 2,250 million
10.5% Preference Share Capital (1 million shares, Rs. 100 par)	Rs. 100 million
9.5% Debentures (1.5 million debentures, Rs. 1,000 par)	Rs. 1,500 million
8.5% Term Loans from Financial Institutions	Rs. 500 million

The debentures of ABC Limited are redeemable after three years and are quoting at Rs. 981.05 per debenture. The applicable income tax rate for the company is 35%.

The current market price per equity share is Rs. 60. The prevailing default-risk free interest rate on 10 years GOI Treasury Bonds is 5.5%. The average market risk premium is 8%. The beta of the company is 1.1875.

The preferred stock of the company is redeemable after 5 years is currently selling at Rs. 98.15 per preference share.

Calculate weighted average cost of capital of capital of the company using market value weights.

QUESTION 20	Ex. Book no.	Pg.No.

ABC Ltd. wishes to raise additional finance of Rs. 20 lakhs for meeting its investments plan. The company has Rs. 4, 00,000 in the form of retained earnings available for investment purpose. The following are the further details:

-Debt equity ratio 25:75.

-Cost of debt at the rate of 10% (before tax) upto Rs. 2, 00,000 and 13% (before tax) beyond that

-Earnings per share Rs. 12.

-Dividend payout 50% of earnings.

-Expected growth rate in dividend 10%

-Current market price per share, Rs. 60.

-Company's tax rate is 30% and shareholder's personal tax rate is 20%

Required:

(i) Calculate the post tax average cost of additional debt.

(ii) Calculate the cost of retained earnings and cost of equity.

(iii) Calculate the overall weighted average (after tax) cost of additional finance.

QUESTION 21	Ex. Book no.	Pg.No.

M/s Efficient Corporation has a capital structure of 40% debt and 60% equity. The company is presently considering several alternative investment proposals costing less then Rs. 20 lakhs.

The corporation always raises the required funds without disturbing its present debt equity ratio. The cost of raising the debt and equity are as under:

Project Cost	Cost of Debt	Cost of Equity
Upto Rs. 2 lakhs	10%	12%
Above Rs. 2 lakhs and upto 5 lakhs	11%	13%
Above Rs. 5 lakhs and upto 10 lakhs	12%	14%
Above Rs. 10 lakhs and upto 20 lakhs	13%	14.5%

(i) What will be the cost of two projects having value 6.5 lacs & 14 lacs.

(ii) If the project is expected after tax return of 10%, determine when this should be accepted?

Also, if after tax return is 13.5%

QUESTION 22	Ex. Book no.	Pg.No.

XYZ Ltd. has the following book value capital structure:

Equity Capital (in shares of Rs. 10 each fully paid up- at par)	Rs. 15 crores
11% Pref. capital (in shares of Rs. 100 each, fully paid up – at par)	Rs. 1 crores
Retained Earnings	Rs. 20 crores
13.5% Debentures (of Rs. 100 each)	Rs. 10 crores
15% Term Loans	Rs. 12.5 crores

The next expected dividend on equity shares per share is Rs. 3.60; the dividend per share is expected to grow at the rate of 7%. The market price per share is Rs. 40.

Preference stock, redeemable after ten years, is currently selling at Rs. 75 per share.

Debentures, redeemable after six years, are selling at Rs. 80 per debenture.

The Income-tax rate for the company is 40%.

Required:

(i) Calculate the weighted cost of capital using:

(a) Book value proportions; and

(b) Market value proportions.

(ii) Calculate the weighted marginal cost of capital schedule for the company, if it raises Rs.10 crores at the start of the next year, given the following information:

(a) The amount will be raised by equity and debt in equal proportions;

(b) The company expects to retain Rs. 1.5 crores earnings next year;

(c) The additional issue of equity shares will result in the net price per share being fixed at Rs. 32;

(d) The debt capital raised by way of term of loans will cost 15% for the first Rs. 2.5 crores and 16% for the next Rs. 2.5 crores.

QUESTION 23	Ex. Book no.	Pg.No.

A Ltd. wishes to raise additional finance of Rs. 10,00,000 for meeting its investment plans. It has Rs. 2,10,000 of retained earnings for it. The following are further details:

1)	Debt/Equity mix	30% / 70%
2)	Cost of Debt	
	- Upto 1, 80,000	10%(before tax)
	- beyond 1, 80,000	16%(before tax)
3)	EPS	4
4)	Dividend pay out	50% of earnings
5)	Expected growth rate in dividend	10%
6)	Current MPS	44
7)	Tax rate	50%

You are required

(i) To determine the pattern of raising finance.

(ii) To determine post tax average cost of additional debt.

(iii) To determine cost of retained earnings and cost equity.

(iv) Compute the overall weighted average cost of capital.

QUESTION 24	Ex. Book no.	Pg.No.

The R& G Co. has following capital structure at 31st March, 2004, which is considered to be optimum:

13% Debenture	3,60,000
11% Pref. Share Capital	1,20,000
Equity Share Capital (2, 00,000 Shares)	19,20,000

The company's share has a current market price of Rs. 27.75 per share. The expected dividend per share in next year is 50% of the 2004 EPS. EPS of last 10 Years is as follows. The past trends are expected to continue:

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
EPS (Rs.)	1.00	1.120	1.254	1.405	1.574	1.762	1.974	2.211	2.476	2.773

The company can issue 14% new debenture. The company's debenture is currently selling at Rs. 98. The new pref. issue can be sold at a net price of Rs. 9.80, paying a dividend of Rs. 1.20 per share. The company's marginal tax rate is 50%.

(i) Calculate the after tax cost

(a) If a new debts and new preference share capital are issued.

(b) Of ordinary equity, assuming new equity comes from retained earnings.

(ii) Calculate the marginal cost of capital.

(iii) How much can be spent for capital investment before new ordinary share must be sold?

Assuming that retained earning available for next year's investment are 50% of 2004 earnings.

(iv) What will be marginal cost of capital (cost of fund raised in excess of the amount calculated in part (iii) if the company can sell new ordinary shares to net Rs. 20 per share? The cost of debt and of preference capital is constant.

QUESTION 25	Ex. Book no.	Pg.No.

XYZ & Co. provides you with the following information:

Sources	Amount	After-tax cost of capital
Equity	Rs. 2,00,000	12%
Debentures	Rs. 2,00,000	4%

The company is considering an investment proposal requiring an additional investment of Rs. 1,00,000. it has taken to finance this amount by taking a loan from a financial institution at a cost of 10%. Presuming that corporate rate of tax is 50%, you are required to find out:

(i) Marginal cost of capital after tax.

(ii) Weighted average cost before additional financing.

(iii) Weighted average cost after additional financing.

(iv) What will be weighted average cost, if the additional amount of debt of Rs. 1,00,000 is raised proportionately from equity and debt at the exiting specific cost

QUESTION 26	Ex. Book no.	Pg.No.

Beeta Ltd. has furnished the following information:

Earning per share (EPS)	Rs. 4
Dividend payout ratio	25%
Market price per share	Rs. 40
Rate of tax	30%
Growth rate of dividend	8%

The company wants to raise additional capital of Rs. 10 lakhs including debt of Rs. 4 lakhs. The cost of debt (before tax) is 10% upto Rs. 2 lakhs and 15% beyond that.

Compute the after tax cost of equity and debt and weighted average cost of capital.

QUESTION 27	Ex. Book no.	Pg.No.

RBML is proposing to sell a 5-year bond of ₹ 5,000 at 8 per cent rate of interest per annum. The bond amount will be amortised equally over its life. What is the bond's present value for an investor if he expects a minimum rate of return of 6 per cent?

Chapter 2

Leverage

Track Your Preparation

TOTAL CLASSES -	Ex. Book no.	Pg.No.

Question No.	Class Work	Home Work	Important	Self Practise	
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Question No.	Class Work	Home Work	Important	Self Practise	
				I	II
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Question 27					

QUESTION 1 — Ex. Book no. — Pg.No.

The following data relate to RT Ltd:

Particulars	Amount (₹)
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.

QUESTION 2 — Ex. Book no. — Pg.No.

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?

QUESTION 3 — Ex. Book no. — Pg.No.

A firm has sales of Rs. 40 lakhs; variable cost of Rs. 25lakhs; fixed cost of Rs. 6lakhs; 10% debt of Rs 30lakhs; and Equity Capital of Rs 45lakhs.

Required:Calculate operating and financial leverage.

QUESTION 4 — Ex. Book no. — Pg.No.

The data relating to two companies are as given below:

Particulars	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 two companies.

QUESTION 5 — Ex. Book no. — Pg.No.

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

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:

Particulars	Financial Plans	
	XV (Rs)	XM (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.

QUESTION 6	Ex. Book no.	Pg.No.

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 earning after tax?

QUESTION 7	Ex. Book no.	Pg.No.

Annual sales of a company is Rs.60,00,000. Sales to variable cost ratio is 150 per cent and Fixed cost other than interest is Rs.5,00,000 per annum. Company has 11 per cent debentures of Rs.30,00,000.

You are required to calculate the operating, Financial and combined leverage of the company.

QUESTION 8	Ex. Book no.	Pg.No.

From the following financial data of Company A and Company B: prepare their Income Statements.

Particulars	Company A(Rs.)	Company B (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

QUESTION 9 | Ex. Book no. | Pg.No.

Calculate the operating leverage, financial leverage and combined leverage for the following firms and interpret the results:

Particulars	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 (Rs.)	5	2	7.5
Unit Selling price (Rs.)	7.50	7	10.0
Interest Expenses (Rs.)	75,000	25,000	-

QUESTION 10 | Ex. Book no. | Pg.No.

Calculate the operating leverage and combined leverage for the following firms:

Particulars	N	S	D
Production (in units)	17,500	6,700	31,800
Fixed costs (Rs.)	4,00,000	3,50,000	2,50,000
Interest on loan (Rs.)	1,25,000	75,000	Nil
Selling price per unit (Rs.)	85	130	37
Variable cost per unit (Rs.)	38.00	42.50	12.00

QUESTION 11 | Ex. Book no. | Pg.No.

From the following details of X Ltd. prepare the Income Statement for the year ended 31st December, 2014:

Financial Leverage	2
Interest	Rs.2,000
Operating Leverage	3
Variable cost as a percentage of sales	75%
Income tax rate	30%

QUESTION 12 | Ex. Book no. | Pg.No.

X Limited has estimated that for a new product its break-even point is 20,000 units if the item is sold for Rs. 14 per unit and variable cost Rs. 9 per unit. Calculate the degree of operating leverage for sales volume 25,000 units and 30,000 units.

QUESTION 13 | Ex. Book no. | Pg.No.

Consider the following information for Omega Ltd.

Particulars	Rs. in lakhs
EBIT (Earning before interest and tax)	15,750
Earning before tax (EBT)	7,000
Fixed operating costs:	1,575

Required:

Calculate percentage change in earnings per share, if sales increase by 5%.

QUESTION 14	Ex. Book no.	Pg.No.

Consider the following information for strong Ltd:

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

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

QUESTION 15	Ex. Book no.	Pg.No.

A company had the following Balance Sheet as on March 31, 2006:

Liabilities and Equity	Rs.(in crores)	Assets	Rs.(in crores)
Equity Share Capital (one crores shares of Rs. 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	Rs.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

QUESTION 16	Ex. Book no.	Pg.No.

Delta Ltd. currently has an equity share capital of Rs.10,00,000 consisting of 1,00,000 equity share of Rs.10 each. The company has 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:

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

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

Plan –III : Issue 30,000 equity of Rs.10 each and 3,000, 9% Debentures of Rs.100 each.

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 :

(i) Calculate EPS in the above plans.

(ii) Ascertain financial leverage in each plan.

QUESTION 17	Ex. Book no.	Pg.No.

The following information is available for AMD Ltd.

PBDIT	Rs. 830 Cr.
Depreciation	Rs. 6 Cr.
Effective tax rate	30%
EPS	Rs. 4
Book value	Rs. 30 per share
Number of outstanding shares	33 Cr.
D / E ratio	1.5:1

Find: - A. Degree of financial Leverage. B. Financial Break-even point. C. Rate of Interest

QUESTION 18	Ex. Book no.	Pg.No.

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 fund through issuing 4,00,000 equity shares of each and 12 percent debentures of Rs.40,00,000.

You are required to:

(i) Calculate the operating, financial and combined leverages and Earnings per share (EPS).

(ii) Determine the likely level of EBIT, if EPS is Rs.4, or Rs.2, or Zero.

QUESTION 19	Ex. Book no.	Pg.No.

The following information related to XL Company Ltd. for the year ended 31st March, 2016 are available to you:

Equity share capital of Rs.10 each	Rs.25 lakh
11% Bonds of Rs.1000 each	Rs.18.5 lakh
Sales	Rs.42 lakh
Fixed cost (Excluding Interest)	Rs.3.48 lakh
Financial leverage	1.39
Profit – volume Ratio	25.55%
Income Tax Rate Application	35%

You are required to calculate:

(i) Operating leverage;

(ii) Combined leverage; and

(iii) Earning per Share

QUESTION 20	Ex. Book no.	Pg.No.

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	27%	25%	30%
Q	25%	32%	24%
R	23%	36%	21%
S	21%	40%	23%

Find out:

(i) degree of operating leverage, and

(ii) degree of combined leverage for all the firms.

QUESTION 21	Ex. Book no.	Pg.No.

The capital structure of ABC Ltd. as at 31.3.15 consisted of ordinary share capital of Rs.5,00,000 (face value Rs.100 each) and 10% debentures of Rs.5,00,000 (Rs.10each). in the year ended with March 15, sales decreased from 60,000 units to 50,000 units. During this year and in the previous year, the selling price was Rs.12 per unit; variable cost stood at Rs.8 per unit and fixed expenses were at Rs.1,00,000 p.a. The income tax rate was 30%.

You are required to calculate the following:

(i) The percentage of decrease in earnings per share.

(ii) The degree of operating leverage at 60,000 units and 50,000 units

(iii) The degree of financial leverage at 60,000 units and 50,000 units.

QUESTION 22	Ex. Book no.	Pg.No.

The following summarises 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

(i) Calculate the degree of operating leverage for these firms. Comment also.

(ii) Use the operating leverage to explain why these firms have different beta.

QUESTION 23	Ex. Book no.	Pg.No.

A firm has sales of Rs.75,00,000 variable cost is 56% and fixed cost is Rs.6,00,000. It has a debt of Rs.45,00,000 at 9% and equity of Rs.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 capital turnover is 3. Does it have a high or low capital turnover?

(iv) What are 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?

QUESTION 24	Ex. Book no.	Pg.No.

The net sales of A Ltd. is Rs. 30 crores. Earnings before interest and tax of the company as a percentage of the net sales is 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 combined leverage is 3.

QUESTION 25	Ex. Book no.	Pg.No.

The following details of RST Limited for the year ended 31st March, 2015 are given bellow:

Operating leverage	1.4
Combined leverage	2.8
Fixed Cost	Rs.2.04 lakhs
Sales	Rs.30 lakhs
12% Debentures of Rs.100 each	Rs.21.25 lakhs
Equity Share Capital of Rs.10 each	17.00 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 1.5, 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?

QUESTION 26	Ex. Book no.	Pg.No.

The following information related to a Company for the year ended 31st March, 2017 are available to you:

Equity share capital of Rs.10 each	Rs.34 lakh
8% Bonds of Rs.100 each	Rs.30.25 lakh
Sales	Rs.50 lakh
Fixed cost (Excluding Interest)	Rs.3.4 lakh
Financial leverage	1.25
Profit – volume Ratio	13.6%
Income Tax Rate Application	30%

You are required to calculate:

(i) Operating leverage;

(ii) Combined leverage; and

(iii) Earning per Share

QUESTION 27	Ex. Book no.	Pg.No.

Betatronics Ltd. has the following balance sheet and income statement information:

Liabilities and Equity	Rs.	Assets	Rs.
Equity Share Capital (Rs. 10 each)	8,00,000	Fixed Assets(Net)	10,00,000
Reserves and Surplus	3,50,000	Current Assets	9,00,000
10% Debentures	6,00,000		
Current Liabilities	1,50,000		
	19,00,000		**19,00,000**

Sales	3,40,000
Less: Operating expenses(Includes Rs.60,000 Depreciation)	1,20,000
EBIT	2,20,000
Less: Interest	60,000
PBT	1,60,000
Less: Taxes	56,000
PAT	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?

Chapter 3

Capital Structure

Track Your Preparation

TOTAL CLASSES -	Ex. Book no.	Pg.No.

Question No.	Class Work	Home Work	Important	Self Practise	
				I	II
Question 1					
Question 2					
Question 3					
Question 4					
Question 5					
Question 6					
Question 7					
Question 8					
Question 9					
Question 10					
Question 11					
Question 12					
Question 13					
Question 14					
Question 15					
Question 16					
Question 17					
Question 18					
Question 19					
Question 20					

QUESTION 1	Ex. Book no.	Pg.No.

A company requires Rs. 25, 00,000 for a new plant, which is expected to yield earnings before interest and taxes Rs. 5, 00,000. The company seeks your advice on three financial alternatives under consideration. The company's objective is to maximize earnings per share.

The following particulars regarding the alternatives are available:

Alternative A: Raise Rs. 2, 50,000 by debt and the rest by issue of fresh equity.

Alternative B: Raise Rs. 10, 00,000 by debt and the rest by issue of fresh equity.

Alternative C: Raise Rs. 15, 00,000 by debt and the rest by issue of fresh equity.

Funds can be borrowed at 10% p.a. upto Rs. 2, 50,000, at 15% p.a. beyond Rs. 2, 50,000 upto Rs. 10, 00,000 and at 20% p.a. beyond Rs. 10, 00,000. The company's shares are currently selling at Rs. 150 but is expected to decline to Rs. 125 in case borrowed funds exceeds Rs. 10, 00,000. The tax rate is 50%.

QUESTION 2	Ex. Book no.	Pg.No.

EXE Ltd. is considering three financing plans. They key information is as follows:

(a) Total investment to be raised Rs. 2, 00,000

(b) Plans of Financing Proportion

Plan	Equity	Debt	Preference Share
A	100%	-	-
B	50%	50%	-
C	50%	-	50%

(c) Interest of debt: 8% Cost of Preference Share: 8%

(d) Tax Rate 50%

(e) Equity shares of the face value of Rs. 10 each will be issued at a premium of Rs. 10 per share.

(f) Expected PBIT is Rs. 80, 000.

Determine for each plans:-

(i) Earnings per share (EPS) and

(ii) The financial break-even points.

(iii) Compute the PBIT range among the plans for indifference.

QUESTION 3	Ex. Book no.	Pg.No.

Equipment company has earnings before interest and taxes (EBIT) of Rs. 10 million. The company currently has outstanding debt of Rs. 20 million at a cost of 7%.

(a) Using the net income (NI) approach and a cost of equity of 12.5%, (1) compute the total value of the firm and firm's overall weighted average cost of capital (Ko) and (2) determine the firm's market debt/equity ratio.

(b) Assume that the firm issues an additional Rs. 10 million in debt and uses the proceeds to retire stock; the interest rate and the cost of equity remain the same (1) compute the new total value of firm and the firm's overall cost of capital and (2) determine the firm's market debt/equity ratio.

QUESTION 4	Ex. Book no.	Pg.No.

Z Ltd. s' operating income (before interest and tax) is Rs. 9,00,000. The firm's cost of debt is 10 per cent and currently firm employs Rs. 30,00,000 of debt. The overall cost of capital of firm is 12 per cent.

Required: Calculate cost of equity.

QUESTION 5	Ex. Book no.	Pg.No.

A new project is under consideration in Zip Ltd., which requires a capital investment of Rs. 4.50 crores. Interest on term loan is 12% and Corporate Tax rate is 50%. If the Debt Equity ratio insisted by the financing agencies is 2:1, calculate the point of indifference for the project if the alternate is all equity.

QUESTION 6	Ex. Book no.	Pg.No.

Alpha Limited requires funds amounting to Rs. 80 lakhs for its new project. To raise the funds, the company has following two alternatives:

(i) To issue Equity Shares (at par) amounting to Rs. 60 lakhs and borrow the balance amount at the interest of 12% p.a.; or

(ii) To issue Equity Shares (at par) and 12% Debentures in equal proportion.

The income-tax rate is 30%.

Find out the point of indifference between the available two modes of financing and state which option will be beneficial in different situations.

QUESTION 7	Ex. Book no.	Pg.No.

A plastic manufacturing company is planning to expand its asset by 50%. All financing for this plan will come from external source. The expansion will generate additional sales of Rs. 6 lakhs with a return of 25% on sales before interest and taxes. Following are the three plans for consideration

(i) Issue 10% debentures.

(ii) Issue 10% debentures of half the required amount & balance in equity shares at 25% premium.

(iii) Issue equity share at 25% premium

Equity capital (Rs. 10 each)	8,00,000	Total Assets	24,00,000
8% Debentures	6,00,000		
Retained earnings	4,00,000		
Current liabilities	6,00,000		
	24,00,000		24,00,000

Sales	Rs. 38,00,000
Operating expenses	32,00,000
EBIT	6,00,000
Interest	48,000
PBT	5,52,000
Taxes at 50%	2,76,000
PAT	2,76,000
EPS	3.45

(i) Determine the indifference point between plans (a) 1&2 (b) 1&3 (c) 2&3

(ii) Assume that PE ratio for plans 1,2, & 3 respectively are 6,6,& 8. Find out the MPS in each of the plans.

QUESTION 8	Ex. Book no.	Pg.No.

The existing capital structure of a company is as follows:

Equity shares of Rs. 100 each	Rs. 40, 00,000
Retained earnings	Rs. 10, 00,000
9% Preference shares	Rs. 25, 00,000
7% Debentures	Rs. 25, 00,000

The existing rate of return on capital is 12% & the income tax rate is 40%. The company requires a sum of Rs. 25, 00,000 to finance expansion programme for which it is considering the following alternatives

(a) Issue equity shares at a premium of Rs. 25 per share.

(b) Issue 10% preference shares.

(c) Issue 8% debentures

It is estimated that P/E ratio in case of equity, preference & debenture financing would be 20, 17 & 16 respectively. Which of the alternatives would you consider to best?

QUESTION 9	Ex. Book no.	Pg.No.

A Company needs Rs. 31, 25,000 for the construction of a new plant. The following three plans are feasible:

I. The Company may issue 3, 12,500 equity shares at Rs. 10 per share.

II. The Company may issue 1, 56, 250 equity shares at Rs. 10 per share and 15, 625 debentures of Rs.100 denomination bearing a 8% rate of interest.

III. The Company may issue 1, 56,250 equity shares at Rs. 10 per share and 15,625 cumulative prefer ence shares at Rs. 100 per share bearing a 8% rate of dividend.

(i) if the Company's earnings before interest and taxes are Rs. 62,500, Rs. 1, 25,000, Rs. 2, 50,000, Rs. 3, 75,000 and Rs. 6, 25,000, what are the earnings per share under each of three financial Plans? Assume a Corporate Income tax rate of 40%.

(ii) Which alternative would you recommend and way?

(iii) Determine the EBIT-EPS indifference points by formulae between Financial Plan I and Plan II and Plan III.

QUESTION 10	Ex. Book no.	Pg.No.

The following information is available regarding the Mid-Air Enterprises:

(i) Mid-Air currently has no debt, it is an all equity company;

(ii) Expected EBIT = Rs. 24 lakhs. EBIT is not expected to increase overnight, so Mid-Air is in a no-growth situation;

(iii) There are no taxes, so T=0 percent;

(iv) Mid-Air pays out all of its income as dividends;

(v) If Mid-Air begins to use debt, it can borrow at the rate Kd= 8 percent. The bor rowing rate is constant and it is independent of the amount of debt used. Any money raised by selling debt would be used to retire common stock so Mid-Air assets would remain constant;

(vi) The risk of Mid-Air's assets and thus its EBIT is such that its shareholders require a rate of return Ke=12% if no debt is used.

Using MM model without corporate taxes and assuming a debt of Rs. 1 crore, you are required to:

(i) Determine the firms total market value;

(ii) Determine the firm's value of equity;

(iii) Determine the firm's leveraged cost of equity.

QUESTION 11	Ex. Book no.	Pg.No.

Bharat and National Industries have the same business risk. Illustrate any arbitrage gains which may be possible using the data below:

Particulars	Bharat Industries	National Industries
Market values		
Equity	Rs.5,00,00,000	Rs. 7,50,00,000
Debt	3,00,00,000	--
Total	**8,00,00,000**	**7,50,00,000**
Earnings(EBIT)	1,50,00,000	1,50,00,000
Less: Interest (10%)	(30,00,000)	--
EBT	**1,20,00,000**	**1,50,00,000**

All earnings are distributed. Assume Mr. X owns 2% of the equity in Bharat industries.

QUESTION 12	Ex. Book no.	Pg.No.

A Ltd. and B Ltd. are identical in every respect except capital structure. A Ltd. does not employ debts in it capital structure whereas B Ltd. employs 12% Debentures amounting to Rs. 10 lakhs.

Assuming that:

(i) All assumptions of M-M model are met;

(ii) Income-tax rate is 30%;

(iii) EBIT is Rs. 2, 50,000 and

(iv) The Equity capitalization rate of 'A' Ltd. is 20%.

Calculate the value of both the companies and find out the Weighted Average Cost of Capital for both the companies.

QUESTION 13	Ex. Book no.	Pg.No.

Assume the same data as given in Question 3 (a) using the net operating income approach and an overall cost of capital of 12%; (1) compute the total value of stock market value of firm, and the cost of equity and (2) determine the firm's market debt/equity ratio. (b) Determine the answer to (a) if the company were to sell the additional Rs. 10 million in debt, as in Question 3.

QUESTION 14	Ex. Book no.	Pg.No.

A company provided the following figures:

Particulars	Amount (₹)
Profit	26,00,000
Less: Interest on debentures @ 12%	6,00,000
	20,00,000
Income tax @ 50%	10,00,000
Profit after tax	10,00,000
No. of equity shares (Rs. 10 each)	4,00,000
EPS	2.50
Market price per share	25
Price/Earning ratio (P/E ratio)	10

The company has undistributed reserves of Rs. 60, 00,000. The company needs Rs. 20, 00,000 for expansion: this amount will earn at the same rate the funds already employed. You are informed that a debt equity ratio [Debt/(Debt+ Equity)] higher than 35% pulls P/E ratio down to 8 & raise the interest rate on additional amount borrowed at 14% you are required to ascertain which of the following proposal should be preferred.

(i) Additional funds raised as a loan.

(ii) Additional funds raised by issuing equity share

QUESTION 15	Ex. Book no.	Pg.No.

The following is the data regarding two companies X & Y:

Particulars	X	Y
No. of Equity Shares	90,000	1,50,000
MPS	Rs. 1.20	Rs.1.00
6% Debentures	Rs. 60,000	-
Profit before interest	Rs. 18,000	Rs. 18,000

All profits after debenture interest are distributed as dividends.

Explain how under M-M Approach an investor holding 10% of shares in X will be better of in switching his holding to their performance.

QUESTION 16	Ex. Book no.	Pg.No.

There are two firms P and Q which are identical except P does not use any debt its capital structure while Q has Rs. 8, 00,000, 9% debenture in its capital structure. Both the firms have earnings before interest and tax of Rs.2, 60,000 p.a. and the capitalization rate is 10%. Assuming the corporate tax of 30% calculate the value of these firms according to MM Hypothesis.

QUESTION 17	Ex. Book no.	Pg.No.

A Company earns a Profit of Rs. 3, 00,000 per annum after meeting its Interest liability of Rs. 1, 20,000 on 12% debentures. The Tax rate is 50%. The number of Equity Shares of Rs. 10 each are 80, 000 and the retained earnings amount to Rs. 12, 00,000. The company proposes to take up an expansion scheme for which a sum of Rs. 4, 00,000 is required. It is anticipated that after expansion, the company will be able to achieve the same return on investment as at present. The funds required for expansion can be raised either through debt at the rate of 12% or by issuing Equity Shares at par.

Required:

(i) Compute the Earnings per Share (EPS), if:

- The additional funds were raised as debt

- The additional funds were raised by issued of equity Shares.

(ii) Advise the company as to which source of finance is preferable.

QUESTION 18	Ex. Book no.	Pg.No.

Company X and Y are in the same risk class are identical in all fashion except that Company Y uses debt while company X does not. The present market values of both the firms are not at equilibrium. Cost of equity of firm X is 25%. Compute the cost of equity of firm Y if they come at equilibrium. EBIT of both firms is Rs. 90 lakhs.

Particulars	Firm X	Firm Y
Market value of equity	400 lakhs	150 lakhs
Market value of debt (interest 18%)	-	150 lakhs
Total value of firm	400 lakhs	300 lakhs

QUESTION 19	Ex. Book no.	Pg.No.

Alpha Limited and Beta Limited are identical except for capital structures. Alpha Ltd. has 50 per cent debt and 50 per cent equity, whereas Beta Ltd. has 20 per cent debt and 80 per cent equity. (All percentages are in market-value terms). The borrowing rate for both companies is 8 per cent in a no-tax world, and capital markets are assumed to be perfect.

(a) (i) If you own 2 per cent of the shares of Alpha Ltd., what is your return if the company has net operating income of ₹3,60,000 and the overall capitalisation rate of the company, K0 is 18 per cent? (ii) What is the implied required rate of return on equity?

(b) Beta Ltd. has the same net operating income as Alpha Ltd. (i) What is the implied required equity return of Beta Ltd.? (ii) Why does it differ from that of Alpha Ltd.?

QUESTION 20	Ex. Book no.	Pg.No.

Yoyo Limited presently has ₹36,00,000 in debt outstanding bearing an interest rate of 10 per cent. It wishes to finance a ₹40,00,000 expansion programme and is considering three alternatives: additional debt at 12 per cent interest, preference shares with an 11 per cent dividend, and the issue of equity shares at ₹16 per share. The company presently has 8,00,000 shares outstanding and is in a 40 percent tax bracket.

(a) If earnings before interest and taxes are presently ₹15,00,000, what would be earnings per share for the three alternatives, assuming no immediate increase in profitability?

(b) Develop an indifference chart for these alternatives. What are the approximate indifference points? To check one of these points, what is the indifference point mathematically between debt and common?

(c) Which alternative do you prefer? How much would EBIT need to increase before the next alter native would be best?