12. RECEIVABLES MANAGEMENT LH 10

• Purpose and significance of receivables management • Elements of credit policy • Credit standard • Credit terms • Control of receivables • Aging schedule of receivables

13. INVENTORY MANAGEMENT LH 10

• Significance of inventory management • Types of inventories, Objectives of Inventories • Tabulation, Graphic and Formula Methods • Reorder point and safety stock • Determinants of inventories • Inventory control system

14. DIVIDEND POLICY LH 5

• Dividend payment • Dividend procedure • Factors influencing dividend policy • Types of dividend payout schemes

BASIC BOOKS

1 Weston, Fred, Scott Beasley, and Brigham, Eugene F., **Essential of Managerial Finance,** New York: Harcount Brace College Publishers.
2 Brigham, Eugene F. and Joel F. Houston, **Fundamentals of Financial Management,** Singapore: Hacourt Aia Pte Ltd.

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3. Van Horne, James C. and Wachowicz, John M. Jr., ***Fundamentals of Financial Management,*** Pearson Education, Delhi.
4. Ross, Stephen A., Randolph W. Westerfield, and Bradford D. Jordan, ***Fundamentals of Corporate Finance,*** McGraw-Hill/Irwin, Boston.
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6. Shrestha, Manohar K., ***Financial Management,*** Tribhuvan University, Kathmandu.
7. Adhikari, Nanda Kumar, ***Financial Management,*** Sukunda Publication, Kathmandu.
8. Shrestha, Manohar K. ***Readings in Financial Management,*** Buddha Academic Enterprises, Kathmandu.
9 Joshi, Shyam and Dongol, Ratna Man., ***Business Finance,*** Taleju Prakashan, 2060.

TU Question- 2062

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A' (Short Answer Questions) 80

Attempt any EIGHT questions.

1. What are the differences between stock price maximization and profit maximization? Explain.
2. How do the day's sales outstanding help to monitor the receivables position?
3. What are the factors of influencing dividend policy?
4. **(a)** What is the present value of a security that promises to pay you Rs. 5,000 in 20 years? Assume that you can earn 7 percent if you were to invest in other securities of equal risk.

Ans: Rs. 1,292

(b) You are thinking about buying a car, and a local bank is willing to lend you Rs. 20,000 to buy the car. Under the terms of the loan, it will be fully amortized over 5 years (60 months), and the nominal rate of interest will be 12 percent, with interest paid monthly, what would be the monthly payment on the loan? What would be the monthly payment on the loan? What would be the effective rate of interest on the loan?

Ans: Rs. 444.89, 12.68%

5. The Himalayan Company has Rs. 1,312,500 in current assets and Rs. 525,000 in current liabilities. Its initial inventory level is Rs. 375,000 and it will raise funds as additional notes payable and use them to increase inventory. How much can Himalayan's short-term debt (notes payable) increase without pushing its current ratio below 2.0? What will be the firm's quick ratio after Himalayan has raised the maximum amount of short-term funds?

Ans: Rs. 262,500 and 1.19 times

6. The XYZ Company has developed the following data regarding a project to add new production facilities.

State	Probabilities	Market return	Project Return
1	0.05	-0.20	-0.30
2	0.25	0.10	0.05
3	0.35	0.15	0.20
4	0.20	0.20	0.25
5	0.15	0.25	0.30

Calculate:

a. Expected return on the project and market.
b. The standard deviation of the project and market returns.
c. The covariance of the project returns with the market returns.

Ans: (a) 14.55% and 16.25% (b) 13.68% and 9.34% (c) 0.0124375

7. You just purchased a bond that matures in 5 years. The bond has a face value of Rs. 1,000 an 8 percent annual coupon, and has a current yield of 8.21 percent. What is the bond's yield to maturity (YTM)?

Ans: YTM = 8.66%

8. The Home-made Bread Company buys and then sells (as bread) 2.6 million bushels of wheat annually. The wheat must be purchased in multiples of 2,000 bushels. Ordering costs, which include grain elevator removal charges of Rs. 3,500 are Rs. 5,000 per order. Annual carrying costs are 2 percent of the purchase price of Rs.5 per bushel. The company maintains a safety stock of 200,000 bushels. The delivery time is 6 weeks.

a. What is the EOQ?
b. At what inventory level should an order be placed to prevent having to draw on the safety stock?
c. What are the total inventory costs, including the costs of carrying the safety stock?
d. The wheat processor agrees to pay the elevator removal charges if Home-made Bread will purchase wheat in quantities of 650,000 bushels. Would it be to Home-made Bread's advantage to order this alternative quantity?

Ans: (a) 5,09,902 bushels (b) 500,000 bushels (c) Rs. 70,990.20 (d) 58,500

9. Heavy Man, Products stock is currently selling for Rs. 60 a share. The firm is expected to earn Rs. 5.40 per share this year to pay a year-end dividend of Rs. 3.60.

a. If investors require a 9 percent return, what rate of growth must be expected for Heavy Man?
b. If Heavy Man reinvests retained earnings in projects whose average return is equal to the stock's expected rate of return, what will be next year's EPS?

Ans: (a) 3% (b) Rs. 5.562

10. Write short notes (any TWO):
(a) Lock Box System
(b) Bond Valuation
(c) Credit standard.

Group 'B' (Comprehensive Answer Questions) **20**

Attempt any ONE questions.

11. Why is working capital management important for the financial health of the firm? Explain inventory conversion period, receivables conversion period and payables deferral period.
12. You are a financial analyst for Damon Electric Company. The director of capital budgeting has asked you to analyze two proposed capital investments. Project X and Y. Each project has a cost of Rs. 10,000 and the required rate of return for each project is 12 percent. The projects expected net cash flows are as follows:

Year	Project X	Project Y
0	Rs. (10,000)	Rs. (10,000)
1	6,500	3,500
2	3,000	3,500

3	3,000	3,500
4	1,000	3,500

a. Calculate each project's payback period, net present value (NPV) and interest rate of return (IRR).
b. Which project or projects should be accepted if they are independent?
c. Which project should be accepted if they are mutually exclusive?

Ans: (a) Payback period for X = 2.17 years and for Y = 2.86 years, NPVX = Rs. 966.01, NPVY = Rs. 630.72, IRRX = 18.06%, IRRY = 15% (b) Both project (c) Project X

1. INTRODUCTION

1. **2056 'C'**
What are the differences between stock price maximization and profit maximization? Explain.
2. **2056 'F'**
Which goal would you like to recommend to a firm stock price maximization or profit maximization? Discuss.
3. **2057 'F'**
Will profit maximization also result in stock price maximization? Discuss the factors affecting the firm's stock price.
4. **2058 'C'**
What is are the major difference between stock price maximization and profit maximization?
5. **2059 'C'**
What is the goal of financial management? What are the shortcomings of the goal of profit maximization?
6. **2060 'F'**
What should be the goal of the firm: stock price maximization or profit maximization?
7. **2061 'C'**
Is profit maximization an appropriate goal for financial managers? Explain.
8. **2061 'F'**
Explain the primary responsibilities of a corporate financial manager?
9. **2062 'C' Q. No. 1**
What is shareholders' wealth maximization? Do you think that joint venture banks are maximizing shareholders' wealth better than other listed companies?
10. **2062 Q.No.1**
What are the differences between stock price maximization and profit maximization? Explain
11. **2063 Q.No. 1**
What is the difference between stock price maximization and profit maximization? Under what circumstances might profit maximization not lead to stock price maximization? [10]
12. **2064 Q.No. 1**
Which goal would you like to recommend to a firm stock price maximization or profit maximization? Discuss. [10]
13. **2065 Q.No. 1**
What factors motivate corporate managers to act in the shareholders' interest? [10]
14. **2066 Q.No. 1**
Briefly explain the finance in the organization structure of the firm. [10]

2. FINANCIAL STATEMENTS AND CASH FLOWS

Theoretical Questions

1. **2066 Q.No. 2a**
Why cash flow statement is needed to be prepared? Explain. [10]

Numerical Problems

2. 2065 Q.No. 2

Prepare a statement of cash flow statement of the following: [10]

Balance Sheet as at dated December 2004 (Rs. in '000)

Assets	2002	2003	Liabilities	2002	2003
Current assets			Current liabilities		
Cash	84	98	Account payable	312	344
Account receivable	165	188	Notes payable	231	196
Inventories	393	422	Long-term debt	531	463
Net fixed assets	2731	2880	Shareholders' equity	500	550
			Retained earnings	1799	2035
Total assets	3373	3588	Total liabilities	3373	3588

Income Statement for the year ended December 2004 (Rs. in '000)

Sales	2311
Cost of goods sold	1344
Depreciation	276
EBIT	691
Interest paid	135
Taxable income	556
Tax (40%) must be (43.885 or 44%)	244
Net income	312
Dividend paid	76
Addition to retained earnings	236

3. 2066 Q.No. 5

Prepare a cash flow statement from following Balance Sheet of XYZ Company for the year 2008. Net income for the year 2008 is Rs. 330,000. [10]

(Rs. in thousand)

Assets	2007 (Rs.)	2008 (Rs.)	Liabilities	2007 (Rs.)	2008 (Rs.)
Cash	3,500	15,000	Accounts payable	9,000	7,500
Marketable securities	0	5,500	Notes payable	1,500	7,500
Bills receivable	15,000	11,000	Other current liabilities	7,500	3,500
Inventories	26,500	30,000	Long term debts	4,000	12,000
Gross fixed assets	37,500	62,500	Common stocks	14,500	28,500
Less: Accumulated depreciation	(12,500)	(17,500)	Retained earnings	33,500	47,500
	70,000	106,500		70,000	106,500

Ans: CFOA = Rs. 325,500; CFIA = Rs. (20,000); CFFA = Rs (2,94,000); Ending cash balance = Rs. 15,000

3. FINANCIAL ANALYSIS

Theoretical Questions

1. 2062 'C' Q. No. 2

Why might it be possible for a company to make large operating profits, yet still be unable to meet debt payments when due? What financial ratios might be employed to detect such a condition?

2. 2063 Q.No. 11

Why do banks emphasize balance sheet and income statement analysis when considering loan requests? Explain if possible with example. [20]

3. 2066 Q.No. 2 b

What difference you find between asset management ratios and debt management ratios? [10]

Write Short Notes on:

4. 2063 Q.No. 10 a BBS III Old / 2066 Q.No. 10b BBS III (Old)

Use and limitations of ratios

Numerical Problems

5. 2056 'C'

Nepal Trading Company had earnings per share of Rs.4 last year, and it paid a Rs.2 dividend. Book value per share at year-end was Rs.40, while total retained earnings increased by Rs.12 million during the year. The company has no preferred stock, and no new common stock was issued during the year. If the 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%

6. 2056 'F'

Lalitpur Brick Company has Rs. 1,313,500 in current assets and Rs. 525,000 in current liabilities. Its initial inventory level is Rs. 375,000 and it will raise funds as additional notes payable and use them to increase inventory. How much can company's short term debt (notes payable) increase without violating a current ratio of 2 to 1? What will be the firm's quick ratio after the company has raised the maximum amount of short-term funds?

Ans: Rs. 263,500; 1.19 times

7. 2057 'C'

From the following data of a certain company, calculate current assets.

Cash and marketable securities	Rs. 100 million
Fixed assets	283.50 million
Sales	1,000 million
Net income	50 million
Quick ratio	2.0 times
Current ratio	3.0 times
DSO	40 days
ROE	12 %

Ans: Rs. 316.8 million

8. 2057 'F'

Dhaulagiri Match Company had a quick ratio of 1.4, a current ratio of 3.0, an inventory turnover of 6 times, total current assets of Rs.810,000, and cash and marketable securities of Rs.120,000 in 1998. What were company's annual sales and its Days Sales Outstanding (DSO) for that year?

Ans: Rs. 25,92,000; DSO = 35.83 or 36 days

9. 2058 'C'

Morang Brick Company has Rs. 1,313,500 in current assets and Rs. 525,000 in current liabilities. Its initial inventory level is Rs. 375,000 and it will raise funds as additional notes payable and use them to increase inventory. How much can company's short term debt (notes payable) increase without violating a current ratio of 2 to 1? What will be the firm's quick ratio after the company has raised the maximum amount of short-term funds?

Ans: Rs. 263,500; 1.19 times

10. 2058 'F'

The following data apply to Narayani Sugar Factory (Million of rupees):

Cash and marketable securities	Rs. 100
Fixed assets	Rs. 283.50
Sales	Rs.1,000
Net income	Rs.50
Quick ratio	2.0 times
Current ratio	3.0 times
DSO	40 days
ROE	12 %

The factory has no preferred stock- only common equity, current liabilities, and long-term debt. Find accounts receivable and current liabilities.

Ans: AR = Rs. 111.1 million & CL = Rs. 105.6 million

11. 2059 'C'

Assume you are given the following relationships for the Seti Match Corporation:

Sales / Total Assets	1.4 ×
Return on assets (ROA)	3%
Return on equity (ROE)	5%

Calculate company's profit margin and debt ratio.

Ans: 2.1429% and 40%

12. 2059 'F'

Complete the liabilities side of the balance sheet and sales information in the table that follows for Janakpur Sugar Factory using the following financial data:

Debt ratio	= 50%
Quick ratio	= 0.80 times
Total assets turnover	= 1.5 times
Days sales outstanding	= 36 days
Gross profit margin	= 25%
Inventory turnover ratio	= 5 times
Total assets	= Rs. 300,000

	Rs.
Account payable	?
Long term debt	60,000
Common stock	?
Retained earnings	97,500
Total assets	?
Cost of goods sold	?

Ans: AP = Rs. 90,000; CS = Rs. 52,500; TA = Rs. 300,000; COGS = Rs. 337,500

13. 2060 'C'

Complete the assets side of the balance sheet and sales information in the table that follows for Mechi Pottery Industries using the following financial data:

Debt ratio: 50%
Quick ratio: 0.8 times
Total assets turnover: 1.5 times
Days sales outstanding: 36 days
Gross profit margin: 25%
Inventory turnover: 5 times
Long term debt: Rs. 60,000
Retained earnings: Rs. 97,500

Cash	... ...
Accounts receivable	... ...
Inventories	... ...
Fixed assets	... ...
Total assets	Rs. 300,000
Sales	... ...

Ans: Cash = Rs. 27,000; AR = Rs. 45,000; Rs. 67,500; Rs. 160,500; Sales = Rs. 450,000

14. 2060 'F'

Nepal Trading Company has earnings per share of Rs. 4 last year, and it paid a Rs. 2 dividend. Book value per share at year-end was Rs.40, while total retained earnings increased by Rs. 12 million during the year. The company has no preferred stock, and no new common stock was issued during the year. If the 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%

15. 2061 'C'

Nepal Sugar Industries has Rs. 1,400,000 in current assets and Rs. 600,000 in current liabilities. Its initial inventory level is Rs. 400,000 and it will raise funds as additional notes payable and use them to increase inventory. How much can company's short term debt (notes payable) increase without pushing its current ratio below 2.0? What will be the firm's quick ratio after the company has raised the maximum amount of short-term funds?

Ans: Increase in inventory Rs. 200,000; 1.25 times

16. 2061 'F'

A Company had a quick ratio of 1.2, a current ratio of 3.0, an inventory turnover of 8 times, total current assets of Rs.900,000, and cash and marketable securities of Rs.140,000 in 1997. What were company's annual sales and DSO for that year?

Ans: Rs. 43,20,000 and 18.33 days

17. 2062 Q.No.5

The Himalayan Company has Rs. 1,312,500 in current assets and Rs. 525,000 in current liabilities. Its initial inventory level is Rs. 375,000 and it will raise funds as additional notes payable and use them to increase inventory. How much can Himalayan's short-term debt (notes payable) increase without pushing its current ration below 2.0? What will be the firm's quick ratio after Himalayan has raised the maximum amount of short-term funds?

Ans: Rs. 262,500 and 1.19 times

18. 2063 Q.No. 2

Complete the balance sheet and sales information in the table that follows for Iceberg Industries using the following financial data: [10]

Debt ratio	50%
Quick ratio	0.8x
Total assets turnover	1.5x
Days sales outstanding	40 days
Gross profit margin on sales	30%
Inventory turnover	5x

Balance Sheet

Cash	.....	Accounts payable	.....
Accounts receivable	.....	Long-term debt	Rs. 60,000
Inventories	.....	Common stock	.....
Fixed assets	.....	Retained earnings	Rs. 97,500
Total assets	Rs. 300,000	Total liabilities and equity	.....
Sales	.....	Cost of goods sold	.....

Ans:

Cash	22,000	Accounts payable	90,000
Accounts receivable	50,000	Long-term debt	60,000
Inventories	63,000	Common stock	52,500
Fixed assets	135,000	Retained earnings	Rs. 97,500
Total assets	Rs. 300,000	Total liabilities and equity	300,000
Sales	450,000	Cost of goods sold	315,000

19. 2063 Q.No. 3 BBS III Old

Das Agro Products Inc., has sales of Rs. 2,000,000 a net income of Rs. 150,000 and the following balance sheet:

Cash	Rs. 10,000	Accounts payable	Rs. 30,000
Receivables	50,000	Other current liabilities	20,000
Inventories	150,000	Long-term debt	50,000
Net fixed assets	90,000	Common equity	200,000
Total assets	**300,000**	**Total liabilities and equity**	**300,000**

The company's new owner, thinks that inventories are excessive and can be lowered to the point where the current ratio is equal to there industry average, 2.5x, without affecting either sales or net income. If inventories are sold off and not replaced so as to reduce the current ratio to 2.5x, if the funds generated are used to reduce long-term debt by 50 percent and remaining to reduce common equity (stock can be repurchased at book value) and if no other changes occur, by how much will (a) the debt ratio change, and (b) the return on equity change?

Ans: (a) –6.59% (b) 20.54%

20. 2063 Q.No. 3 BBS III Partial

Garment Export Inc. has Rs. 5,00,000 of debt outstanding, and it pays an interest rate of 12 percent annually. Corporation's annual sales are Rs. 2,000,000; its average tax rate is 25 percent; and its net profit margin on sales is 3 percent. If the corporation does not maintain a TIE ratio of at least 4 times, its bank will refuse to renew the loan, and bankruptcy will result.

a. What is corporation's TIE ratio?

b. By what percentage net profit margin should increase in order to get loan renewed? [10]

Ans: (a) 2.33 times; (b) 125%

21. 2064 Q.No. 5

The following data apply to A.L. Kaiser & Company (millions of rupees)

Cash and marketable securities	Rs. 100.00
Fixed assets	Rs. 283.50
Sales	Rs. 1,000.00
Net income	Rs. 50.00
Quick ratio	2.0X
Current ratio	3.0X
Days sales outstanding	40.0 days
Return on equity	12.0%

Kaiser has no preferred stock-only common equity, current liabilities, and long-term debt. Find Kaiser (i) Account receivable (A/R), (ii) Current liabilities (iii) Current assets, (iv) Total assets, (v) ROA, and (vi) Common equity. [10]

Ans: (i) Rs. 111.1 million (ii) Rs. 105.6 million (iii) Rs. 316.8 million (iv) Rs. 600.3 million (v) 8.33% (vi) Rs. 416.67 million

22. 2064 Q.No. 3 [BBS III Year] / 2064 C Q.No. 3

World Corporation has Rs. 500,000 of debt outstanding, and it pays an interest rate on 10 percent annually. Corporation's annual sales are Rs. 2,000,000, its average tax rate is 20 percent, and its net profit margin on sales is 5 percent. If the corporation does not maintain a TIE ratio of at least 5 times, its bank will refuse to renew the loan, and bankruptcy will result,

a. What is corporation's TIE ratio (Times Interest Earned)?

b. By what percentages net profit margin should increase in order to get loan renewed [10]

Ans: (a) 3.5 times (b) 60%

23. 2065 Q.No. 3

A Trading Corporation has Rs. 500,000 of debt outstanding, and it pays an interest rate of 10 percent annually. Corporation's annual sales are Rs. 2,000,000; its average tax rate is 30 percent; and its net profit margin on sales is 4 percent. If the corporation does not maintain a times interest earnings (TIE) ratio of at least 6 times, its bank will refuse to renew the loan, and bankruptcy will result.

a. What is corporation's TIE ratio?

b. By what percentage net profit margin should increase in order to get loan renewed? 10

Ans: (a) 3.286 (b) 118.75%

24. 2065 Q.No. 3 [BBS III Old]

Garment Export Inc. has Rs. 5,000,000 of debt outstanding, and it pays an interest rate of 12 percent annually, Corporation's annual sales are Rs. 20,000,000; its average tax rate is 25 percent; and its net profit margin on sales is 3 percent. If the corporation does not maintain a TIE ratio of at lest 4 times, its bank will refuse to renew the loan, and bankruptcy will result.

a. What is corporation's TIE ratio?

b. By what percentage net profit margin should increase in order to get loan renewed? [10]

Ans: (a) 2.3333 times (b) 125%

25. 2066 Q.No. 3 BBS III (Old)

Garment Corporation has Rs. 500,000 of debt outstanding, and it pays an interest rate of 10 percent annually. Corporations' annual sales are Rs. 2,000,000, its average tax rate is 25 percent; and its net profit margin on sales is 5 percent. If the corporation does not maintain a TIE ratio of at least 5 times, its bank will refuse to renew the loan, and bankruptcy will result.

a. What is corporation's TIE ratio?
b. By what percentage net profit margin should increase in order to get loan renewed? [10]

Ans: (a) 3.67 times (b) 50%

4. RISK AND RETURN THEORY

Theoretical Questions

1. 2057 'C'

Explain the concept of portfolio risk and the capital assets pricing model.

Write Short Notes on

2. 2056 'C' / 2059 'F'

Beta coefficient.

3. 2056 'F' / 2060 'C'

Portfolio risk.

4. 2057 'F'

Risk aversion.

5. 2059 'C'

Capital Asset Pricing Model.

6. 2062 'F' Q. No. 10 (a)

Portfolio.

Numerical Problems

7. 2056 'C'

The market and Stock J have the following probability distributions :

Probability	k_M	k_j
0.30	15%	20%
0.40	9	5
0.30	18	12

Where,

k_M = required rate of return on a portfolio consisting of all stocks, which is the market portfolio and / or required rate of return on an average stock.

k_j = required rate of return on stock j

a. Calculate the expected rates of return for the market and Stock J.
b. Calculate the standard deviations for the market and Stock J.
c. Calculate the coefficient of variations for the market and Stock J.
d. Interpret all the above results.

Ans: (a) 13.5% & 11.6% (b) 3.85% & 6.22% (c) 0.29 & 0.54

8. 2056 'F'

Stock X and Y have the following probability distributions of expected future returns:

Probability	0.1	0.2	0.4	0.2	0.1
X	– 10%	2	12	20	38
Y	– 35%	0	20	25	45

a. Calculate the expected rate of return for stock Y. (That for X is 12%)
b. Calculate the standard deviation of expected returns for stock X. (That for stock Y is 20.35%) Now calculate the coefficient of variation for stock Y. Is it possible that most investors might regards stock Y as being less risk than stock X? Explain.

Ans: (a) 14% (b) σ_X = 12.20 & CV_X = 1.02; CV_Y = 1.4

9. 2057 'F'

Suppose risk free rate of return, k_{RF} = 8%, required rate of return on a portfolio consisting of a stocks, k_M = 11%, and Stock A's rate of return, k_a = 14%.

a. Calculate stock A's beta.
b. If stock A's beta were 1.5, what would be B's new required rate of return?

Ans: (a) 2 (b) 12.5%

10. 2058 'C'

Stock X and Y have the following probability distributions of expected future returns:

Probability	0.1	0.2	0.4	0.3	0.1
X	– 10%	2	12	20	38
Y	– 35%	0	20	25	45

a. Calculate the expected rate of return for stock Y. (That for Stock X is 12%)
b. Calculate the coefficient of variation for Stock Y. Is it possible that most investors might regard Stock Y as being less risky than Stock X? Explain.

Ans: (a) 14% (b) $CV_X = 1.02$ & $CV_Y = 1.45$

11. 2058 'F'

Suppose $k_{RF} = 9\%$, $k_M = 14\%$ and $b_j = 1.3$. What is k_j, the required rate of return on stock j ? Now suppose k_{RF} increases to 10 percent. The slope of the SML remains constant. How would this affect k_M and k_j ?

Ans: $K_j = 15.5\%$; $K_j = 16.5\%$ (at K_{RF} increases to 10%)

12. 2059 'C'

Suppose you hold a diversified portfolio consisting of a Rs. 7,500 investment in each of 20 different common stocks. The portfolio beta is equal to 1.12. Now suppose you have decided to sell one of the stock in your portfolio with a beta equal to 1.0 for Rs. 7,500 and to use these proceeds to buy another stock for your portfolio. Assume the new stock's beta is equal to 1.75. Calculate your portfolio's new beta.

Ans: 1.16

13. 2059 'F'

Suppose you won the Kathmandu lottery and were offered (1) Rs.0.5 million or (2) a gamble in which you would get Rs.1 million if a head were flipped but zero if a tail came up.

a. What is the expected value of the gamble?
b. Would you take the sure Rs.0.5 million or the gamble?
c. If you choose the sure Rs.0.5 million, are you a risk averter or a risk seeker? Explain.

Ans: (a) Rs. 500,000 (b) As the sure vale and expected value is same (i.e. 0.50 million) one should take the sure instead the gamble, because gamble is risky investment. (c) If it is chosen, an investor be a risk averter not a risk seeker.

14. 2060 'C'

Suppose you are the money manager of a Rs. 4 million investment fund. The fund consists of 4 stocks with the following investments and betas:

Stock	Investment	Beta
A	Rs.400,000	1.50
B	600,000	(0.50)
C	1,000,000	1.25
D	2,000,000	0.75

If the required rate of return is 14 percent and the risk free rate is 6 percent, what is the fund's required rate of return?

Ans: 12.10%

15. 2060 'F'

Suppose risk free rate of return, $k_{RF} = 8\%$, required rate of return on a portfolio consisting of all stocks, $k_M = 11\%$, and stock A's rate of return, $k_A = 14\%$.

a. Calculate stock A's beta.
b. If stock A's beta were 1.5, what would be A's new required rate of return?

Ans: (a) 2 (b) 12.5%

16. 2061 'C'

Stock R has a beta of 1.5. Stock S has a beta of 0.75, the expected rate of return on an average stock is 13 percent, and the risk free rate of return is 7 percent. By how much does the required return on the riskier stock exceed the required return on the less risky stock? Explain what happens to the required rate of return if risk free rate increase from 7 percent to 8 percent.

Ans: $K_R = 16\%$; $K_s = 11.5\%$

17. 2061 'F'

You have a Rs. 2 million portfolio consisting of Rs. 100,000 investment in each of 20 different stocks. The portfolio has a beta equal to 1.1. You are considering selling Rs. 100,000 worth of one stock, which has a beta equal to 0.9 and using the proceeds to purchase another stock, which has a beta equal to 1.4. What will be the new beta of your portfolio following this transaction?

Ans: 1.124975

18. 2062 'C' Q. No. 9

You have Rs. 2 million portfolio consisting of a Rs. 100,000 investment in each of 20 different stocks. The portfolio has a beta equal to 1.1. You are considering selling Rs. 100,000 worth of one stock, which has a beta equal to 0.9 and using the proceeds to purchase another stock, which has a beta equal to 1.4.

a. What will be the new beta of your portfolio following this transaction? Explain their effects on new beta.
b. If risk free rate is 5% and average market return is 15%, what is the required rate of return on your new portfolio?

Ans: (a) 1.1250 (b) 16.25%

19. 2062 'F' Q. No. 9

Stock X and Y have the following probability distributions of expected future returns.

Probability	X	Y
0.1	(10%)	(35%)
0.2	2	0
0.4	12	20
0.2	20	25
0.1	38	45

a Calculate the expected rate of return of Y. (Expected rate of return of X is12%)
b. Calculate the standard deviation of expected returns for stock X. (That for stock Y is 20.35%)
c. Calculate the coefficient of variation for stock Y. Is it possible that most investors might regard stock Y as being less risky than stock X? Explain.

Ans: (a) 14% (b) 12.20% (c) CV_Y 1.45, CV_X = 1.02

20. 2062 Q.No.6

The XYZ Company has developed the following data regarding a project to add new production facilities.

State	Probabilities	Market return	Project Return
1	0.05	-0.20	-0.30
2	0.25	0.10	0.05
3	0.35	0.15	0.20
4	0.20	0.20	0.25
5	0.15	0.25	0.30

Calculate:

a. Expected return on the project and market.
b. The standard deviation of the project and market returns.
c. The covariance of the project returns with the market returns.

Ans: (a) 14.50% and 16.25% (b) 13.68% and 9.34% (c) 0.0126

21. 2063 Q.No. 4

Stock X and Y have the following probability distribution of expected future returns:

Probability	0.1	0.2	0.3	0.3	0.1
Returns on X (%)	(10)	2	12	20	38
Return on Y (%)	(35)	0	20	25	45

a. Calculate the expected rate of return for stock X.
(Given expected rate of return for Y is 14.5%)
b. Calculate the standard deviation of expected rate of return for Y.
(Given variance of X is 154.56)

c. Is it possible that most investors might regard stock Y as being more risky than stock X? Explain. [10]

Ans: (a) 12.8% (b) 20.55%

22. 2063 Q.No. 9 BBS III Old

Stock X and Y have the following probability distribution of expected future returns:

Probability	0.1	0.2	0.3	0.3	0.1
Return on X%	(10)	2	12	20	38
Return on Y (%)	(35)	0	20	25	45

a. Calculate the expected rate of return for stock Y. (Given expected rate of return for X is 12.8%)
b. Calculate the standard deviation of expected rate of return for X. (Given variance is 422.5)
c. It is possible that most investors might regard stock X as being less risky than stock Y? Explain.

Ans: (a) $\bar{R}y$ = 14.5% (b) σ_x = 12.43% (c) CV_X = 0.97; CV_Y= 1.41; Most investor might regard stock 'X' because stock 'X' is the less risky stock due tot eh minimum coefficient of variation

23. 2063 Q.No. 9 BBS III Partial

Suppose you hold a diversified portfolio consisting of a Rs. 10,000 investment in each of 12 different common stocks. The portfolio beta is 1.18. Now suppose you have decided to sell two of the stock in your portfolio with a beta equal to 1.0 and 2.0 respectively for Rs. 10,000 each, and to use these proceeds to buy another stock of Everest Bank to include in your portfolio. Assume the new stock beta is equal to 1.75; calculate your new portfolio beta. [10]

Ans: New Portfolio Beta = 1.222

24. 2064 Q.No. 5

The Toy Company has developed the following data regarding a project to add new production facilities.

State of economy	Probabilities	Market return	Project return
1	0.05	–0.20	–0.30
2	0.25	0.10	0.05
3	0.35	0.15	0.20
4	0.20	0.20	0.25
5	0.15	0.25	0.30

Calculate:

a. Expected rate of return for market and for project.
b. The standard deviation for market return and project return.
c. Coefficient of variance for market and project. [10]

Ans: (a) 16.25% and 14.5% (b) 13.68% and 9.34% (c) 0.6441 and 0.8418

25. 2064 Q.No. 9 [BBS III Year]

Stock X and Y have the following probability distribution of expected future returns:

Probability	0.1	0.2	0.4	0.2	0.1
X (%)	(10)	2	12	20	38
Y (%)	(35)	0	20	25	45

a. Calculate the expected rate of return of Y. (Expected rate of return of X is 12%)
b. Calculate the standard deviation of expected return for stock X (That for stock Y is 20.35%) Now calculate the coefficient of variation for stock Y as being less than stock X? Explain. [10]

Ans: 14% (b) 12.20% (c) 1.02 and 1.45

26. 2064 C Q.No. 9

Stock X and Y have the following probability distribution of expected future returns:

Probability	0.1	0.2	0.3	0.3	0.1
Return on X (%)	(10)	2	12	20	38
Return on Y (%)	(35)	0	20	25	45

a. Calculate the expected rate of return for stock X. (Given expected rate of return for Y is 14%)
b. Calculate the standard deviation of expected rate of return for Y.

(Given variance of X is 154.56)

c. Is it possible that most investors might regard stock Y as being more risky than stock X? Explain.

Ans: (a) 12.8% (b) 20.35% (c) 1.02; 1.45

27. 2065 Q.No. 4

Stock X and Y have the following probability distribution of expected future returns:

Probability	0.1	0.2	0.3	0.3	0.1
Return on x (%)	(10)	2	12	20	38
Return on Y (%)	(35)	0	20	25	45

a. Calculate the expected rate of return for stock Y.
(Given expected rate of return on X is 12.8%)

b. Calculate the standard deviation of expected rate of return for X.
(Given variance of Y is 422.5)

c. Is it possible that most investors might regard stock X as being less risky than stock Y? Explain. Why? 10

Ans: (a) Ry = 14.5% (b) σ_x = 12.43% (c) CV_X = 0.97; CV_Y= 1.41; Most investor might regard stock 'X' because stock 'X' is the less risky stock due tot eh minimum coefficient of variation

28. 2065 Q.No. 9 [BBS III Old]

Suppose you hold a diversified portfolio consisting of a Rs. 10,000 investment in each of 12 different common stock. The portfolio beta is 1.18. Now suppose you have decided to sell two of the stock in your portfolio with a beta equal to 1.0 and 2.0 respectively for Rs. 10,000 each, and to use these proceeds to buy another stock of NABIL Bank to include in your portfolio. Assume the new stock beta is equal to 1.75; calculate your new portfolio beta. [10]

Ans: β_N = 1.2217

29. 2066 Q.No. 6

There are two assets and three states of economy with following probabilities and rate of return on stock R and stock S. [10

State of economy	Probabilities of state of economy	Rate of return on stock	
		R	S
Recession	0.20	– 15%	20%
Normal	0.50	20	30
Boom	0.30	60	40

a. Find out the expected return on each stock.

b. Find out standard deviation on each stock.

c. Find out expected return and standard deviation on each stock if you put Rs. 15,000 i stock R and Rs. 5,000 in stock S given total investigation of Rs. 20,000.

Ans: (a) 25% and 31% (b) 26.46% and 6.78% (c) 26.5% 21.59

30. 2066 Q.No. 9 BBS III (Old)

The market and stock J have the following probability distributions:

Probability	0.3	0.4	0.3
Market return (km)	15%	9%	18%
Stock J return (kJ)	20%	5%	12%

a. Calculate the expected rate of return for the market and stock J.

b. Calculate the standard deviation for the market and stock J.

c. Calculate the coefficient of variation for the market and stock J. Also interpret the result.[1

Ans: (a) 13.5%; 11.6% (b) Rs. 3.85%; 6.22% (c) 0.285; 0.5

5. TIME VALUE OF MONEY

Theoretical Questions:

1. 2055 Q.No.3

Why is time value of money concept so important in financial analysis? [1

2. 2056 Q.No.3

Explain what is meant by the following statement. "A rupee in hand today is worth more than a rupee to be received next year." [10]

Write Short Notes on

3. 2063 Q.No. 10 b / 2066 Q.No. 10a

Time value of money [5]

Numerical Problems:

4. 2054 Model Q.No.6

Find the present values of the following cash flow streams. The appropriate discount rate is 8 percent.

Year	Cash Stream A (Rs.)	Cash Stream B (Rs.)
1	100	300
2	400	400
3	400	400
4	400	400
5	300	100

What is the value of each cash flow stream at a 0 percent discount rate? [7 + 3]

Ans: Stream A = Rs. 1,251.21 and Stream B = Rs. 1,300.27, Stream A = Rs. 1,600.00 and Stream B = Rs. 1,600.00

5. 2055 Q.No.7

(a) Find the present values of the following cash flow streams, discounted at 7 percent.

Year 1	Year 2	Year 3 through 20
Rs. 100	Rs. 400	Rs. 300

(b) Which amount is worth more at 14 percent, Rs. 1000 in hand today or Rs. 2,000 due after 6 years? [6 + 4]

Ans: (a) Rs. 3,078.62; (b) Rs. 1,000 and Rs. 911.20

6. 2056 Q.No.7

Assume that it is now January 1, 1998. On January 1999, you will deposit Rs. 1,000 into a savings account that pays 8%. If the bank compounds interest annually, how much will you have in your account on January 1, 2002? What would your January 1,2002, balance be if the bank used quarterly compounding rather than annual compounding? [5 + 5]

Ans: Rs. 1,259.69, Rs. 1,268.10

7. 2057 Q.No.5

To complete your last year in Bachelor on Business Studies and then go through Chartered Accountancy you will need Rs. 60,000 per year for four years, starting next year. Your father offers to put you through in the Chartered Accountancy Institute, and he will deposit in a bank time deposit paying 8% interest a sum of money that is sufficient to provide the four payments of Rs. 60,000 each. His deposit will be made today. How large must the deposit be? [10]

Ans: Rs. 198,726

8. 2057 Q.No.12

Assume that it is now January 1, 1998, and you will need Rs. 1000 on January 1, 2002. Your bank compounds interest at an 8% rate annually.

(a) How much must you deposit on January 1, 1999 to have a balance of 1,000 on January 1, 2002?

(b) If you want to make equal payments on each January 1 from 1999 through 2002 to accumulate the Rs. 1000, how large must each of the four payments be?

(c) If your father were to offer either to make the payments calculated in Part B or to give you a lump sum of Rs. 750 on January 1, 1999, which would you choose?

(d) If you have only Rs. 750 on January 1, 1999, what interest rate, compounded annually, would you have to earn to have the necessary Rs.1000 on January 1, 2002? [5+5+5+5]

Ans: (a) Rs. 793.80, (b) Rs. 221.92, (c) Rs. 944.76, (d) 10.064%

9. 2058 Q.No.6

Find the present value of the following ordinary annuities.

(a) Rs. 400 per year for 10 years at 10 present.

(b) Rs. 200 per year for 5 years at 5 present.

(c) Now rework parts A and B assuming that payments are made at the beginning of each year, that is, they are annuities due. [3+3+4]

Ans: (a) Rs. 2457.84, (b) Rs. 865.90, (c) Rs. 2703.60 and Rs. 909.20

10. 2058 Q.No.10

While Shyam Thapa was a student at the University, he borrowed Rs. 12,000 at an annual interest rate of 9 percent. If he repays Rs. 1500 per year, how long to the nearest year will it take him to repay the loan? [10]

Ans: 15 years (nearly)

11. 2058 Q.No.12 (a)

Morang Brothers invests Rs. 4million to clear a tract of land and to set out some young trees. The trees will mature in 10 years, at which time Morang Brothers plans to sell the forest at an expected price of Rs. 8million. What is Morang Brothers' expected rate of return? [6]

Ans: 7.18%

12. 2058 Q.No.12 (b)

Karnali Mortage Company offers to lend you Rs. 85,000; the loan calls for payments of Rs. 8,273.59 per year for 30 years. What rate of interest is the mortgage company changing you? [6]

Ans: 9%

13. 2059 Q.No.6

Find the present values and future values of the following cash flow streams. The appropriate discount rate is 8 percent.

Year	Cash Stream A (Rs.)	Cash Stream B (Rs.)
1	100	300
2	400	400
3	400	400
4	400	400
5	300	100

What is the value of each cash flow stream at a 0 percent discount rate? [7 + 3]

Ans: PV_A = 1,251.21; PV_B = Rs. 1,300.27; FV_A = Rs. 1,838.49; FV_B = Rs. 1,910.59; PV_A = PV_B = Rs. 1600

14. 2059 Q.No.10

Assume that it is now January 1, 1998. On January 1, 2000 you will deposit Rs. 1000 in saving account that pays 8%. If bank compounding annually how much will you have in your account on January 1, 2003? What would be your January 1, 2003 balance be if the bank used monthly compounding rather than annual compounding? [10]

Ans: Rs. 1,259.63, Rs. 1,270.24

15. 2060 Q.No.6

Find the future value of the following annuities. The first payment in these annuities is made at the end of Year I, that is, they are ordinary annuities.

(a) Rs. 400 per year for 10 years at 10 present.

(b) Rs. 200 per year for 5 years at 5 present.

(c) Now rework parts A and B assuming that payments are made at the beginning of each year, that is, they are annuities due. [3+3+4]

Ans: (a) Rs. 6,374.96, (b) Rs. 1,105.12, (c) Rs. 7,012.456 and Rs. 1,160.38

16. 2060 Q.No.10

Your broker offers to sell you a note for Rs. 13,250 that will pay Rs. 2,345.05 per year for 10 years. If you buy the note, what rate of interest (to the closest percent) will you be earning?

Ans: 12%

17. 2060 Q.No.12 (a)

Find the interest rate, or rates of return on each of the following.

a. You borrow Rs. 700 and promise to pay back Rs.749 at the end of 1 year.

b. You lend Rs. 700 and receive a promise of Rs. 749 at the end of 1 year.

c. You borrow Rs. 85,000 and promise to pay back Rs. 201,229 at the end of 10 years

d. You borrow Rs. 9,000 and promise to make payments of Rs. 2,684.80 per year for 5 years

Ans: a. 7%, b. 7%, c. 9% and d. 15%

18. 2060 Q.No.12 (b)

The Lalitpur Textile Company buys a machine for Rs. 50,000 and expects return of Rs. 11,511.19 per year for the next 8 years. What is the expected rate of return?

Ans: 16%

19. 2061 Q.No.7

Your late Uncle entitles you to receive Rs. 1,500 at the end of every two years for next two decades. The first cash flow is two years from now. At 10 present compound annual interest rate, what is the present value of this cash flow pattern?

Ans: Rs. 6,081.428

20. 2061 Q.No.9

You have won the Kathmandu lottery. Lottery officials offer the choice of following alternative payments:

Alternative 1: Rs. 10,000 one year from now

Alternative 2: Rs. 20,000 five years from now

(a) Which would you choose if the discount rate is (i) 0 percent (ii) 10 percent

(b) What rate makes the options equally attractive?

Ans: (a) PV of Alternative 1: Rs.10,000 at 0% and Rs. 20,000 at 10%; P_V of Alternative 2: Rs. 9,091 at 0% and Rs. 12,418.50 at 10%; Alternative 2 (b) i = 18.92%

21. 2062 Q.No.5 Old

You plan to make a series of deposits in an interest bearing account. You will deposit Rs. 1,000 today, Rs. 2,000 at the end of year 2 and Rs. 8,000 at the end of year 5. If you withdraw Rs. 3,000 at the end of 3 and Rs. 5,000 at the end of year 7, (a) how much will you have after eight years if the interest rate is 9 percent? (b) What is the present value of this cash flow?

Ans: (a) Rs. 5,641 (b) Rs. 2,831

22. 2062 Q.No.4 (a)

What is the present value of a security that promises to pay you Rs. 5,000 in 20 years? Assume that you can earn 7 percent if you were to invest in other securities of equal risk.

Ans: Rs. 1,292

23. 2062 Q.No.4 (b) New

You are thinking about buying a car, and a local bank is willing to lend you Rs. 20,000 to buy the car. Under the terms of the loan, it will be fully amortized over 5 years (60 months), and the nominal rate of interest will be 12 percent, with interest paid monthly, what would be the monthly payment on the loan? What would be the effective rate of interest on the loan?

Ans: Rs. 444.89, 12.68%

24. 2063 Q.No. 5

You are planning to borrow Rs. 1,000,000 on a 5-year, 12 percent, annual payment, fully amortized term loan. What fraction of the payment made at the end of the third year will represent repayment of principal? [10]

Ans: 71.18%

25. 2064 Q.No. 4 a

What is the present value of a security that promises to pay you Rs. 5,000 in each year for 20 years? Assume that you can earn 7 percent if you were to invest in other securities of equal risk.

Ans: 52,970

26. 2064 Q.No. 4 b

If you deposit money today into an account that pays 6.5 percent interest, how long will it take for you to double your money? [5]

Ans: 11 years (approx.)

27. 2064 Q.No. 5 [BBS Old II Year]

(a) Suppose you had just celebrated your 19th birthday. A rich uncle set up a trust fund for you that will pay Rs. 100,000 when you turn 25 years. If the relevant discount rate is 11 percent, how much is this fund worth today? [5]

(b) You have just joined the investment-banking firm of Pandey and Pandey Company. They have offered you two different salary arrangements. You can have Rs. 30,000 per year for next two years or Rs. 20,000 for the next two years, along with a Rs. 30,000 signing bonus today. If the interest rate is 12% compounded quarterly, which do you prefer? [5]

Ans: (a) 53,464.08 (b) First option (PV of 1st option Rs 50,343 is greater than the PV of 2nd option Rs 45,788)

28. 2064 Q.No. 12 b [BBS Old II Year]

Your company is planning to borrow Rs. 1,000,000 on a 5-year, 15 percent annual payment amortized term loan. What fraction of the payment made at the end of the third year will represent repayment of interest?

Ans: 34.25%

29. 2065 Q.No. 6 [BBS Old II Year]

Your company is planning to borrow Rs. 1,000,000 on 5-Year, 12% annual payments, fully amortized term loan. What fraction of the payment made at the end of the second year will represent repayment of principal? [10]

Ans: PMT = Rs. 277,407.90; Fraction of Principal in 2nd year = 63.55%

30. 2065 Q.No. 12 b [BBS Old II Year]

Assume the appropriate discount rate for the following cash flows is 14% compounded quarterly, what is the present and future values of the cash flows?

Year	1	2	3	4
Cash flow (Rs.)	800	700	0	1200

Ans: Rs. 1,920.801 and Rs. 3,330.56

31. 2065 Q.No. 5

a. Suppose you had just celebrated your 19th birthday. A risk uncle set up a trust fund for you that will pay Rs. 100,000 when you attain 25 years. If the relevant discount rate is 10 percent, how much is this fund worth today?

b. You have just joined the investment-banking firm of Pradhan and Pradhan. They have offered you two different salary arrangements. You can have Rs. 32,000 per year for next two years or Rs. 20,000 for the next two years, along with a Rs. 35,000 signing bonus today. If the interest rate is 12% compounded quarterly, which do you prefer? 10

Ans: (a) Rs. 56,447.40 (b) Alternative 1;[$PV_{Alt\,1}$ = Rs. 53,692.80 and $PV_{Alt\,2}$ = Rs. 50,787.81]

32. 2066 Q.No. 5 (Old)

a. What is the future value of 3 years ordinary annuity of Rs. 500 if the appropriate interest rate is 8 percent? Also find present value of an annuity given the same interest rate and present value of an annuity due.

b. What annual interest rate will cause Rs. 100 to grow to Rs. 665.5 in 3 years?

Ans: (a) Rs. 1,288.55 and and Rs. 1,391.63 (b) 88.08%

6. BONDS AND THEIR VALUATION

Theoretical Questions

1. 2062 'F' Q. No. 11

Explain the bond market. Why bond market is not fully introduced in capital market of Nepal? Comment.

2. 2065 Q.No. 6 a

What is straight bond? What are its features? 5

Write Short Notes on

3. 2060 'F'/2062 Q.No.10 (b)

Bond valuation. 5

4. 2062 'C' Q. No. 10 (a)/ 2064 Q.No. 10 a [BBS III Year]

Yield to maturity. 5

5. 2065 Q.No. 10 b [BBS III Old]

Changes in bond value over time

Numerical Problems

6. 2056 'F'

The Karnali Company has two bond issues outstanding. Both bonds pay Rs.100 annual interest plus Rs.1,000 at maturity. Bond L has a maturity of 15 years and Bond S a maturity of 1-year. What will be the value of each of these bonds when the going rate of interest is (a) 5 percent,

(b) 8 percent, and (c) 12 percent? Assume that there is only one more interest payment to be made on Bond S. Why does the longer-term (15-year) bond fluctuate more when interest rates change than does the shorter-term bond (1–year)?

Ans: For bond L: (a) Rs. 1,047.64 (b) Rs. 1,171.15 (c) Rs. 863.79; For bond S: (a) Rs. 1,047.64 (b) 1,018.49 (c) Rs. 982.19

7. 2057 'C'

The yield to maturity is the interest rate earned on a bond that is held to maturity. What will be the yield to maturity of a perpetual bond with a Rs. 1,000 par value, an 8 percent coupon rate, and a current market price of (a) Rs.600, (b) Rs. 800, and (c) Rs. 1,000? Assume interest is paid annually.

Ans: (a) 13.33% (b) 10% (c) 8%

8. 2057 'F'

Suppose Tansen Textile Company sold an issue of bonds with a 10-year maturity, a Rs. 1,000 par value, a 10 percent coupon rate, and semiannual interest payments.

a. Two years after the bonds are issued, the going rate of interest on bonds such as these fell to 6 percent. At what price would the bonds sell?
b. Suppose that, 2 years after the initial offering the going interest rate had risen to 12 percent. At what price would the bonds sell?
c. Suppose that the conditions in part (a) existed that is, interest rates fell to 6 percent 2 years after the issue date. Suppose further that the interest rate remained at 6 percent for the next 8 years. What would happen to the price of the Company's bonds over time?

Ans; (a) Rs. 1,251.26 (b) Rs. 898.89 (c) It would fall gradually from Rs. 1,251.26 to Rs. 1,000 at maturity date.

9. 2058 'C'

Suppose Narayani Textile Company sold an issue of bonds with a 10-year maturity, a Rs. 1,000 par value, a 10 percent coupon rate, and semiannual interest payments.

a. Two years after the bonds were issued, the going rate of interest on bonds such as these fell to 6 percent. At what price would the bonds sell?
b. Suppose that, 2 years after the initial offering, the going interest rate had risen to 12 percent. At what price would the bonds sell?
c. Suppose that the conditions in Part (a) existed– that is, interest rates fall to 6 percent 2 years after the issue date. Suppose further that the interest rate remained at 6 percent for the next 8 years. What would happen to the price of the Company's bonds over time?

Ans: (a) Rs. 1,251.26 (b) Rs. 898.89 (c) It would fall gradually from Rs. 1,251.26 to Rs. 1,000 at maturity date.

10. 2058 'F'

The bonds of Koshi Corporation are perpetuities with a 10 percent coupon. Bonds of this type currently yield 8 percent, and their par value is Rs. 1,000.

a. What is the price of the bonds?
b. Suppose interest rate levels rise to the point where such bonds now yield 12 percent. What would be the price of the bonds?

Ans: (a) Rs. 1,250; (b) Rs. 833.33

11. 2059 'C'

Dang Textile Industries bond has a 10 percent coupon rate and Rs. 1,000 face value. Interest is paid semi-annually, and the bond has 20 years to maturity. If investors require a 12 percent yield, what is the bond's value? What is the effective annual yield on the bond?

Ans: Rs. 849.51 & 12.36%

12. 2060 'C'

Biratanagar Biscuit Company carries as 8 percent coupon, paid semi-annually. The par value is Rs. 1,000, and the bond matures in six years. If the bond currently sells for Rs. 911.37, what is its yield to maturity? What is the effective annual yield?

Ans: Semiannual YTM = 5%; annual yield = 10.25%

13. 2061 'C'

A 10-year, 12 percent semiannual coupon bond, with a par value of Rs. 1,000, may be called in 4 years at a call price of Rs. 1,060. The bond sells for Rs. 1,100. (Assume that the bond has just been issued.)

a. What is the bond's yield to maturity?
b. What is the bond's current yield?
c. What is the bond's capital gain or loss yield?
d. What is the bond's yield to call?

Ans: (a) 5.1976% (b) 10.91% (c) capital loss yield = 0.26% (d) 5.08%

14. 2061 'F'

Six years ago, The Singer Company sold a 20-year bond issue with a 14 percent annual coupon rate and a 9 percent call premium. Today, Singleton called the bonds. The bonds originally were sold at their face value of Rs.1,000. Compute the realized rate of return for investors who purchased the bonds when they were issued and who surrender them today in exchange for the call price.

Ans: YTC = 15.0275%

15. 2062 'F' Q. No. 4

You just purchased a bond, which matures in 5 years. The bond has a face value of Rs. 1000, and has an 8 percent annual coupon. The bond has a current yield of 8.21 percent. What is the bond's yield to maturity and show their effects?

Ans: 8.66%

16. 2062 Q.No.7

You just purchased a bond that matures in 5 years. The bond has a face value of Rs. 1,000 an 8 percent annual coupon, and has a current yield of 8.21 percent. What is the bond's yield to maturity YTM)?

Ans: YTM = 8.66%

17. 2063 Q.No. 6 BBS III Old

You just purchased a bond that matures in 5 years. The bond has a face value of Rs. 1,000; and has an 8 percent annual coupon. The bond has a current yield of 8.21 percent. What is the bond's yield to maturity?

Ans: 8.66%

18. 2064 Q.No. 7

Suppose Ford Motor Company sold an issue of bonds with a 10-year maturity, a Rs. 1,000 par value, a 10 percent coupon rate and semi-annual interest payments.

a. Two years after the bonds were issued, the going rate of interest on bonds such as these fell to 6 percent. At what price would the bond sell?
b. Suppose that, 2 years after the initial offering, the going interest rate had risen to 12 percent. At what price would the bonds sell? [10]

Ans: (a) Rs. 1,251.26 (b) Rs. 898.89

19. 2064 Q.No. 5 [BBS III Year]

The Crimson Company issued a new series of bonds on January 1, 2002. The bonds were sold at par Rs. 10000, have a 12% coupon, and mature in 30 years, on December 31, 2031. Coupon payments are made semi-annually (on June 30 and Dec. 31]

a. What is the YTM of Company's bond on January 1, 2002?
b. What was the price of the bond on January 1, 2007, assuming that the level of interest rates had fallen to 10 percent?
c. On July 1, 2025, company's bonds sold for Rs. 925. What was the YTM at that date? [10]

Ans: (a) 12% (b) Rs. 1,182.55 (c) 13.80% (approx); 14.27% (Effective)

20. 2064 C Q.No. 6

The Modi Tire Company issued a new series of bonds on January 1, 2001. The bonds were sold at par Rs. 1000, have a 12% coupon, and mature in 30 years, on December 31, 2030. Coupon payments are made semi-annually (on June 30 and Dec. 31).

a. What is the YTM of Company's bond on January 1, 2001?

b. What was the price of the bond on January 1, 2006, assuming that the level of interes rates had fallen to 10 percent?

c. On July 1, 2024, company's bonds sold for Rs. 925. What was the YTM at that date?

Ans: (a) 12% (b) Rs. 1,182.5

21. 2065 Q.No. 6 b

You just purchased a bond that matures in 5 years. The bond has a face value of Rs. 10,000 and has a 9 percent annual coupon. The bond has a current yield of 12 percent, what is bond's yield to maturity?

Ans: 16.77%

22. 2066 Q.No. 9a

A company issues 10%, 15 years Bond 5 years ago. Bond is currently selling at Rs. 950. Fin approximate yield and annual yield to maturity using trial and error method. [5

Ans: 10.86% and 10.8492%

7. STOCK AND THEIR VALUATION

Theoretical Questions

1. 2063 Q.No. 6 a

What are the characteristic features of preference share? [

2. 2066 Q.No. 3

Discuss the features of common stock. [1

Write Short Notes on

3. 2058 'C'

Common stock valuation

4. 2064 Q.No. 10 a/ 2065 Q.No. 10 b

Stock valuation

Numerical Problems

5. 2056 'C'

Everest Biscuit Company's current stock price is Rs.36, and its last dividend was Rs.2.40. view of company's strong financial position and its consequent low risk, its required rate return is only 12 percent. If dividends are expected to grow at a constant rate in the future, a if required rate of return on stock is expected to remain at 12 percent, what is compan expected stock price 5 years from now?

Ans: Rs. 45.

6. 2059 'F'

The Gandaki Gas Company has just paid a cash dividend of Rs. 2 per share. Investors requi a 16 percent return from investments such as this. If the dividend is expected to grow at steady 8 percent per year, what is the current value of the stock? What will the stock be wo in five years?

Ans: Rs. 27; Rs. 39.

7. 2061 'C'

Kosi Corporation is a fast-growing supplier of office products. Analysts project the following fr cash flows during the next 3 years, after which free cash flow is expected to grow at a consta 7 percent rate. Koshi's weighted average cost of capital is 13 percent.

Time	1	2	3
Free cash flow (Rs. millions)	– Rs. 20	Rs. 30	Rs. 40

a. What is Kosi's terminal, or horizon, value?

b. What is the value of the firm today?

c. Suppose company has Rs. 100 million in debt and 10 million shares of stock. What is t price per share?

Ans: (a) Rs. 713.33 million (b) Rs. 527.926 million (c) Rs. 42

8. 2061 'F'

Gorakhakali Textiles Limited recently paid a dividend, D_0, of Rs. 1.25. The company expects have supernormal growth of 20 percent for 2 years before the dividend is expected to grow a constant rate of 5 percent. The firm's weighted average cost of capital is 10 percent.

(a) What year is the terminal, or horizon, date?
(b) What is the firm's horizon, or terminal, value per share?

Ans: (a) 2 years (b) Rs. 37.

9. 2062 'C' Q. No. 5

Banglung Ghee Industries is experiencing rapid growth, dividends are expected to grow ar 20% per year during the next three years, and 10% per indefinitely. Last year's dividend wa Rs. 20 per share. Required return on similar other companies is 15 percent. (a) At what pric you are willing to purchase the share of the company? (b) If you want to purchase the shar after 5 years, what price should you pay?

Ans: (a) Rs. 565.62 (b) Rs. 910.4

10. 2062 'F' Q. No. 5

Lamjung Mining Company's ore reserves are being depleted, so its sales are falling. Also, its p is getting deeper each year, so its costs are rising. As a result, the company's earnings an dividends are declining at the constant rate of 4% per year. If D_0 = Rs. 3 and K_s = 15%, (a What is the value of the company's stock? (b) What is the expected value at the end of th years?

Ans: (a) Rs. 15.1579 (b) Rs. 14.5

11. 2063 Q.No. 6 b]

A Computer Chips Inc. is experiencing a period or rapid growth. Earnings and dividends ar expected to grow at a rate of 15 percent during the next two years, and at a constant rate of percent thereafter. Computer's last dividend was Rs. 12, and the required rate of return on th stock of similar company is 12 percent.

a. Calculate the value of the stock today.
b. Calculate the expected stock price in year 1 and 2. [5

Ans: (a) Rs. 214.7735 (b) Rs. 226.73 and Rs. 238.0

12. 2063 Q.No. 6 BBS III Partial

XYZ Computer chips Inc. is experiencing a period of rapid growth. Earnings and dividends ar expected to grow at a rate of 16 percent during the next two years, at 10 percent in the thir year and at a constant rate of 6 percent thereafter. XYZ Computer's last dividend was Rs. 11. and the required rate of return on the stock of similar company is 12 percent.

a. Calculate the value of the stock today.
b. Calculate the expected stock price in year 1 and 2.
c. Calculate the divided yield and capital gain yield for year 1. [1(

Ans: (a) Rs. 250.41 (b) Rs. 267.12 and Rs. 283.70 (c) 5.33% and 6.67'

13. 2064 Q.No. 7 [BBS III Year]

Intel Computer Chips Inc. is experiencing a period of rapid growth. Earning and dividends ar expected to grow at a rate of 16 percent during the next two years, at 10 percent in the thir year, and at a constant rate of 6 percent thereafter Intel Computers' last dividend was Rs. 11.5 and the required rate of return on the stock of similar company is 12 percent.

a. Calculate the value of the stock today.
b. Calculate the expected stock price in year 1 and 2.
c. Calculate the dividend yield and capital gain yield. [1(

Ans: (a) Rs. 250.41 (b) Rs. 267.12 and Rs. 283.70 (c) Year 1: 5.33% and 6.67% Year 2: 5.79%; 6.21% ; Year 3: 6% and 6

14. 2065 Q.No. 6 [BBS III Old]

ABC Computer Chips Inc. is experiencing a period of rapid growth. Earnings and dividend s ar expected to grow at a rate of 16 percent during the next two years, at 10 percent in the thi year, and at a constant rate of 6 percent thereafter. ABC Computer's last dividend was R 11.5, and the required rate of return on the stock of similar company is 12 percent.

a. Calculate the value of the stock today.
b. Calculate the expected stock price in year 1 and 2.
c. Calculate the dividend yield and capital gain yield for year 1. [1

Ans: (a) Rs. 250.3807 (b) 267.0863; P_2 = 283.6667 (c) 5.33%; 6.67

15. 2066 Q.No. 9b

XYZ Company is experiencing a period of rapid growth. Earnings and dividends are expected to grow at a rate of 15 percent for next 2 years. Last year dividend f company is Rs. 12 and required rate of return on stock is 12 percent. Calculate the expected price at the end of year 2. Calculate the value of stock today and at the end of year 1. [5]

Ans: Rs. 115; Rs. 113.3929 and Rs. 115

16. 2066 Q.No. 6 BBS III (Old)

Eastern Mining Company's ore reserves are being depleted, so its sales are falling. Also, its pit is getting deeper each year, so its cost is rising. As a result, the company's earnings and dividends are at the constant rate of 6 percent per year. If D_0 = Rs. 8; and Ks = 15 percent,

a. What is the value of company's stock?
b. Assuming all the variable remain same expect Ks = 12% by what percentage the value of the common sock changes?
c. If a stock is not in equilibrium, explain how financial markets adjust to bring it into equilibrium.

Ans: (a) Rs. 94.22 (b) 141.33

8. COST OF CAPITAL

Write Short Notes on

1. 2056 'F'

Marginal cost of capital.

2. 2060 'F'/ 2064 Q.No. 10 b

Cost of retained earnings.

Numerical Problems

3. 2056 'C'

The Morang Soap Company's next expected dividend is Rs.3.18; its growth rate is 6 percent; and the stock now sells for Rs.36. New stock can be sold to net the firm Rs.32.40 per share.

a. What is company's percentage flotation cost?
b. What is company's cost of new common stock?

Ans: (a) Rs. 10% market price of the stock (b) 15.81%

4. 2056 'F'

The Jhapa Rice Mill'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 company's after-tax weighted average cost of capital:

Assets		Liabilities & Equity	
Cash	Rs.120	Long-term debt	Rs.1,152
Accounts receivable	240	Equity	1,728
Inventories	360		
Plant and equipment, net	2,160		
Total assets	**Rs.2,880**	**Total liabilities and equity**	**Rs.2,880**

Ans: WACC = 12.72%

5. 2057 'C'

Bheri Industries plans to issue some Rs.100 par preferred stock with an 11 percent dividend. The stock is selling on the market for Rs.97.00, and the company must pay flotation costs of 5 percent of the market price. What is the cost of the preferred stock?

$C = D_P / V(1-0.05)$

Ans: 11.94%

6. 2057 'F'

Pokhara Noodle's stock is currently selling for Rs.60 a share. The firm is expected to earn Rs.5.40 per share and to pay a year-end dividend of Rs.3.60.

a. If investors require a 9 percent return, what rate of growth must be expected for the firm?
b. If the firm reinvests retained earnings in projects whose average return is equal to the stock's expected rate of return, what will be next year's earnings per share?

$R.R = \frac{EPS - DPS}{EPS} = 0.33$ $N.Yf = EPS_0(1+g)$

$g = bre$

Ans: (a) 3% (b) Rs. 5.562

7. 2058 'C'

J and Sons' common stock is currently trading at Rs. 30 a share. The stock is expected to pay a dividend of Rs. 3 a share at the end of the year (D_1= Rs. 3), and the dividend is expected to grow at a constant rate of 5 percent a year. If the company were to issue external equity, it would incur a 10 percent floatation cost. What are the costs of internal and external equity? Why must a cost be assigned to internal equity when it is not raised from the market?

Ext. equity = $D/P_0(1-F)$

Ans: 15%; 16.11%

8. 2058 'F'

Seti Sugar Company was recently formed to manufacture a new product. The company has the following capital structure:

13% Debentures of 2005	Rs.6 million
12%Preferred stock	2 million
Common stock (320,000 shares)	8 million

The common stock sells for Rs. 25 a share, and the company has a marginal tax rate of 40 percent. A study of publicly held companies in this line of business suggest that the required return on equity is about 17 percent for a company of this sort. Compute the firm's weighted average cost of capital. Is it an appropriate acceptance criterion for evaluating investment proposals?

Ans: WACC = 12.925%

9. 2059 'C'

Kailali Shoe Enterprises is financed by two sources of funds: bonds and common stock. The capital structure consists of Rs.3 million worth of bonds and Rs.7 million worth of stock. The bonds have a 14 percent yield to maturity, and the stock is expected to pay Rs.500,000 in dividends this year. The growth rate of dividends has been 11 percent and is expected to continue at the same rate. Find the cost of capital if the corporation tax rate on income is 40 percent.

Ans: WACC = 15.218%

10. 2059 'F'

The Narayani Super Stores was recently formed to manufacture a new product. It has the following capital structure in market value terms:

Debentures	Rs.6 million
Preferred stock	2 million
Common stock (320,000 shares)	8 million
Total	**Rs. 16 million**

The firm has a marginal tax of 40 percent. A study of publicly held firms in this line of business suggests that the required return on equity is about 17 percent. The firm's debt is currently yielding 13 percent, and its preferred stock is yielding 12 percent. Compute the firm's present weighted average cost of capital, and explain its significance.

Ans: WACC = 12.925%

11. 2060 'C'

On January 1, 20X1, International Copy Machines (ICOM), one of the favorites of the stock market, was priced at Rs.300 per share. This price was based on an expected dividend at the end of the year of Rs.3 per share and an expected annual growth rate in dividends of 20 percent into the future. By January 20X2, economic indicators have turned down, and investors have revised their estimate for future dividend growth of ICOM downward to 15 percent. What should be the price of the firm's common stock in January 20X2? Assume the following:

a) A constant dividend growth valuation model is a reasonable representation of the way the market values ICOM.
b) The firm does not change the risk complexion of its assets nor its financial leverage.
c) The expected dividend at the end of 20X2 is Rs.3.45 per share.

Ans: Rs. 57.5

12. 2060 'F'

PP Corporation has a target capital structure of 40 percent debt and 60 percent common equity. The company's before tax cost of debt is 12 percent and its marginal tax rate is 40

percent. The current stock price is P_0 = Rs. 22.50; the last dividend was D_0 = Rs. 2.00; and the dividend is expected to grow at a constant rate of 7 percent. What will be the firm's cost of common equity and its WACC? What will happen to WACC if PP Corporation needs to spend flotation cost on the issue of common stock? Explain.

Ans: WACC = 12.79%

3. 2061 'C'

Pashupati Electric Company (PEC) uses only debt and equity. It can borrow unlimited amounts at an interest rate of 10 percent as long as it finances at its target capital structure, which calls for 45 percent debt and 55 percent common equity. Its last dividend was Rs. 2, its expected constant growth rate is 4 percent, and its stock sells at a price of Rs. 20. PEC's tax rate is 40 percent. Two projects are available: Project A has a rate of return of 13 percent, while Project B has a rate of return of 10 percent. All of the company's potential projects are equally risky and as risky as the firm's other assets.

a. What is PEC's cost of common equity?
b. What is PEC's weighted average cost of capital?
c. Which projects should PEC select?

Ans: (a) 14.4% (b) 10.62% (c) Project A

4. 2061 'F'

Himalayan Cement Factory has a capital structure that consists solely of debt and common equity. The company can issue debt at 11 percent. Its stock currently pays a Rs. 2 dividend per share (D_0 = Rs. 2), and the stock's price is currently Rs. 24.75. The company's dividend is expected to grow at a constant rate of 7 percent per year; its tax rate is 35 percent; and the company estimates that its weighted average cost of capital is 13.95 percent. What percentage of the company's capital structure consists of debt financing?

Ans: 20%

5. 2062 'C' Q. No. 4

The Shakha Torsteeel Company has two divisions: Iron rod and metal sheets. Each division employs debt equal to 30 percent and preferred stock equal to 10 percent of its total requirements, with equity capital used for the remainder. The current borrowing rate is 15 percent, and the company's tax rate is 40 percent. Presently, preferred stock can be sold yielding 13 percent.

The company wishes to establish a minimum return standard for each division based on the risk of that division. This standard then would serve as the transfer price of capital to the decision. If the cost of equity of iron rod divisions is 15.6 percent and that of metal sheet divisions is 20.6 percent, what weighted average required returns on investment would you recommend for these two divisions?

Ans: 13.36% and 16.36%

6. 2062 'F' Q. No. 3

The Small Tool Company was recently formed to manufacture a new product. The company has the following capital structure in the beginning of the year 2004.

13% Debenture of 2008	Rs. 6 million
8% Preference stock	Rs. 2 million
Common stock 80000 shares of Rs. 100	Rs. 8 million
	Rs. 16 million

The common stock sells for Rs. 200 a share on this date. Last Year Company paid dividend of Rs. 20 per share and expected to grow at the rate of 10 percent. The company has a marginal tax rate of 40 percent.

a. Compute the firm's weighted average cost of capital.
b. Is the figure computed in (a) an appropriate acceptance criteria for evaluating new investment proposal?

Ans: (a) 14.425% (b) Yes

7. 2062 Q.No.9

Heavy Man, Products stock is currently selling for Rs. 60 a share. The firm is expected to earn Rs. 5.40 per share this year to pay a year-end dividend of Rs. 3.60.

a. If investors require a 9 percent return, what rate of growth must be expected for Heavy Man?

b. If Heavy Man reinvests retained earnings in projects whose average return is equal to the stock's expected rate of return, what will be next year's EPS?

Ans: (a) 3% (b) Rs. 5.562

18. 2063 Q.No. 7

The following tabulation gives earnings per share figures for the K and K Company during the preceding 5 years. The firm's common stock, 6 million shares outstanding, is now (1/1/2004) selling for Rs. 70 per share, and the expected dividend at the end of the current year 2004 is 60 percent of the 2003 EPS. Because investors expect past trend to continue, g may be based on the earnings growth rate.

Year	2003	2002	2001	2000	1999
EPS	7.8	7.22	6.68	6.19	5.73

Current interest rate on new debt is 10 percent. The firm's marginal tax rate is 30 percent. 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**

Calculate:

a. Company's after tax cost of new debt and of common equity, assuming that new equity comes only from retained earnings.

b. Company's weighted average cost of capital, again assuming that present capital structure is maintained. [10]

Ans: (a) k_{dT} = 7%; k_e = 14.71% (b) WACC = 10.626%

19. 2063 Q.No. 5 BBS III Old

On January 1, 2003, the total assets of the Strong Company were Rs. 270 million. The firms' present capital structure, which follows is considered to be optimal. Assume that there is no short-term debt.

Long-term debt	Rs. 135 million
Common equity	Rs. 135 million
Total liabilities	**Rs. 270 million**

New bond will have a 8 percent coupon, rate and will be sold at par. Common stockholder's required rate of return is estimated to be 15 percent. Company paid last year a dividend of Rs. 60 a share and expected to grow at a rate of 5 percent indefinitely.

Currently the stock can be sold to net Rs. 560. Retained earning was Rs. 35 million last year. Dividend payout ratio expected to be zero this year. The marginal tax rates is 40 percent assuming that all assets expansion this year including additional working capital required is included in the capital budget, the rupee amount of capital budget, ignoring depreciation, is Rs. 135 million. Calculate weighted average cost of capital of the company after expansion.

Ans: 10.525%

20. 2063 Q.No. 5 BBS III Partial

Total assets of the X Company were Rs. 405 million for the year ended 2002. The Co. has no short-term credit. The present capital structure of the Co. assumed to be optimal, is given below:

Long-term debt	Rs. 243 million
Common equity	Rs. 162 million
Total liabilities and equity	**Rs. 405 million**

New bond will have a 10 percent coupon rate and will be sold at par. Common Stockholders' required rate of return is estimated to be 20 percent. Company paid last year a dividend of Rs. 60 a share and expected to grow at a rate of 6 percent indefinitely.

Currently the stock can be sold to net Rs. 580. Retained earnings was Rs. 35 million last year. Dividend payout ratio expected to be zero this year. The marginal tax rates is 30 percent assuming that the assets expansion this year including additional working capital required is