

# MANAGERIAL FINANCE

New Syllabus- 2065

Course No.: FIN 508

Nature of the Course: Core

Duration of the Course: 50 lecture hours

Duration of the Class: 60 minutes

Full Marks: 50

Pass Marks: 20

## CONTENTS

### Unit 1. Nature of Finance LH 4

Nature of managerial finance; Career in finance; The goals of corporation: Stock price maximization and social welfare, Management action to maximize shareholders' wealth, Business ethics and social responsibility, Agency relationship: Stockholders versus Managers; Stockholders versus Creditors; Managerial accountability to shareholders in public limited companies in Nepal.

### Unit 2. Analysis of Financial Statement LH 6

Nature and need of financial analysis; Types of ratios; Trend analysis, common size and percentage change analysis; Du-Pont system of financial analysis; Comparative ratios and 'Benchmarking'; Uses and limitation of ratio analysis; qualitative factors in financial performance evaluation; Application of financial ratios in public limited companies in Nepal.

### Unit 3. Cost of Capital and Financial Structure LH 10

Cost of capital and its significance; component cost of capital; Weighted average cost of capital; Capital structure and cost of capital; Factors affecting the weighted average cost of capital; Adjusting cost of capital for risk; Estimating project risk and risk adjusted cost of capital; Divisional Cost of capital: Cost of capital for a project or a division; Marginal cost of capital; Breaks in marginal cost of capital schedule; Combining the MCC and investment opportunity schedule; Measuring cost of capital in public limited companies in Nepal. Financial leverage; Financial leverage and risk; Financial leverage and equity risk; Financial leverage and ROE; Leverage and operating leverage; Investment and leverage, Factors affecting financial structure.

### Unit 4. Capital Budgeting LH 10

Importance, Generating ideas for capital project; Project classification; Estimating cash flows; Capital budgeting decision rules- PB, DPB, NPV, IRR, MIRR and PI; The basic replacement decision; Expansion projects; Comparison of NPV and IRR methods; Modified internal rate of return; Profitability index, Special application of cash flow evaluation-Projects with different lives; Adjusting for inflation; The optimal capital budget; Business practice and implication in Nepal.

### Unit 5. Working Capital Management LH 6

Working capital terminology; Alternate current assets investment and financing policies; Risk and return trade off; Cash conversion cycle; The concept of zero working capital; Cash management: Concepts and techniques, cash conversion cycle, inventory management; Inventory costs and inventory control systems; Receivable management: Accumulation of receivable: Monitoring receivable position, Setting the elements of credit policy, Other factors influencing credit policy.

### Unit 6. Dividend Policy LH 6

Nature of dividend policy decision; Dividend vs capital gains; Dividend policy issues; Factors influencing dividend policy; Stock dividend; Stock splits; Stock repurchases; Dividend payment procedure and establishing dividend policy practice in public limited companies in Nepal.

### Unit 7. Financial Distress LH 8

Financial distress and its consequences; Issues facing a firm in financial distress, Settlements without going through formal bankruptcy, Predicting bankruptcy: Altman model Reorganization in bankruptcy; Liquidation in bankruptcy; causes for bankruptcy; growing emphasis on merger and acquisition movement in Nepal.

**Basic References**

- Brigham, E.F., Ehrhardt, M.C. (2007) **Financial Management: Theory and Practice**. New Jersey: Thomson South-Western.
- Brigham, E. F; and Ehrhardt, M.C. (2008). **Financial Management: Text and Cases**. New Jersey: Thomson South Western.
- Horne, V. and James C. (2007). **Financial Management and Policy**. New Delhi: Prentice Hall of India.

**Supplementary Readings**

- Keown, A J, Martin, J D, Petty, J W and Scott, D F Jr. (2007). **Financial Management Principles and Applications**. New Delhi: Prentice Hall of India
- Levy, H and Marshall, S (1989) **Principles of Financial Management** New Jersey: Prentice Hall Inc.
- Moyer, R.C., McGuigan, J.R. and William, J.K. (2003). **Contemporary Financial Management**. New Jersey Thomson, South-Western.
- Pandey, I.M. (2004). **Financial Management**, New Delhi: Vikash Publishing House Pvt. Ltd.
- Paudel, R.B., Baral, K.J., Gatam, R.R. and Rana, S.B. (2008). **Corporate Financial Management**. Kathmandu: Asmita Publication.
- Pradhan, R.S. (1992): **Financial Management Practices in Nepal**. New Delhi: Vikash Publishing, House Pvt. Ltd.
- Pradhan, S. (2004). **Basics of Financial Management**. Kathmandu: Educational Enterprises.
- Shrestha, M.K. (1980). **Financial Management**. Kathmandu: Curriculum Development Center, Tribhuvan University.
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- Weston, J.F., Chung, K.S. and Hong, SE. (1998). **Mergers, Restructuring and Corporate Control**. New Delhi: Prentice Hall of India Pvt. Ltd.
- Weston, J.F. and Thomas E.C. (1992). **Managerial Finance**. New York: The Dryden Press.

**New Model Questions- 2066**

Time: 2 hrs.

Full Marks: 50

Group-A (Short Answer Questions)

Attempt any THREE questions.

[3×10 = 30]

1. What is financial distress? Explain the consequences of financial distress. [4+6]
2. Consider the following industry average and financial statements for Himalayan Automobile Corporation. [8+2]

**Balance Sheet as of 31<sup>st</sup> Dec 2008**

Accounts payable	Rs 60,000	Cash	Rs 60,000
Notes payable	60,000	Marketable securities	44,000
Other current liabilities	28,000	A/c receivables	88,000
Long-term debt	32,000	Inventories	212,000
Common stock	252,000	Fixed assets	300,000
Retained earnings	168,000	Accumulated Depreciation	(104,000)
<b>Total</b>	<b>Rs 600,000</b>	<b>Total</b>	<b>Rs 600,000</b>

**Income statement for the year ended Dec 31, 2008**

Sales revenue	Rs 10,60,000
Less: Cost of goods sold	880,000
Gross profit	Rs 180,000
Less: Operating expenses	114,000
Net income before interest and taxes	Rs 66,000
Less: interest	6,000
Net income before tax	Rs 60,000
Less: Tax @ 50%	30,000
<b>Net income</b>	<b>Rs 30,000</b>

**Industry Average Ratios**

Current ratio	= 2 times	Debt ratio	= 30%
Times interest earned	= 7 times	Inventory Turnover	= 10 times
DSO	= 24 days	Fixed Assets Turnover	= 6 times
Total Assets Turnover	= 3 times	Profit Margin	= 3%
Return on Assets	= 9%	Return on equity	= 12.9%

- Calculate all those necessary ratios to make a comparison to industry average ratios.
- What implications exist in comparison of real ratios from that of industry average ratios?

Ans: (a) CR = 2.73 times; D/A ratio = 30%; TIE ratio = 11 times; IT ratio = 4.15 times; DSO = 29.89 days; FAT ratio = 5.4 times; TAT ratio = 1.77 times; PM = 2.83%; ROA = 5%; ROE = 7.14%

- 3 Firm Mammoth Corporation is considering a 3-for-2 stock split. It currently has the stockholders' equity position shown. The current stock price is Rs. 120 per share. The most recent period's earnings available for common stock is included in retained earnings. [2×5=10]

Preferred stock	Rs. 1,000,000
Common stock (100,000 shares at Rs. 3 par)	300,000
Paid-in-capital in excess of par	1,700,000
Retained earnings	<u>10,000,000</u>
Total stockholder's equity	Rs 13,000,000

- What effects on Mammoth would result from the stock split?
- What change in stock price would you expect to result from the stock split?
- What is the maximum cash dividend per share that the firm could pay on common stock before and after the stock split? (Assume that legal capital includes all paid-in capital.)
- Contrast your answers to parts i through iii with the circumstances surrounding a 50% stock dividend.
- Explain the differences between stock splits and stock dividends.

Ans: (i) After stock split: Par value = Rs 2; No. shares = 150,000 shares; Common stock = Rs 300,000  
 (ii) The stock price would decrease to Rs 80 per share from Rs 120. (iii) DPS = Rs. 100 per share (before stock split); Rs. 66.67 per share (after stock split) (iv) Common stock = Rs 450,000; Paid in capital = Rs 7,550,000; Retained earnings = Rs 4,000,000; The stock price would decrease to Rs 80 per share; DPS: Before stock dividend = Rs 100 per share; after stock dividend = Rs 26.67 per share

4. Write short notes on any two: [2×3 = 6]
- Business ethics of a firm
  - Financial leverage and equity risk
  - Monitoring receivable position.

**Group-B (Comprehensive Answer Questions)**

Attempt any ONE question. [1×20 = 20]

5. (a) Wells Printing is considering the purchase of a new printing press. The total installed cost of the press is Rs. 2.2 million. This outlay would be partially offset by the sale of an existing press. The old press has zero book value, cost Rs. 1 million 10 years ago, and can be sold currently for Rs. 1.2 million before taxes. As a result of acquisition of the new press, sales in each of the next 5 years are expected to increase by Rs. 1.6 million, but product costs (excluding depreciation) will represent 50% of sales. The new press will not affect the firm's net working capital requirements. The new press will be depreciated under MACRS using a 5-year recovery period. The firm is subject to a 40% tax rate on both ordinary income and capital gains. Wells Printing's cost of capital is 11%. (Note: Assume that both the old and the new press will have terminal values of Rs. 0 at the end of year 6.)
- Determine the initial investment required by the new press.
  - Determine the operating cash inflows attributable to the new press. (Note: Be sure to consider the depreciation in year 6.)
  - Determine the payback period.
  - Determine the net present value (NPV) and the internal rate of return (IRR) related to the proposed new press.

- v. Make a recommendation to accept or reject the new press, and justify your answer.

Ans: (i) Rs. 1,480,000 (ii) CFAT: Year 1 to Year 6 = Rs. 656,000; Rs. 761,600; Rs. 647,200; Rs. 585,600; Rs. 585,600; Rs. 44,000 (iii) 2.10 years (iv) NPV = Rs. 959,148.32; IRR = 35.0388% (v) Accept.

- (b) Explain the comparative merits and demerits of NPV, IRR, and MIRR.

6. Cartwell-Products has compiled the data shown in the following table for the current costs of its three basic sources of capital- long-term debt, preferred stock, and common stock equity- for various ranges of new financing.

Sources of capital	Range of new financing	After tax cost
Long-term debt	Rs. 0 to Rs. 320,000	6%
	Rs. 320,000 and above	8%
Preferred stock	Rs. 0 and above	17%
Common stock equity	Rs. 0 to Rs. 200,000	20%
	Rs. 200,000 and above	24%

The company's capital structure weights used in calculating its weighted average cost of capital are shown in the following table.

Sources of capital	Weight
Long-term debt	40%
Preferred stock	20
Common stock equity	40
<b>Total</b>	<b>100%</b>

- Determine the break points and ranges of total new financing associated with each source of capital.
- Using the data developed in part (i), determine the break points (levels of total new financing) at which the firm's weighted average cost of capital will change.
- Calculate the weighted average cost of capital for each range of total new financing found in part (ii). (Hints: There are three ranges.)
- Using the results of part (iii), along with the following information on the available investment opportunities, draw the firm's weighted marginal cost of capital (WMCC) schedule and investment opportunities schedule (IOS) on the same set of axes (total new financing or investment on the x axis and weighted average cost of capital and IRR on the y axis).

Investment opportunity	Internal rate of return (IRR)	Initial investment
A	19%	Rs. 200,000
B	15	300,000
C	22	100,000
D	14	600,000
E	23	200,000
F	13	100,000
G	21	300,000
H	17	100,000
I	16	400,000

- v. Which, if any, of the available investments do you recommend that the firms accept? Explain your answer.

Ans: (i) Break Points: Long-term debt = Rs 800,000; Common stock = Rs 500,000; Range of Total New financing: Long-term debt = Rs 0 - Rs 800,000 and Greater than Rs 800,000; Preferred stock = Greater than Rs 0; Common stock = Rs 0 - Rs 500,000; Equity = Greater than Rs 500,000 (ii) WACC will change at Rs 500,000 and Rs 800,000 (iii) WACC: For range of Rs 0 - Rs 500,000 = 13.80%; For range of Rs 500,000 - Rs 800,000 = 15.40%; For range of Greater than Rs 800,000 = 16.20%

## 1. NATURE OF FINANCE

### MBS

#### 1. 2071 Q.No. 1

Does the goal of maximizing the value of the stock conflict with other goals such as avoiding unethical or illegal behavior? In particular, do you think subjects like customer and employee safety, the environment, and general good of society fit in this framework, or are they essentially ignored? Explain.

#### 2. 2070 Q.No. 1

What are the main objectives of Nepalese corporate management? Why business ethic and corporate social responsibility are emphasized these days? [10]

#### 3. 2070 Old Q.No. 1

What are the major issues of conflict of interest between stockholders and managers? How can they be resolved? [10]

#### 4. 2069 Q.No. 1

What is agency problem? What mechanisms are generally used to motivate managers to act in shareholders' best interest? [10]

#### 5. 2069 Old Q.No. 1a

Why is shareholder wealth maximization a better operating goal than profit maximization?

#### 6. 2068 (Old) Q.No. 1

Explain the difference between profit maximization and shareholder wealth maximization. How does the objective of shareholder wealth maximization lead to a better efficiency in resources allocation of the firm? [5+5]

#### 7. 2067 (I) Q.No. 1

Why the goal of stock price maximization is superior to profit maximization goal in maximizing the value of the firm? How the goals of corporate social responsibility lead to the maximization of the value of the firm? [5+5]

#### 8. 2067 (II) Q.No. 1

What are the weaknesses of the goal of profit maximization? How are these weaknesses overcome by the goal of shareholders' wealth maximization? [5+5]

#### 9. 2067 (II) Old Q.No. 1

"The profit maximization is not an operationally feasible objective." Do you agree or not? Give short argument in favour or against this objective.

#### 10. 2066 Partial Q.No. 1

Describe the relationship between stockholders and manager. What problems could be there in this relationship? How can they be resolved? [2+3+5]

#### 11. 2065 (I) Q.No. 1

Briefly discuss the conflict of interest between stockholders and managers and how can they be resolved? [10]

#### 12. 2065 (II) Q.No. 1 a

Explain how investment decisions contribute to the goal of shareholders' value maximization. [5]

#### 13. 2064 Q.No. 1 a

Explain the issues in the conflict of interest between stockholders and managers and how can they be resolved? [5]

#### 14. 2063 Q.No. 1 a

"The goal of maximizing the value of the stock avoids the problems associated with the goal of profit maximization." Comment. [5]

#### 15. 2062 Q.No. 1 a

Should stockholder wealth maximization be thought of as a long run or short run goal? Comment. [6]

#### 16. 2061 Q.No. 1 a

"The goal of maximizing the value of the stock avoids the problems associated with the goal of profit maximization." Discuss. [5]

**17. 2060 Q.No. 1 a**

What are the weaknesses of the goal of profit maximization? How are these weaknesses overcome by the goal of shareholder wealth maximization? [5]

**18. 2059 Q.No. 1 a**

What are the main functions of financial managers? [5]

**19. 2058 Q.No. 1 a**

What are the issues in the conflict of interest between stockholders and managers and how can they be resolved? [5]

**20. 2057 Q.No. 1 a**

What is the difference between firm value maximization and shareholder wealth maximization? [5]

**● Write short notes on:****21. 2069 Q.No. 4a**

Corporate goals versus manager's goals

**22. 2068 Q.No. 4c**

Agency relationship [5+5]

**23. 2067 (II) Q.No. 4a**

Business ethics and social responsibility of corporate firms

**MBA****1. 2054 Q.No. 5 b**

There is a potential conflict in inventory decision between the view of the financial manager and the marketing manager. Why? [10]

**2. 2053 Q.No. 1**

What is the difference between stock price maximization and profit maximization? Under what conditions might profit maximization not lead to stock price maximization? Discuss. [16]

**3. 2050 Q.No. 1**

Discuss the various methods with the help of which a firm can expedite collection of cash. [16]

**4. 2048 Q.No. 1**

What are the major problems involved in profit maximization goal of the firm? How does the goal of shareholder wealth maximization deal with those problems? [16]

**5. 2047 Q.No. 1**

Explain the wealth maximization objective and discuss in what respect it is superior to profit maximization objective. [16]

**6. 2042 Q.No. 1**

What is finance function? Examine the role of financial manager in Nepalese Enterprises. [16]

**7. 2041 Q.No. 1**

There are no other goals as important as the goal of shareholder 'wealth maximization'. Comment. [16]

**8. 2040 Q.No. 1**

Briefly explain the various functions of financial management. [16]

**9. 2039 Q.No. 1**

"The essence of financial management is not procurement but utilization of funds." Comment. [16]

**● Write short notes on:****10. 2057 Q.No. 5 a**

Wealth maximization [8]

**11. 2056 Q.No. 5 a**

Profit maximization [8]

**12. 2055 Q.No. 5 a**

Objective of the firm [8]

**13. 2052 Q.No. 5 a**

Profit maximization vs. wealth maximization [8]

**14. 2050 Q.No. 5 a**

Relationship of finance with other functional areas [8]

## 2. ANALYSIS OF FINANCIAL STATEMENT

### MBS

#### THEORETICAL QUESTIONS

##### 1. 2070 Q.No. 2b

What are the limitations in using financial ratios for evaluating financial performance of the firm? [4]

##### 2. 2069 Q.No. 2b

Discuss the qualitative factors to be considered in financial analysis? [4]

##### 3. 2066 Partial Q.No. 3

How does Du-Pont equation help financial managers in financial planning? [5]

##### 4. 2065 (II) Q.No. 1 b

Financial ratios are powerful tools for financial analysis, but they are not free from limitations. Discuss [5]

#### ● Write short notes on:

##### 5. 2067 (II) Q.No. 4b

Qualitative factors in financial performance evaluation

#### NUMERICAL PROBLEMS

##### 6. 2071 Q.No. 5

Himalayan Company has the following balance sheet and income statement for 2013 (in thousands):

#### Balance Sheet

Cash	Rs. 400	Accounts payable	Rs. 320
Account receivable	1,300	Accruals	260
Inventories (Rs. 1,800 for 2012)	2,100	Short-terms loans	1,100
Total current assets	Rs. 3,800	Current liabilities	Rs. 1,680
Net fixed assets	3,320	Long-term debt	2,000
		Shareholder's equity	3,440
<b>Total assets</b>	<b>Rs. 7,120</b>	<b>Total liabilities and equity</b>	<b>Rs. 7,120</b>

#### Income statement

Net sales (all credit)	Rs. 12,680
Cost of goods sold	(8,930)
Gross profit	Rs. 3,750
Selling, general, and administrative expenses	(2,230)
Interest expense	(460)
Profit before taxes	Rs. 1,060
Taxes	(390)
<b>Profit after taxes</b>	<b>Rs. 670</b>

- a. On the basis of this information, compute (i) the current ratio, (ii) the acid-test ratio, (iii) the average collection period, (iv) the inventory turnover ratio, (v) the debt-to-net-worth ratio, (vi) the gross profit margin, (vii) the net profit margin, and (viii) the rate of return on common stock equity. [8×1.5]
- b. Evaluate the company's financial strength and weakness on the basis of calculation in part 'a'. Also state some qualitative factors analysts should consider when evaluating a company's financial performance. [8]

Ans: (a) (i) 2.26 times (ii) 1.01 times (iii) 36.91 ≈ 37 days (iv) 4.58 times (v) 1.07 (vi) 29.57% (vii) 5.28% (viii) 19.48%

##### 7. 2070 Q.No. 2a

Assume you are given the following relationships for the Mechi Match Factory:

Sales/turnover ratio            1.4 x

Return on assets                3%

Return on equity                5.5%

Calculate Factory's profit margin and debt ratio. Also interpret the result. [6]

Ans: 2.1429%; and 45.45%

**8. 2069 Q.No. 2a**

Exim Corporation has a profit margin of 7 percent, total assets turnover of 1.98 and ROE of 24 percent. What is this firm's debt equity ratio? [6]

Ans: 0.7316 times

**9. 2069 Old Q.No. 2a**

Philip & Company had earnings per share of Rs. 4 last year, and it paid a Rs. 2 dividend. Total retained earnings increased by Rs. 12 million during the year, while book value per share at year end was Rs. 40. Philip has no preferred stock and no new common stock was issued during the year. If company's year end debt (which equals its total liabilities) was Rs. 120 million, what was the company's year end debt/assets ratio?

Ans: 33.33%

**10. 2068 Q.No. 6**

Consider the balance sheet and income statement of HP Computers and industry averages.

**HP Computers Company**  
**Balance Sheet as of December 31, 2008 (in millions)**

Assets	Amount (Rs.)	Equity and Liabilities	Amount (Rs.)
Cash	155	Account payable	258
Receivables	672	Notes payable	168
Inventories	483	Other current liabilities	234
Total current assets	1310	Total current liabilities	660
Net fixed assets	585	Long-term debt	513
		Common equity	722
<b>Total Assets</b>	<b>1895</b>	<b>Total Assets</b>	<b>1895</b>

**HP Computers Company**  
**Income Statement for the year ended December 31, 2008 (in millions)**

Particulars	Amount (Rs.)
Sales	3215
Cost of goods sold	2785
Selling, general and administrative expenses	290
Earnings before interest and taxes (EBIT)	140
Interest expenses	49
Earnings before taxes (EBT)	91
Income taxes (40%)	36.4
<b>Net income</b>	<b>54.6</b>

**Industry average ratios**

Ratios	Industry average
Current ratio	2.0x
Days sales outstanding (based on 365-day year)	65days
Inventory turnover	6.7x
Fixed assets turnover	12.1x
Total assets turnover	3.0x
Net profit margin	1.2%
Return on assets	3.6%
Return on equity	9.0%
Total debt ratio	60.0%

- Calculate the indicated ratios for HP Computers.
- Construct the extended Du-Pont equation for both HP Computers and the industry.
- Outline HP Computers' strengths and weaknesses as revealed by your analysis.
- Suppose HP computers had doubled its sales as well as its inventories, account receivable, and common equity during 2008. How would that information affect the validity of your ratio analysis? Explain. [12+4+2+2]

Ans: (a) Current ratio = 1.98 times; DSO = Rs. 76.29 days; Inventory turnover = 5.766 times; Fixed assets turnover = 5.4957 times; Total assets turnover = 1.6966 times; Net profit margin = 1.70%; Return on assets = 2.88%; Return on equity = 7.56%; Total debt ratio = 61.90%; (b) ROE = 7.56% and 9%



**11. 2067 (I) Q.No. 2**

From the following details, prepare the balance sheet of XYZ Company Ltd:

Stock turnover	5 times
Capital turnover	2 times
Fixed assets turnover	4 times
Gross profits	20%
Debtor collection period (months)	2.5
Creditor payment period (days)	73

The gross profit was Rs.60,000. Closing stock was Rs.5,000 in excess of the opening stock. [10]

Ans: B/S Total = Rs. 198,666.67

**12. 2067 (II) Q.No. 2**

Data for Global Computer Company and its industry averages follow.

**Global Computer Company****Balance Sheet as at December 31, 2005**

Cash	67,500	Account payables	130,000
Receivables	335,000	Notes payables	83,000
Inventories	240,000	Other current liabilities	115,000
Total current assets	642,500	Total current liabilities	328,000
Net fixed assets	292,500	Long term debt	257,000
		Common equity	350,000
Total assets	935,000	Total liabilities and equity	935,000

**Global Computer Company****Income Statement for the year ended Dec. 31, 2005**

Sales of products and services		Rs. 1,607,500
Cost of goods sold	1,353,000	
Gross profit	254,500	
Fixed operating expenses except depreciation		142,000
Depreciation	42,500	
Earning before earning and taxes	70,000	
Interest		26,000
Earnings before taxes		44,000
Taxes 40%	17,600	
<b>Net income</b>	<b>26,400</b>	

Ratio	Global	Industry Average
Current ratio	—	2x
Day's sales outstanding	—	35 days
Inventory turnover	—	5.6x
Total assets turnover	—	3x
Profit margin on sales	—	1.2%
Return on assets	—	3.6%
Return on equity	—	9%
Debt ratio	—	60%

**Required:**

- Calculated the indicated ratios for Global.
- Outline company's strengths and weaknesses as revealed by your calculation compared to industry averages. [8+2]

Ans: (a) 1.96 times; 75 days; 5.64 times; 1.72 times; 1.64%; 2.82%; 7.54%; 62.57%

**13. 2066 Q.No. 3**

Consider the selected items of balance sheet and income statement of Reliance Cement Limited along with industry average of selected ratios for the year 2005 - 2009.

Selected items	2005	2006	2007	2008	2009
Total assets (Rs.)	1000	1100	1210	1331	1464
Debts (Rs.)	600	690	794	913	1049
Common equity (Rs.)	400	410	417	418	415
Sales (Rs.)	5000	6000	7200	8640	10368
EBIT (Rs.)	2000	2500	3500	3600	3800
Net income (Rs.)	500	650	1050	900	950
Industry:					
Debt ratio (%) (debt/total asset)	62	64	65	66	66
Industry: Net profit margin ratio (%) (net profit/sales)	6	8	9	9	9
Company: debt ratio	?	?	?	?	?
Company: net profit margin ratio	?	?	?	?	?

- Compute Reliance's debt ratios and net profit margin ratio for 2005 - 2009.
- Compare the calculated ratios along with industry ratios.

c. Comment on the performance and weakness of Reliance Cement Ltd.

[4+4+2]

Ans: (a) Debt ratio: 60%; 62.73%; 65.62%; 68.60%; 71.65% and Net profit margin ratio = 10%; 10.83%  
14.58%; 10.42%; 9.16%

### MBA

#### 1. 2053 Q.No. 5

Explain the following:

- If a firm's return on equity is low and management wants to improve it, does using more debt help? [8]
- Is it possible for a firm to have a consistently high profit margin on sales and yet be unable to pay its debt obligation? [8]

#### 2. 2059 Q.No. 1 b

Describe the predictive power of financial ratios.

[5]

#### 3. 2051 Q.No. 4 a

How can a firm have a high current ratio and still be unable to pay its bill? Explain with suitable illustration. [8]

#### ● Write short notes on:

#### 4. 2045 Q.No. 5 a / 2052 Q.No. 5 b

Predictive Power of Financial Ratios

[8]

#### 5. 2042 Q.No. 5 a / 2050 Q.No. 5 b

Dupont System of Financial Analysis

[8]

## 3. COST OF CAPITAL AND FINANCIAL STRUCTURE

### A. COST OF CAPITAL

### MBS

#### THEORETICAL QUESTIONS

#### 1. 2070 Q.No. 3b

Explain the significance of marginal cost of capital in financial decision making.

[4]

#### 2. 2069 Q.No. 3b

Give the rationale of issuing new stock when cost of retained earnings is always less than the cost of new issue? [4]

#### 3. 2064 Q.No. 4 b

Explain the relationship between an investor's required rate of return and the value of a security.

[10]

## NUMERICAL PROBLEMS

## 4. 2071 Q.No. 2

Mechi Tea company has the following capital structure, which it considers to be optimal:

Debt	40%
Preferred stock	10
Common stock	50
<b>Total capital</b>	<b>100%</b>

The company's tax rate is 40 percent, and investors expected earnings and dividends to grow at a constant rate of 9 percent in the future. The company paid dividend of Rs. 36 per share and its stock currently sells at a price of Rs. 600 per share. These terms would apply to new security offerings.

Common: New common stock would have a flotation cost of 10 percent.

Preferred: New preferred stock could be sold to the public at a price of Rs. 100 per share, with a dividend of Rs. 12.

Flotation costs of Rs. 5 per share would be incurred.

Debt: Debt could be sold at an annual interest rate of 10 percent.

- Find the component cost of debt, preferred stock, retained earnings, and new common stock.
- Calculate the weighted average cost of capital assuming that common stock financing requirements are all met by retained earnings.
- Briefly explain the uses of weighted average cost of capital in financial decisions. [4+4+2]

Ans: (a)  $k_{DT} = 6\%$ ;  $k_{PS} = 13.63\%$ ;  $k_e = 15.54\%$ ;  $k_c = 16.27\%$  (b) WACC = 11.43%

## 5. 2070 Q.No. 3a

Sona Cement Factory has capital structure that consists solely of debt and common equity. The company can issue debt at 11%. Its stock currently pays Rs. 2.5 dividend per share; and the stock price is currently Rs. 34.75. The company's dividend is expected to grow at a constant rate of 8 percent per year. Its tax rate is 40 percent. And the company estimates that its weighted average cost of capital is 14 percent. What percentage of the company's capital structure consists of each source of financing? [6]

Ans:  $W_d = 19.30\%$  and  $W_e = 80.70\%$

## 6. 2069 Q.No. 3a

The Riley Company has Rs. 200 million in total net assets as the end of 2011. It plans to increase its production machinery in 2012 by Rs. 50 million. Bond financing at 12 percent rate, will sell at par. Preferred stock will have an 11 percent dividend payment and will be sold at par. Common stock currently sells for Rs. 120 per share and can be sold to net Rs. 115 after flotation costs. There is Rs. 10 million of internal funding available from retained earnings. Over the past few years, dividend yield has been 6 percent and the firm's growth rate 8 percent. The corporate tax is 30 percent. The present capital structure shown below is considered optimal.

<b>Debt</b>		
4% coupon bonds	Rs.40,000,000	
7% coupons bonds	Rs.40,000,000	Rs. 80,000,000
Preferred stock		Rs. 20,000,000
Common Stock (Rs. 100 par)	Rs. 40,000,000	
Retained earning	Rs. 60,000,000	
Equity		Rs. 100,000,000

**Required:**

- What is Riley's cost of equity for 2012?
- What is the weighted average cost of capital when Rs. 50 million is raised? [6]

Ans: ① 14.156% ② 11.538%

**7. 2069 Old Q.No. 2b**

The Kathmandu Company plans to issue 20 year bonds that have a 10 percent coupon, a par value of Rs. 1,000; and can be sold for Rs. 920. Interest is paid semi-annually. Company's tax rate is 40 percent.

- ① What is the after tax cost of those debt?
- ② What would be the after tax cost if this were a perpetual bond issue?

Ans: ① 5.49% ② 6.516%

**8. 2068 Q.No. 2**

Lumbini Bricks Ltd. has Rs. 20 million in total assets at the end of 2009. It plans to increase its production capacity in 2010 by Rs. 5 million. Bond financing, at 12 percent rate will sell at par. Preferred stocks will have a 13.5 percent dividend payment and will be sold at a discount of Rs. 5 per share from its par value of Rs. 100. Common stocks currently sell at Rs. 110 at a premium of Rs. 10 per share. But it will involve a flotation cost of Rs. 5 per share netting Rs. 105 for the company. The company can utilize Rs. 1 million from its retained earnings. Over the past few years, dividend yield has been 10 percent and the firm's growth rate is 5 percent. The company pays corporate tax at 30 percent and considers the present capital structure optimal.

Capital structure of Lumbini Bricks Ltd (Rs. in millions)

	Amount	Amount
Debt:		
8% bond	4	
10% bond	4	8
Preferred stock		2
Common stock (Rs. 100 par)	4	
Retained earnings	6	10
<b>Total</b>		<b>20</b>

- a. Calculate component cost of (i) new debt (ii) new preferred stock (iii) retained earnings, and (iv) new equity.
- b. What would be the company's weighted average cost of capital if the company decides to raise Rs. 5 million?
- c. Would the company's cost of capital differ if it decides (i) to reduce the capital budget to Rs. 2 million, or (ii) increase the capital budget to Rs. 7 million? If they differ, what they would be?

[3+3+4]

Ans: (a) (i) 8.4% (ii) 14.21% (iii) 15% (iv) 15.48% (b) 12.425% (c) (i) 12.281% (ii) 12.4524%

**9. 2067 (I) Q.No. 6b**

The Laxmi Torsteel Company has two divisions: Iron and Metal sheets. Each division employs debt equal to 40% and 8% preference stock 10% of its total requirements, with remaining equity capital. The current borrowing rate is 14%, and company's tax rate is 40%. The company wishes to establish a minimum return standard for each division based on the risk of that division. If the cost of equity of iron-rod division is 16 percent and that of metal sheet division is 20 percent, what weighted average required returns on investment would you recommend for these two divisions? If total investments in two divisions (iron and metal) are in the proportion of 6:4, what is the WACC applicable to the firm? [4+4+2]

Ans: 12.16%; 14.16% and 12.96%

**10. 2067 (II) Q.No. 6a**

The following tabulation gives EPS figures for SS Shoe Company during the preceding 5 years. The firm's common stock, 6 million shares outstanding, is now (1/1/2009) selling for Rs. 110 per share, and the expected dividend at the end of the current year 2009 is 60% of the 2008 EPs. Because investors expect past trends to continue, the growth rate 'g' may be based on the earning growth rate.

Year:	2008	2007	2006	2005	2004
EPS:	9.46	8.68	7.96	7.30	6.70

Current interest on debt is 12%. The firm's marginal tax rate is 30%. Its capital structure, considered to be optimal, is as follows:

Debt	Rs. 120 million
Common equity	Rs. 180 million
Total liabilities and equity	Rs. 300 million

Required:

- Calculate company's after tax cost of new debt and of common equity, assuming that new equity comes only from retained earnings.
- Calculate company's weighted average cost of capital, again assuming that present capital structure is maintained.
- What is the significance of cost of capital?

[4+4+2]

Ans: (i) 8.4% and 14.17% (ii) 11.862%

11. 2066 Q.No. 6

The total assets of Megha Metals Ltd were Rs. 120 million on January 1, 2009. By the end of the year total assets are expected to be Rs. 180 million. The company's capital structure given below is considered optimal.

Sources	Amount (in million Rs.)
10% Coupon bond	36
12% Preferred stock	9
Common stock	45
Total	90

The company estimates that it can raise the fund to finance its expansion in the market in the following terms.

- New bonds can be sold at par (Rs. 1,000) at 11 percent coupon rate.
- Preferred stocks can be sold at par Rs. 100 at 11.5 percent dividend rate.
- Common stocks are selling at Rs. 130 in the market. But because of the flotation costs, the company will net Rs. 120.

The company has Rs. 4.5 million retained earnings. The stockholders required rate of return is 12 percent consisting of a dividend yield of 4 percent and expected growth rate of 8 percent. The marginal tax rate is 40 percent.

- What is the rupee amount of capital budget? How much should be financed from the debt, preferred stocks and common stocks to maintain the present capital structure?
- What would be the costs of each source of financing? What would be the weighted average cost?
- At what level of capital budget will there be a break in marginal cost of capital schedule?
- Calculate the marginal cost of capital both below and above the break in the schedule.
- Why do we calculate marginal cost of capital?

[4+6+4+4+2]

Ans: (a) Amount of capital budget = Rs. 60 million and Financed by: debt = Rs. 24 million; Preferred stock = Rs. 6 million; Common stock = Rs. 30 million (b) Cost of debt = 6.6%; Cost of preferred stock = 11.5%; Cost of common stock = 12%; Cost of new equity = 12.33%; WACC = 9.9385% (c) Rs. 9 million (d) MCC (below breakpoint) = 9.79%; MCC (above breakpoint) = 9.955%

12. 2066 Partial Q.No. 3b

The Mechi Tea Company's expected dividend per share is Rs. 20 and it is expected to grow at a constant rate of 6 percent. Current price per share is Rs. 250. Its marginal tax rate is 30 percent. Using the following information, calculate the company's after-tax weighted average cost of capital. [5]

Assets	Amount	Liabilities and Equity	Amount
Current assets	Rs. 400,000	10% long-term bank loan	Rs. 100,000
Fixed asset	600,000	12% debentures	200,000
		Common stock	500,000
		Retained earnings	200,000
	1,000,000		1,000,000

Ans: WACC = 11.725%

**13. 2065 (I) Q.No. 3 b**

The following tabulation gives earnings per share figures for the Trading Company during the preceding 10 years. The firm's common stock, 7.8 million shares outstanding, is now (1/1/2005) selling for Rs. 65 per share, and the expected dividend at the end of the current year 2005 is 55 percent of the 2004 EPS. Because investors expect past trends to continue, 'g' may be based on the earnings growth rate. The EPS in 2004 was Rs. 7.80 and it was Rs. 3.90 ten years back in 1995. The current interest rate on new debt is 9 percent. The firm's marginal tax rate is 40 percent. Its capital structure, considered to be optimal, is as follows:

Debt	Rs. 104 million
Common equity	Rs. 156 million
Total liabilities and equity	Rs. 260 million

**Required:**

- Calculate the cost of new debt and of common equity, assuming that new equity comes only from retained earnings.
- Find company's weighted average cost of capital, assuming that no new common stock is sold and that all debt costs 9 percent.
- Trading Company decided to raise additional debt up to Rs. 6 million to finance additional line of business at interest rate of 10 percent and required equity will be raised by selling new share at Rs. 65 less flotation cost of Rs. 5 per share to maintain the same capital structure in 2006 as of 2005. Calculate the marginal cost of capital.

Ans: (i) 5.4% & 14.6% (ii) 10.92% (iii) 11.49%

**14. 2065 (II) Q.No. 3**

Himal Electronic Company has the following capital structure, which it considers to be optimal.

Sources	Proportion (%)
Debt	30
Preferred stock	20
Common stock	50
Total capital	100

The company's tax rate is 40 percent. Investors expect earnings and dividends to grow at a constant rate of 8 percent in the future. The company paid dividend of Rs. 10 per share last year, and its stock currently sells at a price of Rs. 200 per share. These terms would apply to new security offerings.

**Common:** New common stock would have a flotation cost of 10 percent.

**Preferred:** New preferred stock could be sold to the public at a price of Rs. 100 per share, with a preferred stock dividend of Rs. 12, flotation costs of Rs. 5 per share would be incurred.

**Debt:** Rs. 1,000 par, 10-year debenture could be sold and its annual interest rate would be 12 percent. Flotation cost would be 5 percent of par value.

- Find the component cost of debt, preferred stock, retained earnings, and new common stock. [4]
- Calculate the weighted average cost of capital assuming that common stock financing requirements are met equally by retained earnings and external equity. [3]
- Briefly explain the uses of weighted average cost of capital. [3]

Ans: (i)  $k_{DT} = 7.75\%$ ;  $k_p = 12.6\%$ ;  $k_s = 13.4\%$ ;  $k_e = 14\%$  (ii) WACC = 11.70%

**15. 2064 Q.No. 3**

The management of New Himalayan Corporation (NHC) is planning next year's capital budget. NHC projects its net income at Rs. 7,500 and its payout ratio is 40 percent. The Corporation's earnings and dividends are growing at a constant rate of 5 percent; the last dividend  $D_0$  was Rs. 0.90 and the current stock price is Rs. 8.59. NHC's new debt will cost 14 percent. If NHC issues new common stock, flotation costs will be 20 percent. NHC is at

its optimal capital structure, which is 40 percent debt and 60 percent equity, and the firm's marginal tax rate is 40 percent. NHC has following investment opportunities.

Project	Cost	IRR
A	Rs. 15,000	17%
B	10,000	14
C	15,000	16
D	12,000	15

- What is the cost of retained earnings?
- What is the cost of new common stock?
- What is the WACC?
- What is NHC's optimal capital budget?

[10]

Ans: (a) 16% (b) 18.75% (c)  $WACC_1 = 12.96\%$  and  $WACC_2 = 14.61\%$  (d) Rs. 42,000

**16. 2063 Q.No. 5 b**

On January 1, 2006 the total assets of a certain company were Rs. 60 million. By the end of the year, total assets are expected to be Rs. 90 million (Assume there is no short-term debt). The firm's capital structure, shown below, is considered to be optimal.

Debt (10% coupon bonds)	Rs. 24 million
Preferred stock (at 10.5%)	6 million
Common equity	30 million
<b>Total</b>	<b>60 million</b>

New bonds will have an 11 percent coupon rate and will be sold at par. Preferred stock will have 11.5 percent rate and will also be sold at par. Common stock, currently selling at Rs. 30 a share, can be sold to net the company Rs. 27 a share. Stockholders' required rate of return, estimated to be 12 percent, consists of a dividend yield of 4 percent, and an expected growth of 8 percent. Retained earnings are estimated to be Rs. 3 million (ignoring depreciation). The marginal corporate tax rate is 40 percent.

- Assuming all asset expansion (gross expenditures for fixed assets plus related working capital) is included in the capital budget, what is the rupee amount of the capital budget (ignoring depreciation)?
- To maintain the present capital structure, how much of the capital budget must be financed by equity?
- How much of the new equity funds needed must be generated internally? How much externally?
- Calculate the cost of each of the equity components.
- At what level of capital expenditures will there be a break point in the MCC schedule?
- Calculate the MCC both below and above the break points in the schedule. [10]

Ans: (a) Rs. 30,00,000 (b) Rs. 15,00,000 (c) Rs. 3,000,000 and Rs. 12,000,000 (d)  $K_{DT} = 6.6\%$ ;  $K_p = 12\%$ ;  $K_e = 12.44\%$  (e) 6 million (f) 9.79% and 10.01%

**17. 2062 Q.No. 2**

Everest Recording Studio reported earning of Rs. 4,200,000 last year. From that, the company paid a dividend of Rs. 1.26 on each of its 1,000,000 common shares outstanding. The capital structure of the company includes 40% debt, 10% preferred stock, and 50% common stock. It is taxed at a rate of 40%. [1.5 × 6 + 1]

- If the market price of common stock is Rs. 40 and dividends are expected to grow at a rate of 6% a year for the foreseeable future, what is the company's cost of financing with retained earnings?
- If flotation costs on new shares of common stock amount to Rs. 1 per share, what is the company's cost of new common stock financing?
- The company can issue Rs. 2 preferred stock dividend for a market price of Rs. 25 per share. Flotation costs would amount to Rs. 3 per share. What is the cost of preferred stock financing?
- The company can issue Rs. 1,000 par value, 10% coupon, 5-year bonds that can be sold for Rs. 1,200 each. What is the approximate cost of debt?

- v. What is the maximum investment that Everest Recording can make in new projects before it must issue new common stock?
- vi. What is the WACC for projects with a cost at or below the amount calculated in part (v)?

Ans: (i) 9.34% (ii) 9.42% (iii) 9.09 (iv) 3.17% (v) 5,880,000 (vi) 6.48%

**18. 2060 Q.No. 5 b**

A certain company has Rs. 200 million total net assets at the end of 1980. It plans to increase its production machinery in 2004 by Rs. 50 million. Bond financing, at an 11 percent rate, will sell at par, preferred will have an 11.5 percent interest payment and will be sold at a par value of Rs. 100. Common stock currently sells for Rs. 50 per share and can be sold to net Rs. 45 after floatation costs. There is Rs. 10 million of internal funding available from retained earnings. Over the past few years, dividend yield has been 6 percent and the firm's growth rate 8 percent. The tax rate is 40 percent. The present capital structure shown below is considered optimal: [10]

Debt: 8% coupon bonds	Rs 40 million	
9% coupon bonds	<u>40 million</u>	80 million
Preferred stock		20 million
Common stock (Rs. 10 par)	40 million	
Retained earnings	<u>60 million</u>	<u>100 million</u>
Equity		<u>200 million</u>

- i. How much of the Rs. 50 million must be finance equity capital if the present capital structure is to be maintained?
- ii. How much of the equity funding must come from the sale of new common stock?
- iii. What is the cost of new equity?
- iv. What is the incremental cost of capital?

Ans: (i) 25M (ii) 15M (iii) 14.67% (iv) 10.99%

**19. 2059 Q.No. 2 b**

The Lalitpur Textile Company is expected to pay a year end dividend of Rs. 4.40. The company earns Rs. 7.70 per share, and its stock sells at Rs. 55 per share. Stock price, earnings and dividends are expected to grow 6 percent per year indefinitely. [5]

- (i) Calculate the stockholders' rate of return.
- (ii) If the firm has a zero growth rate and pays out all its earnings as dividends what is the stockholder's rate of return?

Ans: (i) 14% (ii) 14%

**20. 2058 Q.No. 3 a**

A certain company's stock is currently selling for Rs. 45 a share. The firm is earning Rs. 5 per share and is expected to pay a year-end dividend of Rs. 1.80. [5]

- (i) If investors require a 12 percent return, what rate of growth must be expected for the company?
- (ii) If the company reinvests retained earnings to yield the expected rate of return, what will be next year's earning per share?

Ans: (i) 8% (ii) Rs. 5.384

**21. 2057 Q.No. 5 a**

Assuming that a firm has tax rate of 30 percent, compute the after tax cost of the following:

- (i) A bond, sold at par, with a 10.40 percent coupon. [10]
- (ii) A preferred stock, sold at Rs. 100 with a 10 percent coupon and a call price of Rs. 110, if the company plans to call the issue in 5 years.
- (iii) A common stock selling at Rs. 16 and paying a Rs. 2 dividend, which is expected to be continued indefinitely.
- (iv) The same common stock if dividend are expected to grow at the rate of 5 percent per year and the expected dividend in year 1 is Rs. 2.

Ans: (i) 7.28% (ii) 11.61% (iii) 12.50% (iv) 17.50%

**MBA**

**THEORETICAL QUESTIONS**

**1. 2053 Q.No. 5 c**

Do you think that the cost of capital for a firm is fairly constant over time?

[8]



**2. 2051 Q.No. 1**

The cost of retained earning is less than the cost of new outside equity capital. Consequently, it is totally irrational for a firm to sell a new issue of stock and to pay dividends during the same year examine critically. [16]

**3. 2040 Q.No. 4**

'Cost of capital is a determination factor of investment decision'. Explain this statement. [16]

**● Write short notes on:****4. 2055 Q.No. 5 c**

Yield to Maturity [8]

**5. 2048 Q.No. 5 c**

Retained Earning. [8]

**6. 2056 Q.No. 5 c / 2052 Q.No. 5 c / 2042 Q.No. 5 c**

Marginal Cost of Capital (MCC) [8]

**NUMERICAL PROBLEMS****7. 2057 Q.No. 3 a**

The Lalitpur Textile Company is expected to pay a year end dividend of Rs. 4.40. The company earns Rs. 7.70 per share, and its stock sells at Rs. 55 per share. Stock price, earnings and dividends are expected to grow 6 percent per year indefinitely.

- Calculate the stockholders' rate of return.
- If the firm has a zero growth rate and pays out all its earnings as dividends what is the stockholder's rate of return? [5]

Ans: (i) 14% (ii) 14%

**8. 2055 Q.No. 4**

Assuming that a firm has a tax rate of 30 percent, compute the after-tax cost of the following.

- A bond, sold at par, with a 10.4% coupon.
- A preferred stock, sold at Rs. 100 with a 10 percent coupon and a call price of Rs. 110, if the company plans to call the issue in 5 years.
- A common stock selling at Rs. 16 and paying a Rs. 2 dividend which is expected to be continued indefinitely.
- The same common stock if dividends are expected to grow at the rate of 5 percent per year and the expected dividend in year 1 is Rs. 2.
- Compute weighted average cost of capital by using the component cost of capital computed above in (i), (ii) and (iv) if the firm has 30 percent debt, 20 percent preferred stock, and the balance common stock.
- Explain if the weighted average cost of capital computed above can be used as an appropriate acceptance criterion for evaluating investment proposals. [16]

Ans: (i) 7.28% (ii) 11.61% (iii) 12.5% (iv) 17.50% (v) 13.25%

**9. 2054 Q.No. 4 a**

Koshi Tools Company was recently formed to manufacture a new product. The company has the following capital structure in market value terms:

13% debenture	Rs. 6 million
12% preferred stock	Rs. 2 million
Common stock (320,000 shares)	<u>Rs. 8 million</u>
<b>Total</b>	<b>Rs. 16 million</b>

The common stock sells for Rs. 25 a share and the company has a marginal tax rate of 40 percent. A study of publicity held companies in this line of business suggests that the required return on equity is 17 percent for a company of this sort.

- Compute the firm's present weighted average cost of capital.
- Is the figure computed an appropriate acceptance criterion for evaluating investment proposals? [8]

Ans: (a) 12.925% (b) Yes

**10. 2053 Q.No. 2**

- a. The Koshi Leather Company's next expected dividend is Rs. 3.18 its growth rate is 6 percent and the stock now sells for Rs. 36. Now stock can be sold to net the firm Rs. 32.40 per share.
- (i) What is the company's percentage flotation cost?  
 (ii) What is the company's cost of new common stock? Ans: (i) 10% (ii) 15.8% [8]
- b. The Seti noodles company's cost of equity is 16 percent. Its before tax cost of debt is 13 percent and its average tax rate is 40 percent. The stock sells at book value, using the following balance sheet, calculate the company's after tax weighted average cost of capital and interpret the results. Ans: 12.72% [8]

**Balance Sheet of the Company (Rs. in 000)**

Assets	Rs.	Liabilities and equities	Rs.
Cash	120	Long-term debt	1152
Account receivable	240	Equity	1728
Inventories	360		
Plant and equipment (net)	2160		
Total	2,880	Total	2,880

**11. 2051 Q.No. 3**

A company has total assets of Rs. 1 crore, it plans to increase its net assets to Rs. 1.3 crore during the year its present capital structure, considered to be optimal is shown below:

Debt	Rs. 3,000,000
Preference share	3,000,000
Equity	4,000,000
	Rs. 10,000,000

The debt consists of 10 percent coupon bonds. The preference share has par value of Rs. 100 each with 12 percent coupon rate. Common stocks are currently selling for Rs. 150 a share. The company's expected dividend is Rs. 15 and the expected growth rate is 8 percent. If the company raises additional funds, new bonds will have a 12 percent coupon rate and will sell at par the Rs. 100 par value preference share will have a coupon rate of 13 percent and will incur 20 percent flotation cost: new common stock can be sold to net the company Rs. 140 a share the past growth rate is expected to continue in future. It is estimated that the retained earnings will be Rs. 12 lakh which the company can use to meet part of the finance required. The marginal corporate tax rate is 50 percent.

- a. Calculate the weighted average cost of capital before and after the additional to capital. Also find out at which level the company's weighted average cost of capital will increase.
- b. Assume that the retained earnings of the company is Rs. 5 lakh only what will be the (i) weighted average cost of capital and (ii) weighted, marginal cost of capital of the company?
- c. Comment on the above results of a and b, and state why marginal cost of capital increases as more funds are raised. [16]

Ans: (a) 12.3% and 12.67% (b) (i) 14.02% (ii) 14.16%

**12. 2050 Q.No. 2**

A certain company has the following capital structure which it consider to be optimal.

Debt	25%
Preferred stock	15%
Common stock	60%
Total capital	100%

The company's tax rate is 40 percent, and investors expected earnings and dividends to grow at a consistent rate of 9 percent in the future. The company paid a dividend of Rs. 3.60 per share last year ( $D_0$ ) and its stock currently sells at a price of Rs. 60 per share. These terms would apply to new security offerings:

**Common:** New common stock would have flotation cost of 10 percent.

**Preferred stock:** New preferred stock could be sold to the public at a price of Rs. 100 per share, with a dividend of Rs. 11 flotation cost of Rs. 5 per share would be incurred.

**Debt:** Debt could be sold an annual interest rate of 12 percent.

- (a) Find the component cost of debt, preferred stock, retained earnings and new common stock.  
 (b) Calculate the weighted average cost of capital assuming that common stock financing requirements are all met by retained earnings. [16]

Ans: (a)  $k_{dt} = 7.2\%$ ,  $k_{ps} = 11.58\%$ ;  $k_s = 15.54\%$ ;  $k_R = 16.27\%$  (b) 12.86%

**13. 2048 Q.No. 2**

- a. A firm has a current dividend of Rs. 10, per share, an EPS of Rs. 25, and an actual market price of Rs. 150. What is the required rate of return on equity? [8]

Ans: 17.33%

- b. ABC Company is attempting to evaluate the costs of internal and external common equity, the company's stock is currently selling for Rs. 62.50 per share. The company expects to pay Rs. 5.42 per share at the end of the year. The dividends for the past 5 years are given below:

Year	19x5	19x4	19x3	19x2	19x1
Dividend	Rs. 5.17	4.92	4.68	4.46	4.25

The company expects to net Rs. 57.50 per share on a new share after flotation costs.

**Calculate:**

- a. The growth rate of dividends  
 b. The flotation cost (in percentage)  
 c. The cost of retained earning (or internal equity)  
 d. The cost of new common stock (or external equity) [8]

Ans: (a) 5% (b) 8% (c) 13.69% (d) 14.44%

**14. 2047 Q.No. 4**

Company A is currently earning Rs. 5 a share paying Rs. 4 dividends and selling at Rs. 50 a share. The company's earnings dividends, and stock price have all been growing at about 2 percent a year and this growth rate is expected to continue indefinitely. According to the firm's investment bankers, the new common stock issues at this time could be sold to net Rs. 48.

- (a) Calculate the cost of retained earning of company A.  
 (b) Calculate the price of the stock at the end of one year if the company's retained earnings are reinvested to yield 2 percent rather than the cost of capital.  
 (c) If the company had retained none of its earnings and had a zero rate of growth what rate of return would stockholder receive?  
 (d) What is the percentage cost of the newly issued common stock? [16]

Ans: (a) 10% (b) Rs. 41.83 (c) 10% (d) 10.33%

**15. 2045 Q.No. 4**

The ACE Company is interested in measuring its cost of specific types of capital as well as its overall capital cost. Current investigations indicate that the following cost would be associated with the sale of debt, preferred stock, and common stock. The company has a 40% average tax rate.

**Debt:** The Company can sell a 20 year Rs. 1,000 face value bond with a 6% coupon for Rs. 970 an underwriting fee of 2% of the face value would be incurred in this process.

**Preferred stock:** 8% preferred stock having face value of Rs. 75 can be sold Rs. 72 a fee of Rs. 2 per share must be paid to the under writers.

**Common stock:** The company's common stock is currently selling for Rs. 90 per share. The company expects to pay a dividend of Rs. 4 per share at the end of the coming year its dividend payment which represent a fixed payout of earning over the past five years are given below.

Year	1986	1985	1984	1983	1982
Dividend in Rs.	3.75	3.5	3.3	3.15	2.85

It is expected that in order to sell the new common stock it must be underpriced Rs. 5 and therefore will reach the market at Rs. 85 per share. The company must also pay a Rs. 3 per share under writing fee.

- (a) Calculate the specific cost of each source of financing including retained earnings.  
 (b) Given the following book and market value data calculate:  
 (i) The weighted average cost of capital using book value weight and  
 (ii) The weighted average cost of capital using market value weight.

Book and market values for each types of capital are as follows:

Types of Capital	Book Value Rs.	Market Value Rs.
Long-term debt	600,000	650,000
Preferred stock	150,000	180,000
Common stock	200,000	470,000
Retained earning	50,000	-
<b>Total</b>	<b>1,000,000</b>	<b>1,300,000</b>

- (c) Compare the weighted average cost of capital calculated above explains. How are they different? [16]

Ans: (a)  $K_{DT} = 3.85\%$ ,  $k_{ps} = 8.57\%$ ;  $K_N = 11.98\%$ ;  $k_S = 11.54\%$  (b) (i) 6.57% (ii) 7.41%

**16. 2041 Q.No. 3**

Shriram & Co. has an existing debt of Rs. 850,000 at market value for which it pays Rs. 75,000 interest per annum. It also has Rs. 150,000 payables on which no interest is to be paid. It has 2,000, 6% preference shares currently selling at Rs. 80 per share, its face value being Rs. 100. The firm's common stock is currently selling for Rs. 30 per share and 400,000 shares are outstanding. The firm pays a dividend of Rs. 1.80 on the earnings per share of Rs. 3.40. Both earnings and dividends are expected to grow at the rate of 7% indefinitely. The firm plans to issue Rs. 300,000 of 10 year bonds with a 9% interest rate and fetch net proceeds of Rs. 275,000. The firm also plans to sell 50,000 additional equity at Rs. 28.50 to net Rs. 27 after deducting the floating cost Rs. 1.50. The firm tax rate is 50%. What is the marginal weighted average cost of capital for the company? Also state what conclusion do you draw from your calculation? [16]

Ans: 12.22%

**B. FINANCIAL STRUCTURE**

**MBS**

**THEORETICAL QUESTIONS**

**1. 2069 Old Q.No. 1b**

What is the relationship between operating leverage and financial leverage?

**2. 2062 Q.No. 1 b**

Explain the factors affecting financial structure in Nepal.

**3. 2061 Q.No. 1 b**

Compare and contrast operating leverage versus financial leverage.

**4. 2060 Q.No. 1 b**

Explain the factors affecting financial structure.

**● Write short notes on:**

**5. 2071 Q.No. 4b/2068 Q.No. 4b**

Financial leverage

**6. 2070 Q.No. 4c**

Factor affecting capital structure

**7. 2069 Q.No. 4b**

Financial and operating leverages

**8. 2067 (I) Q.No. 4a**

Financial leverage and equity risk

**9. 2066 Q.No. 4c**

Operating leverage

## NUMERICAL PROBLEMS

## 10. 2068 (Old) Q.No. 5b

A corporation produces a portable calculator. Last year 50,000 calculators were sold at Rs. 200 each.

Corporation's income statement for the year ended Dec. 31, 2010 is as follows:

Sales		10,000,000
Less: Variable costs	3,000,000	
Fixed cost	3,000,000	6,000,000
EBIT		4,000,000
Less: Interest		1,000,000
EBT		3,000,000
Less: Tax		1,200,000
EAT		1,800,000
No. of share outstanding	1,000,000	
EPS	Rs. 1.8	

Calculate:

- DOL, DFL, DTL and interpret
- Estimate the next year's EPS if DFL increases by 150 percent. [10+5]

Ans: (i) 1.75 times; 1.3333 times; 2.3333 times (ii) Rs. 0.6

## 11. 2059 Q.No. 3 a

The Mechi Shoe Company and the Mahakali Shoe Company are identical except for their leverage ratios and the interest rate on debt. Each has Rs. 10 million in assets, each earned Rs. 2 million before interest and taxes in 1999, and each has a 40 percent corporate tax rate. The Mechi, however, has a leverage ratio (debt/total assets) of 30 percent and pays 10 percent interest on its debt, while Mahakali has a 50 percent leverage ratio and pays 12 percent interest on debt. Calculate the rate of return on equity (net income/equity) for each firm. [5]

Ans: ROE = 14.571%

## 12. 2058 Q.No. 3 b

CME Corporation produces one product, a small calculator. Last year, 50,000 calculators were sold at Rs. 20 each. CME's income statement for the year ended December 31, 1999 is shown below:

Sales		1,000,000
Less: Variable costs	400,000	
Fixed costs	200,000	600,000
EBIT		400,000
Less: Interest		125,000
Net income before tax		275,000
Less: Income tax		110,000
Net income		185,000
Earnings per share		1.65

Calculate: (a) Degree of operating leverage (DOL) (b) Degree of financial leverage (DFL) and (c) Degree of combined leverage effect (DCL) [5]

Ans: (a) 1.5 times (b) 1.45 times (c) 2.18 times

## 13. 2057 Q.No. 3 a

The Mechi Shoe Company and the Mahakali Shoe Company are identical except for their leverage ratios and the interest rate on debt. Each has Rs. 10 million in assets, each earned Rs. 2 million before interest and taxes in 1999, and each has a 40 percent corporate tax rate. The Mechi, however, has a leverage ratio (debt/total assets) of 30 percent and pays 10 percent interest on its debt, while Mahakali has a 50 percent leverage ratio and pays 12 percent interest on debt. The rate of return on equity (net income/equity) for Mechi and Mahakali may be seen as 14.6 percent and 16.8 percent respectively. Observing that Mahakali has a higher return on equity. Mechi's treasurer decides to raise

the leverage ratio from 30 to 60 percent. This will increase Mechi's interest rate on debt to 15 percent. Calculate the new rate of return on equity for Mechi. **Ans: ROE = 16.50%** [5]

**MBA****THEORETICAL QUESTIONS****1. 2057 Q.No. 1**

What do you understand by financial leverage? Describe the relationship between financial and operating leverage.

**2. 2045 Q.No. 1**

Why do firms in an industry use different degrees of Financial Leverage? How does the use of Financial Leverage effect the break-even point of a firm? Explain. [16]

**● Write short notes on:****3. 2051 Q.No. 5 b**

Operating Leverage vs. Financial Leverage. [8]

**NUMERICAL PROBLEMS****4. 2052 Q.No. 3**

The Sunshine Company is planning to expand its current capacity by 50 percent in anticipation of increasing market demand. New financing alternatives are:

1. Common stock to net Rs. 25 per share (The price-earning ratio will be 12 times if stock financing is used)
2. Starting Debt @ 8 percent (the price earning ratio will be 10 times if debt financing is used.)

The current balance sheet of the company is as follows:

Balance Sheet			
Debt (6%)	Rs. 60,000	Assets	Rs. 200,000
Common stock	60,000		
Retained earnings	80,000		
	Rs. 200,000		Rs. 200,000

The income before interest and taxes of the company is 12 percent of anticipated sales and the tax rate is 50 percent.

a. What are the expected market prices at sales anticipations of Rs. 100,000, Rs. 500,000 and Rs. 10,000,000 under the two financing alternatives?

- b. At sales volume of Rs. 500,000 find
- (i) the degree of operating leverage
  - (ii) the degree of financing leverage and
  - (iii) the degree of combined leverage

Under the following three alternatives

- (i) No additional financing
- (ii) Debt financing
- (iii) Common stock financing

Assume that:

Average sales price per unit of output = Rs. 10

Variable cost per unit of output = Rs. 4

Total fixed cost = Rs. 240,000

Units of output = 50,000 [16]

**Ans: (a) At 100,000: Debt = 0.33; equity = 5.04; At 500,000: Debt = 40.33; equity = 33.84; At 10,00,000: Debt = 90.33; equity = 69.44 (b) (i) 5.31 (ii) 6.19 (iii) 5.31**

**5. 2040 Q.No. 2**

ABC Company recorded sales of Rs. 1 million and it comes to 40,000 units of Rs. 25 each. The variable cost per unit is Rs. 15. Fixed cost amounted to Rs. 200,000. The interest on borrowed capital of Rs. 100,000 is 10%. Based on above information, calculate:

- (a) Operating leverage, financial and combined leverage and
- (b) Analyze the causes of such variation. [16]

**Ans: (a) DOL = 2, DFL = 1.052; DTC = 2.105**

## 4. CAPITAL BUDGETING

## MBS

## THEORETICAL QUESTIONS

## 1. 2070 Q.No. 5b

Which technique is preferred to make the final decision of selecting the project when initial investment is unequal and why? [4]

## 2. 2068 (Old) Q.No. 4a

Why NPV is considered superior to other methods of capital budgeting? [5]

## 3. 2064 Q.No. 4 a

Explain the advantages of discounting technique over non-discounting techniques. [10]

## 4. 2062 Q.No. 4 a

What are the components of net cash outlay in capital budgeting decision? [10]

## NUMERICAL PROBLEMS

## 5. 2071 Q.No. 6

The National Company Limited is evaluating the proposed acquisition of a new equipment. The Equipment's basic price is Rs. 108,000, and it would cost another Rs. 12,500 to modify it for special use by your firm. The equipment falls into the MACRS 3-year class, and it would be sold after 3 years for Rs. 65,000. The machine would require an increase in net working capital (inventory) of Rs. 5,500. The equipment would have no effect on revenues, but it is expected to save the firm Rs. 44,000 per year in before-tax operating costs, mainly labor. The Company's marginal tax rate is 35 percent.

- What is the net cost of the equipment for capital budgeting purpose?
- What are the cash flows in years 1, 2, and 3?
- Compute net present. Should the equipment be purchased?
- Compute internal rate of return of the equipment. Does your decision change?
- Briefly explain the merits of net present value method over internal rate of return. [3+5+5+5+2]

Ans: (a) (Rs. 126,000) (b) Rs. 42,657, Rs. 47,347, Rs. 601,016.21 (c) Rs. 10,849 (d) 16.41%

## 6. 2070 Q.No. 5a

You are a financial analyst for Lightmax Electronic Company. The director of capital budgeting has asked you analyze two proposed capital investments, Project X and Y. Each project has a cost of Rs. 10,00,000 for a period of four years. The cost of capital for each investment is 12%. Company has a practice of straight line depreciation. Corporate tax rate is 25 percent. The project's expected cash flows (EBDT) are as follow:

Year	Expected EBDT	
	Project X	Project Y
0	(Rs. 10,00,000)	(Rs. 10,00,000)
1	11,16,667	7,16,667
2	6,50,000	7,16,667
3	6,50,000	7,16,667
4	3,83,333	7,16,667

## Required:

- Calculate payback period.
- Calculate net present value.
- Calculate modified internal rate of return.
- Interpret the results.

[4×4=16]

Ans: (a)  $PBP_X = 1.1818$  years;  $PBP_Y = 1.6667$  years; (b)  $NPV_X = 855,985.0643$ ;  $NPV_Y = 822,380.7593$ ; (c)  $MIRR_X = 30.73\%$ ;  $MIRR_Y = 30.13\%$ ; (d) X is preferable.

## 7. 2070 Old Q.No. 5

The following facts of Bottlers Nepal (Tarai) are presented on an opportunity to invest in Bottling Plant Machine 'A': Cost of equipment Rs. 1,200,000. The economic life is 10 years. The estimated after tax salvage value at the end of 10 years would be Rs. 200,000. The

additional investment in working capital required would be Rs. 300,000. Machine qualifies for MACRS 7-year class life. The cost saving per year is estimated to be cash flows of Rs. 400,000. Corporate tax rate is 40 percent. The applicable cost of capital is 15 percent.

i. Calculate NPV for the project.

ii. Should the investment be made?

iii. At what discount rate Bottler Nepal (Tarai) will be indifferent to the project? [12+4+4]

**MACRS Depreciation rate:**

Recovery year:	1	2	3	4	5	6	7	8
MACRS %	14.29	24.49	17.49	12.49	8.93	8.93	8.92	4.46

Ans: (i) Rs. 129,054.5616 (ii) Yes (iii) IRR = 17.3269%

**8. 2069 Q.No. 5**

Asian Molding Co. Pvt. Ltd. is considering purchasing a new generations molding machine to replace the existing old one. The existing machine can run for 5 more years producing annual revenues of Rs. 700,000 and cash expenses of Rs. 400,000. Its current book value is Rs. 200,000 and it is being depreciated on straight line basis per year down to zero book value. The machine can be sold today to net Rs. 70,000 and it will sell to net Rs. 50,000 at the end of the fifth year. The replacement machine will cost Rs. 500,000 plus an additional Rs. 100,000 to transport it to the molding room and install it. It will generate revenues of Rs. 900,000 but will have cash expenses of Rs. 450,000. It will be depreciated using the straight line method over a 5 year period at which time it will have a book value of Rs. 200,000 and a cash salvage of Rs. 250,000. The replacement machine will require additional working capital of Rs. 50,000 to be permanently tied up during the operation period.

The firm has decided to finance the cost of the new molding machine by equity and the cost of transportation and installation plus the working capital by using debt. The loan is available from the bank at 12 percent interest rate. The cost of equity of the company at present is 15 percent. The company uses its weighted average cost of capital to evaluate the investment proposals. The company is in 30 percent tax bracket. The tax on capital gain/loss is the same as in the case of ordinary income.

Should the firm make the replacement? Base your decision on the payback period, NPV and IRR?

[2+ 8+8+2]

Ans: K = 9.9233%; PBP = 4.20 years; NPV = 59,164.40; IRR 13.3964% Since, PBP is less than life of machine, the net present value is positive and IRR is higher than the cost of capital, the new machine should be purchased.

**9. 2069 Old Q.No. 5**

A chemical company is considering the replacement of two old machines with a new, more efficient machine. The old machine could be sold for Rs. 70,000 in the secondary market. Their depreciated book value is Rs. 120,000 with a remaining useful and depreciable life of 8 years. Straight line depreciation is used on these machines. The new machine can be purchased and installed for Rs. 480,000. It has a useful life of 8 years, at the end of which a salvage value of Rs. 40,000 is expected. The machine falls into 5 year property class for accelerated cost recovery (depreciation) purposes. Due to its greater efficiency, the new machine is expected to result in incremental annual savings of Rs. 120,000. The company's corporate tax rate is 34 percent, and if a loss occurs in any year on the project it is assumed that the company will receive a tax credit of 34 percent of such loss.

① What are the incremental cash inflows over the 8 years and what is the incremental cash outflow at time 0?

② What is the project's net present value if the required rate of return is 14 percent?

**MACRS depreciation rate:**

Recovery year:	1	2	3	4	5	6
MACRS %	20	32	19	12	12	5

Ans: ① Rs.106,740; Rs.126,324; Rs.105,108; Rs.93,684; Rs.93,684; Rs.82,260; Rs.74,100; \*Rs.100,500 and - Rs. 393,000 ② Rs.75,239.628.



## 10. 2068 Q.No. 5

A new baking machine is available in the market. It costs Rs. 100,000 and last for 5 years. The machine is expected to generate revenue of Rs. 40,000 and requires Rs. 10,000 operating costs (excluding depreciation) annually for 5 years.

- Mr. X is willing to invest in the machine. Should Mr. X invest on the machine, if he (i) requires a rate of return of 10 percent on his investment, (ii) is in 40 percent tax bracket, (iii) depreciates the machine on straight line method, and (iv) uses NPV and MIRR as decision criteria?
- Mr. Y is already in bakery business. He owns an old machine whose book and market value is Rs. 40,000. The machine is expected to run for another 5 years and will be depreciated equally in 5 years. The existing machines is expected to generate revenue of Rs. 25,000 and require Rs. 15,000 operating costs (excluding depreciation) annually for coming 5 years. Should Y replace the old machine by the new one if he (i) requires a rate of return of 10 percent, (ii) is in 40 percent tax bracket, (iii) depreciates the new machines on straight line method, and (iv) uses NPV and MIRR as decision criteria? Comment on the decisions you arrived at. [8+12]

Ans: (a) NPV = -Rs. 1,439.20; MIRR = 9.68% (b) NPV = Rs. 3,685.44; MIRR = 11.32%

## 11. 2068 (Old) Q.No. 4b

Pepsi Nepal (PN) is considering the replacement of one of its bottling machines with a newer and more efficient one. The old machine has a book value of Rs. 500,000 and a remaining life of 5 years. PN does not expect to realize any return from scrapping the old machine in five years, but it can sell the machine now to another firm in the industry for Rs. 300,000. Straight-line depreciation was used on the old machine.

The new machine has a purchase price of Rs. 1,100,000, and estimated useful life of 5 years, and an estimated salvage value of Rs. 200,000. It is expected to economize on the electric power usage, labour, and repair costs and to reduce the number of defective bottles. In total, an annual saving of Rs. 250,000 will be realized if the new machine is installed. The company is in tax holiday for 3 years and thereafter in the 25 percent tax bracket, has a 10 percent cost of capital, and will use MACRS 5-year class life depreciation on the new machine.

- What is the initial cash outlay required for the new machine?
- Should PN purchase the new machine? Support your answer. [5+10]

MACRS depreciation rate:

Recovery year	1	2	3	4	5	6
MACRS%	20	32	19	12	12	5

Ans: (i) - Rs 750,000 (ii) NPV = Rs. 228,284.83

## 12. 2067 (I) Q.No. 5

Asian Printing Co. Pvt. Ltd. is considering the purchase of a new generation printing machine to replace the existing old one. The existing machine can run for 5 more years producing annual revenues of Rs.600,000 with cash expenses of Rs 300,000. Its current book value is Rs.200,000 and it is being depreciated on straight line basis per year down to zero book value. The machine could be sold today to net Rs. 80,000 and it could be sold at the end of 5 years to net Rs.50,000. The new machine will cost Rs.500,000 plus an additional Rs. 100,000 to transport it to the printing room and install it. It will generate revenues of Rs.900,000 but will have cash expenses of Rs.400,000. It will be depreciated using the straight line method over a 5-year period at which time it will have a book value of Rs.200,000 and a cash salvage of Rs. 250,000. The new machine will require additional working capital of Rs.50,000 to be permanently tied up during the operation period.

The company uses its weighted average cost of capital (WACC) to evaluate the investment proposals. The company's WACC is 11%. The company is in 40 percent tax bracket. The tax on capital gain/loss is the same as in the case of ordinary income.

**Required:** ① NCO ② NPV ③ IRR ④ Should the firm make the replacement based on above results? [3+7+7+3]

Ans: ① Rs. 522,000 ② 129,017.40 ③ 18.90% ④ Yes