PRACTICAL PROBLEMS

Problem 1

Distant Company has current assets of Rs 400,000 and current liabilities of Rs 200,000.

a. What is the current ratio?

b. Suppose the company pays Rs 40,000 out of cash to its creditors, what happens to the current ratio?

c. Suppose the company buys inventory costing Rs 40,000 on credit, what happens to the current ratio?

d. Suppose the company sells inventory costing Rs 40,000 at a profit of 25%, what happens to the current ratio?

Ans: a. 2, b. 2.25, c. 1.833, d. 2.05

$$400,000 - 40,000 + 50,000$$

Problem 2

Janakpur Company has net working capital of Rs 1,50,000, current liabilities of Rs 50,000 and inventories of Rs 175,000.

a. What is the current ratio?

b. The financial manager of the company is facing a hard problem. From the financial analysis it is found that the current ratio of the company is very high, but the company is still unable to pay its accounts payable? What is the cause of this problem?

Ans: a. 4, b. Low quick ratio due to the excessive inventories.

Problem 3

Nepal Silver Company has current assets of Rs 20,00,000 and current liabilities of Rs 8,00,000. The company's current assets include inventories Rs 4,00,000.

a. Calculate the company's current ratio and quick ratio.

b. The company wants to maintain its current ratio to 2:1 by purchasing additional inventories on credit. Calculate the amount of additional inventories to be purchased on credit.

c. Calculate the company's current ratio and quick ratio after the purchase of inventories.

Ans: a. CR = 2.5, QR = 2; b. Rs 400,000, c. CR = 2, QR = 1.33

Problem 4

The standard for current ratio is 2:1 however, the average current ratio of Nepalese commercial banks is 5:1. Seti Merchantile Bank has current assets and currents obligations of Rs 26,00,000 and Rs 12,50,000 respectively.

a. Calculate the bank's current ratio.

b. Is the liquidity position of the bank is satisfactory?

Ans: a. 2.08, b. No. The ratio is very lower than the industry average.

PRACTICAL PROBLEMS

Problem 1

_____ Company has current assets of Rs 400,000 and current liabilities of Rs ____.

- What is the current ratio?
- Suppose the company pays Rs 40,000 out of cash to its creditors, what happens to the current ratio?
- Suppose the company buys inventory costing Rs 40,000 on credit, what happens to the current ratio?
- Suppose the company sells inventory costing Rs 40,000 at a profit of 25%, what happens to the current ratio?

Ans: a. 2 b. 2.25 c. 1.833, d. 2.05

400,000 - 40,000 + 50,00

Problem 2

_____ Company has net working capital of Rs 1,50,000, current liabilities Rs 50,000 and inventories of Rs 175,000.

- What is the current ratio?
- The financial manager of the company is facing a hard problem. From the financial analysis it is found that the current ratio of the company is very high, but the company is still unable to pay its accounts payable? What is the cause of this problem?

Ans: a. 4. b. Low quick ratio due to the excessive inventories.

Problem 3

_____ Silver Company has current assets of Rs 20,00,000 and current liabilities Rs 8,00,000. The company's current assets include inventories Rs 4,00,000.

- Calculate the company's current ratio and quick ratio.
- The company wants to maintain its current ratio to 2:1 by purchasing additional inventories on credit. Calculate the amount of additional inventories to be purchased on credit.
- Calculate the company's current ratio and quick ratio after the purchase of inventories.

Ans: a. CR = 2.5, QR = 2; b. Rs 400,000; c. CR = 2, QR = 1.33

Problem 4

The standard for current ratio is 2:1 howeber, the average current ratio of Nepalese commercial banks is 5:1. Seti Merchantile Bank has current assets and currents obligations of Rs 26,00,000 and Rs 12,50,000 respectively.

- Calculate the bank's current ratio.
- Is the liquidity position of the bank is satisfactory?

Ans: a. 2.08, b. No. The ratio is very lower than the industry average.

Problem 5

You are the bank manager of Lumbini Commercial Bank and for 60 days loan your new client submitted his financial statement containing the following facts:

Accounts payable	Rs 120,000 Cash	Rs 15,000
Accruals	80,000 Accounts receivable	95,000
Long term debt	200,000 Inventory	190,000

As a bank manager, would you grant or deny the loan? Why?

1.5 a. 2.08; b. Deny due to the poor liquidity as measured by the current and quick ratio.

Problem 6

Consider the following information of Biratnagar Manufacturing Company:

Current liabilities	Rs 80,000 Current assets	Rs 200,000
Long term debt	120,000 Fixed assets, net	400,000
Sharehlder's equity	400,000 Total assets	600,000

a. Calculate the company's debt ratio.
b. Calculate the company's debt to equity ratio.
c. Calculate the company's equity multiplier.
a. 33.33%, b. 30%, c. 1.5 times

Problem 7

Consider the following information of a company:

Annual sales	Rs 360,000· Accouts Receivable	
Inventory	Rs 72,000 Fixed assets	Rs 60,000
Cash	Rs 100,000 Days in year	Rs 200,000
		360

a. Calculate inventory turnver ratio. What does it measure?
b. Calculate Days Sales Oustanding. What does it measure?
c. Calculate total assets turnver ratio. What does it measure?
a. 5 times, b. 60 days, c. 0.833 times

Problem 8

Consider the following incone statement and other data of a com-

Sales
Less: Cost of goods sold
Gross profit
Less: Operating expenses
Earni

1. a. 2.08; b. Deny due to the poor liquidity as measured by the current and quick ratio.

Problem 6

Consider the following information of Biratnagar Manufacturing Company:

Current liabilities .... Rs 80,000   Current assets........................Rs 200,000
Long term debt 120,000   Fixed assets, net...........................400,000
Shareholder's equity 400,000   Total assets.............................600,000

a. Calculate the company's debt ratio.
b. Calculate the company's debt to equity ratio.
c. Calculate the company's equity multiplier.
   ☞ a. 33.33%, b. 30%, c. 1.5 times

Problem 7

Consider the following information of a company:

Annual sales.......................... Rs 360,000   Accouts Receivable .... Rs 60,000
Inventory............................. Rs 72,000   Fixed assets............................Rs 200,000
Cash .... Rs 100,000   Days in year.............................360

a. Calculate inventory turnver ratio. What does it measure?
b. Calculate Days Sales Oustanding. What does it measure?
c. Calculate total assets turnver ratio. What does it measure?
   ☞ a. 5 times, b. 60 days, c. 0.833 times

Problem 8

Consider the following incone statement and other data of a company:

Sales	
Less: Cost of goods sold...	Rs 200,000
Gross profit	80,000
Less: Operating expenses...	120,000
Earning before interest and tax......................................	40,000
Less: Interest...	80,000
Earning before tax	20,000
Less: 50% Tax..	60,000
Net income or earning after tax......................................	30,000
Less: Divident paid to common stockholders	30,000
Increase in retained earning...	12,000
Number of common stocks	18,000
Shareholder's equity	5,000
Price earniing ratio...	Rs 150,000
	8 times

Calculate:
a. Gross margin.
b. Net profit margin.
c. Return on equity (ROE)
d. Earning Per Share (EPS)

ividend Per Share (DPS)   f.   Dividend Payout Ratio
Market price per share (MPS)   h.   Earning yield
ividend yield   j.   Times interest earned (TIE) ratio

a. 80%, b. 15%, c. 20%, d. Rs 6, e. Rs 2.40, f. 40%, g. Rs 48, h. 12.5%, i. 5% j. 4 times

Problem 9

Cord Company has the following balance sheet and income statement for 2007:

Balance Sheet of Cord Company

Accounts payable	...Rs 320	Cash	.....Rs	400
Accruals	260	Accounts receivable		1,300
Short-term loans	...1,100	Inventories		2,100
Current liabilities	...1,680	Current assets		3,800
Long-term debt	...2,000	Net fixed assets		3,320
Net worth Share equity	3,440			
Total liabilities & net worth	...7,120	Total assets		7,120

Income Statement of Cord Company

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

B

Notes:

(i)   Current period's depreciation is Rs 480
(ii) Ending inventory for 2006 was Rs 1,800

On the bases of this information, compute

(a) the current ratio,   (b)   the acid–test ratio,
(c) the average collection period   (d)   the inventory turnover ratio,
(e) the debt–to–net–worth ratio,   (f)   the net profit margin,
(g) the gross profit margin,   (h)   the return on equity.
(i) the long-term debt-to-total-capitalization ratio,

Adopted from Van Horne and Wachowicz 6.2

a. = 2.26, b. = 1.01, c. 36.9 days, d. = 4.6, e. = 1.07, f. = 5.3%, g. = 29.6%,
h. 19.5%, i. = 0.37

Income Statement of Camp Company
For Year Ended December 31, 2007

Sales	Rs 1,607.5
Cost of goods sold	(1,353.00)
Gross Profit	Rs 254.5
Fixed operating expenses except depreciation	(143.00)
Depreciation	(41.50)
Earning before interest and taxes	Rs 70.00
Interest expense	(24.50)
Net income before taxes	Rs 45.50
Taxes (40%)	(18.20)
Net income	Rs 27.30

Ratios	Camp	Industry Average
Current ratio	___	2.0
Days sales outstanding	___	35 days
Inventory turnover	___	5.6
Total assets turnover	___	3
Profit margin on sales	___	1.2%
Return on assets	___	3.6%
Return on equity	___	9%
Debt ratio	___	60.0%

a. Calculate the indicated ratios for Camp Company.
b. Construct the Du Pont equation for both Camp and the industry.
c. Outline Camp's strengths and weaknesses as revealed by your analysis.

▲ a. CR = 1.98, DSO = 75 days, IT = 5.6 times, TAT = 1.7 times, PM = 1.7, ROA = 2.9%
ROE = 7.6%, Debt ratio = 61.9%; b. ROE for industry = 9 %   Adopted from Weston and Brigham 132

Problem 11

Using the following information, complete the balance sheet.

Long-term debt equity	0.5 to 1	Total asset turnover	2.5 times
Average collection period*	18 days	Inventory turnover	9 times
Gross profit margin	10%	Acid-test ratio	1 to 1

* Assume a 360 – day year and all sales on credit

Cash			
Accounts receivable	Rs ___	Notes and payables	
Inventory		Long-term debt	Rs 100,000
Plant and equipment		Common stock	
Total assets	Rs ___	Retained earnings	Rs 100,000
		Total liabilities &	Rs 100,000
		shareholders' equity	Rs ___

▲ LTD = Rs 100,000; TAs = Rs 400,000; Sales = Rs 1,000,000; Inventory = Rs 100,000;   Adopted from Van Home and Wachowcz SC-4
Receivables = Rs 50,000; Cash = Rs 50,000; Plant and equipment = Rs 200,000

Problem 12

Complete the balance sheet and sales information in the table that follows for
Isberg Industries using the following financial data:

Debt ratio ___
Quick ratio ___
Total assets turnover ___
Days sales outstanding ___

Gross profit margin on sales (Sales - Cost of goods sold) / Sales 25%
Inventory turnover ratio .... 5 times

Balance sheet

Cash ....
Account receivable ....
Inventories ....
Fixed assets ....
Total assets ....
Sales ....

Accounts payable ....
Long term debt ....   Rs   60,000
Common stock ....
Retained earnings ....   Rs   97,500
Rs 300,000 Total liabilities & equity ...   ,
Cost of goods sold ....

Adopted from Weston and Brigham 13.3

> Total liabilities & equity = Rs 300,000, Accounts payable = Rs 90,000, Sales = Rs 450,000 Receivable = Rs 45,000, Cost of goods sold = Rs 337,500, Inventory = Rs 67,500 Cash = Rs 27,000

Problem 13

Assume you are given the following relationships for The Zumwalt Corporation:

Sales/total assets .... 1.5 x
Return on assets (ROA) 3%
Return on equity (ROE) 5%

Calculate Zumwalt 's profit margin and debt ratio.

Adopted from Weston and Brigham 13.6

> Profit margin = 2 %, Debt ratio = 40%

Problem 14

The H 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 H 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 H Company has raised the maximum amount of short-term funds?

Adopted from Weston and Brigham 13.7

> Short-term debt = Rs 262,500; New quick ratio = 1.19 times

Problem 15

The Bailey Company had a quick ratio of 1.4, a current ratio of 3.0, a inventory turnover of 5 times, total current assets of Rs 810,000, and cash an marketable securities of Rs 120,000 in 1995. If the cost of good sold equaled 8 percent of sales, what were Bailey's annual sales and its DSO for 1995?

Weston and Brigham 1

Problem 17

Coastal's ROE last year was only 3 percent, but its management developed a new operating plan designed to improve things. The new calls for a total debt ratio of 60 percent, which will result in the in charges of Rs 300 per year. Management projects and EBIT of Rs 1,000 on of Rs 10,000 and it expects to have a total assets turnover ratio of 2.0. these conditions, the average tax rate will be 30 percent. If the change made, what return on equity will Coastal earn? What is the ROA?

Adopted from Weston and Brigham

    New ROE = 24.5%; ROA = 9.8%

Problem 18

Earth's Best Company has sales of Rs 200,000, a net income of Rs 15,000, 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	Rs 300,000	Total liabilities and equity	Rs 300,000

a. The company's new owner thinks that inventories are excessive and can be lowered to the point where the current ratio is equal to the industry average, 2.5 x. 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, the funds generated are used to reduce common equity (stock can be repurchased at book value), and if no other changes occur, by how much will the ROE change?

b. Now suppose we wanted to take this problem and modify it for use on an exam, that is, to create a new problem which you have not seen to test your knowledge of this type of problem. How would your answer change if (1) We doubled all the dollar amounts? (2) We stated that the target current ratio was 3.0X? (3) We said that the company had 10,000 shares of stock outstanding, and we asked how much the change in part a would increase EPS ? (4) What would your answer to (3) be if we changed the original problem to state that the stock was selling for twice book value, so common equity would not be reduced on a dollar-for-dollar basis?

Adopted from Weston and Brigham 13.11

    a. ROE will increase by 5.54%. b. 1. ROE will increase same by 5.54 %; 2. ROE would increase by only 3.21%. 3. The change in part (a) would increase EPS by Rs 1.11. 4. 0.40

Problem 19

K. Billing Co. 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. Billing has no preferred stock, and no new common stock was issued during the year. If Billing's year-end debt (which equals its total liabilities) was Rs 120 million, what w company's year-end debt/assets ratio?

Adopted from Wes

    Debt / assets ratio = 33.3%

Problem 72
(Effective rates of return)

Assume that AT & T's pension fund managers are considering two alternative securities as investments: (1) Security Z (for zero intermediate year cash flows), which costs Rs.422.41 today, pays nothing, during its 10-year life, and then pays Rs.1,000 after 10 years or (2) Security B, which has a cost today of Rs.500 and pays Rs.74.50 at the end of each of the next 10 years.

a. What is the rate of return on each security?

b. Assume that the interest rate AT & T's pension fund managers can earn on the fund's money falls to 6 percent immediately after the securities are purchased and is expected to remain at that level for the next 10 years. What would the price of each security change to, what would be the fund's profit on each security, and what would be the percentage profit (profit divided cost) for each security?

c. Assuming that the cash flows for each security had to be reinvested at the new 6 percent market interest rate, (1) what would be the value attributable to each security at the end of 10 years and (2) what "actual, after-the-fact" rate of return would the fund have earned on each security?

d. Now assume all the facts as given in Parts b and c except assume that the interest rate rose to 12 percent rather than fell to 6 percent. What would happen to the profit figures as developed in Part b and to the "actual" rates of return as determined in Part c? Explain your results.

Problem 73
(Reaching a financial goal)

Ena and Mina have both been given Rs. 30,000 by their grandparents today on their 25th birthdays. They want to save for their future and have aspirations of one day being millionaires. Each woman plans to make annual contributions on her birthday, beginning next year. Ena and Mina have each opened investment accounts at the First National Bank and Second National Bank, respectively, and they expect to earn nominal returns of 8 and 9 percent, respectively. Ena has already decided to deposit Rs. 5,000 each year into her investment account, while Mina is unsure of the amount she will deposit annually.

a. How long will it take Ena before she reaches her investment goal of Rs. 1 million?

b. If Mina decides to make the same annual contributions as Ena, how much sooner would she reach the investment goal?

c. Suppose Mina was interested in reaching the investment goal at the same time as Ena. What is the minimum monthly contribution she could make in order to reach Rs. 1 million at the same time as Ena?

PRACTICAL PROBLEMS

Problem 1

Consider the following information:

Accounts payable...................... Rs 100   Marketable securities............................50
Accounts receivable.........................400   Notes payable...................................50
Accrued wages.................................100   Other accruals..................................50
Accumulated depreciation.................800   Paid in capital.................................300
Cash...100   Preferred stock...............................100
Common stock (Rs 1par)..................200   Retained earning.............................700
Deferred taxes................................150   Treasury stock.................................100
Gross property and plant..............2,000   Inventories.......................................400
Long term debt...............................500   ৬ ৫২১৬৳ (ন৳৳)

Required: Balance sheet

Adopted from Weston and Copeland 2.1

Total assets = Rs. 2,150

Problem 2

Papa Roach Exterminators, Inc., has sales of Rs. 432,000, costs of Rs. 210,000, depreciation expense of Rs. 25,000, interest expenses of Rs. 8,000 and a tax rate of 35 percent.

i. What is the net income for this firm?

ii. Suppose the firm paid out Rs. 65,000in cash dividends, what is the addition to retained earnings?

iii. Suppose the firm had 30,000 shares of common stock outstanding, what are the earnings per share, or EPS, figure? What is the dividend per share figure?

Net income Rs 122,850; EPS Rs 4.10 and DPS Rs 2.17   Adopted from Ross, Westerfield and Jordon 2.2

Problem 3

Consider the following information:

Sales	Rs 450,000	Cost of goods sold	2,30,000
Office expenses	50,000	Selling expenses	25,000
Depreciation	15,000	Interest	10,000
Tax rate	40 %	Number of common stocks	12,000

Required: (i) Income statement   (ii) Earning per share

☞ Net income Rs 72,000 and EPS Rs 6.00

Problem 4

Consider the following information

Sales	Rs 190,000	Material	Rs. 60,000
Labour	30,000	Heat, light, power	6,000
Indirect labour	11,000	Depreciation	12,000
Selling expenses	20,000	Interest	2,500
Office expenses	11,000	Tax rate	50 %

Required: Income statement to determine net income

☞ Net income Rs 18,750

Problem 5

Klingon Widgets purchases new cloaking machinery three years ago for Rs 5 million. The machinery can be sold to the Romulans today for Rs. 1.5million. Klingon's current balance sheet shows net fixed assets of Rs. 1,600,000, current liabilities of Rs. 1,800,000, and net working capital of Rs. 900,000. If all the current assets were liquidated today, the company would receive Rs. 2.9 million cash.

i.   What is the book value of Klingon's assets today?

ii. What is the market value?

Adopted from Ross, Westerfield and Jordon

☞ (i) Rs. 43,00,000 (ii) Rs. 44,00,000

Problem 6

Gonas, Inc., has been sales of Rs.9,750, costs of Rs. 5,740, depreciation expense of Rs. 1,000 and interest expense of Rs. 240. if the tax rate is 35 percent, what is the operating cash flow or OCF?

Adopted from Ross, Westerfield and Jordon

☞ Rs. 2,956.50

Problem 7

The December 2£, 2001 balance sheet of Venu's Tennis Shop showed current assets of Rs.1,200 and current liabilities of Rs.720. The December 31, 2002, balance sheet showed current assets of Rs.1,440 and current liabilities of Rs.525. What was the company's 2002 change in net working capital or NWC?

Adopted from Ross, Westerfield and Jordon

☞ 435

Problem 8

Consider the following information Kailai Corporation:

Notes payable	Rs 50,000	Deferred taxes	150,000
Accruals	150,000	Common stock	9,00,000
Paid in capital	300,000	Cash	800,000
Preferred stock	100,000	Acc. Depreciation	800,000

Retained earning............................500,000   Account receivables...................400,00
Account payables............................100,000   Long term debt 500,00
Inventory............................400,000   Marketable securities...................150,000
Gross plant............................18,00,000

Required: Balance sheet

   ✍ Total of balance sheet Rs 27,50,000

Problem 9

The Goldstone Company has reported the following income and expens
items for 20x3 and 20x4.

	20x3	20x4
Year		
Revenues..	Rs 40,000	45,000
Cost of sales (excl. dep.)...................................	20,000	20,000
Marketing expenses...	6,000	6,500
General administrative expense........................	1,800	1,800
Depreciation..	1,200	2,000
Interest expense...	5,000	10,000
Tax rate...	40%	34%
Accrued tax paid..	2,000	1,000

Required:

(i)   Prepare income statement for 20x3 and 20x4.

(ii)   What is Goldstone's operating cash flow for each year?

(iii)   Discuss the difference between net income and operating cash flow.

Adopted from Weston and Copeland 23

   ✍ (i) Rs. 3,600; Rs. 3,102 (ii) Rs. 10,200; Rs. 15,700   *OfC = EBIT - Tax+dep*

Problem 10

The Roark Corporation has Rs 2,000,000 in long term debt with an interest rate
of 12 %, and no other interest bearing debt . It had net revenue of Rs 4,000,000
in 19x6, and its cost of sales (excluding depreciation) was Rs 1,800,000.
Depreciation expense was Rs 135,000. Marketing and general expenses were
Rs 250,000. From investment s it had made in other companies, Roark had
income of Rs 100,000 net of expenses. Roark uses a 34 % tax rate in reports to
shareholders; its actual rate is 25 %.

(i)   What is Roark's gross income for 19x6?

(ii)   What is the net operating income?

(iii)   What are the earning before interest and tax?

(iv)   What is its net income?

(v)   What is its operating cash flow?

   ✍ (i). Rs. 22,00,000 (ii) Rs 18,15000; (iii) Rs. 19,15,000; (iv) Rs. 11,05,500; (v) Rs
     16,31,250   **17,96,250**   Adopted from Weston and Copeland 24

Problem 11

Little Books Inc. recently reported net income of Rs 3 million. Its operating
income (EBIT)was Rs 6 million, and the company pays a 40 percent tax rate.
What was the company's interest expense for the year?

   ✍ Rs 1000,000

Adopted from Brigham and Houston 2

Problem 12

Kendall Cremers Inc. recently reported net income of Rs 3.1 million. The company's depreciation expense was Rs 500,000. What is the company's approximate net cash flow? Assume the firm has no amortization expense.

Adapted from Brigham and Houston 2.2

= Rs 36,00,000

Problem 13

Kendall Company recently reported Rs 170,000 in operating income (EBIT). The company's capital consists of Rs 300,000 in long-term debt, which has a 6 percent after-tax cost and Rs 500,000 in common equity. Kendall's risk, its shareholders require a 25 percent return on their capital. The Company is in the 40 percent tax bracket. What is Kendall's EVA?

Adapted from Brigham and Houston 2.6

Rs 5,000

$EVA = EBIT(1-T) - T \text{ac } R \times T$

Problem 14

The Llaven Corporation has operating income (EBIT) of Rs 750,000. The company's depreciation expense is Rs 200,000. Klaven is 100 percent equity financed, and it faces a 40 percent tax rate. What are the company's net income, its net cash flow, and its operating cash flow?

Adapted from Brigham and Houston 2.11

a. NI Rs 450,000 NCF Rs 650,000 OCF Rs 650,000

Problem 15

Last year Rattner Robotics had Rs 5 million in operating income (EBIT). The company had a net depreciation expense of Rs 1 million and an interest expense of Rs 1 million; its corporate tax rate was 40 percent. The company has Rs 14 million in current assets and Rs 4 million in non-interest-bearing current liabilities; it has Rs 15 million in net plant and equipment. It estimates that it has an after-tax cost of capital of 10 percent. Assume that rattner's only non cash item was depreciation.

(i) What was the company's net income for the year?

(ii) What was the company's net cash flow?

(iii) What was the company's net operating profit after taxes (NOPAT)?

(iv) What was the company's operating cash flow?

(v) If operating capital in the previous year was Rs 24 million what was the company's free cash flow (FCF) for the year?

(vi) What was the company's Economic Value Added (EVA)? $= NOPAT - Tac \times K$

Adapted from Brigham and Houston ST-2

a. NI = Rs 24,00,000 b. NCF = Rs 34,00,000 c. NOPAT= Rs 30,00,000 d. OCF = Rs 40,00,000 e. FCF = Rs 20,00,000 f. EVA = Rs 500,000

Problem 16

Svoboda Corporation comparative balance sheets at December 31 (Rs in millions)

Assets	X1	X2	Liabilities	X1	X2
Cash & equivalents	5	3	Notes payable	20	0
Accounts receivable	15	22	Accounts payable	5	8
Inventories	12	15	Accrued wages	2	2
Fixed assets, net	50	55	Accrued taxes	3	5
Other assets	5	3	Long-term debt	0	15

Total _____ Rs 48

Svoboda Corporation statement of income and re...
December 31, x2 (in millions)

Net sales	Rs 25	
Expenses	5	
Cost of goods sold	5	
Selling, general, and administrative expenses	2	32
Depreciation		11
Interest		4
Net income before taxes 16.7		7
Less: Taxes		42
Net income		47
Add: Retained earnings at 12/31/x1		3
Subtotal		44
Less: Dividends		
Retained earnings at 12/31/x2		

a. Prepare a statement of cash flows for X2 using the direct method for the Svoboda Corporation.

b. Prepare flow of funds (sources and uses of funds) statement for X2 for the Svoboda Corporation using indirect method.

Adapted from Vanhorne 7.2

c. Rs 43,000,000

Problem 17

The consolidated balance sheets for the Lloyd Lumber Company at the beginning and end of 1995 follow. The company bought Rs 50 million worth of fixed assets. The charge for depreciation in 1995 was Rs 10 million. Earnings after taxes were Rs 33 million, and the company paid out Rs 5 million in dividends.

a. Fill in the amount of source or use in the appropriate column.

Lloyd Lumber Company: Balance Sheets at Beginning and End of 1995 (in millions)

	Jan 1	Dec. 31	Change Source	Use
Cash	Rs 7	Rs 15	____	____
Marketable security	Rs 6	Rs 11	____	____
Net receivable	Rs 30	Rs 22	____	____
Inventories	Rs 53	Rs 75	____	____
Total current assets	Rs 90	Rs 123	____	____
Gross fixed assets	Rs 75	Rs 125	____	____
Less Accumulated depreciation	25	35	____	____
Net fixed assets	Rs 50	Rs 90	____	____
Total assets	Rs 140	Rs 213	____	____
Accounts payable	Rs 18	Rs 15	____	____
Notes payable	3	15	____	____
Other current liabilities	Rs 15	15	____	____
Long term debt	Rs 8	Rs 7	____	____
Common stock	Rs 29	Rs 24	____	____
		Rs 37	____	____

		40	44
Common stock		40	44
Retained earnings		90	100
100 Total			
Total	90		

Svoboda Corporation statement of income and retained earnings, year ended
December 31, ×2 (in millions)

Net sales			Rs 48
Expenses :		Rs 25	
Cost of goods sold		5	
Selling, general, and administrative expenses		5	
Depreciation		2	37
Interest			11
Net income before taxes (B.T)			4
Less: Taxes			7
Net income			40
Add: Retained earnings at 12/31/×1			47
Subtotal			3
Less: Dividends			44
Retained earnings at 12/31/×2			

a. Prepare a statement of cash flows for X2 using the direct method for the Svoboda Corporation.

b. Prepare flow of funds (sources and uses of funds) statement for X2 for the Svoboda Corporation using indirect method.

Adopted from Vanhorne 7.2

Rs 43,000,000

Problem 17

The consolidated balance sheets for the Lloyd Lumber Company at the beginning and end of 1995 follow. The company bought Rs 50 million worth of fixed assets. The charge for depreciation in 1995 was Rs 10 million. Earnings after taxes were Rs 33 million, and the company paid out Rs 5 million in dividends.

a. Fill in the amount of source or use in the appropriate column.

Lloyd Lumber Company: Balance Sheets at Beginning and End of 1995
(in millions)

	Jan 1	Dec. 31	Change Source	Use
Cash	Rs 7	Rs 15		
Marketable security	Rs 0	Rs 11		
Net receivable	Rs 30	Rs 22		
Inventories	Rs 53	Rs 75		
Total current assets	Rs 90	Rs 123		
Gross fixed assets	Rs 75	Rs 125		
Less Accumulated depreciation	25	35		
Net fixed assets	Rs 50	Rs 90		
Total assets	Rs 140	Rs 213		
Accounts payable	Rs 18	Rs 15		
Notes payable	3	15		
Other current liabilities	Rs 15	15		
Long term debt	Rs 8	Rs 7		
Common stock	Rs 29	Rs 24		
		Rs 57		

	Rs 67	Rs 95
Retained earning	Rs 140	Rs 213
Total liabilities and equity		

Notes : Total sources must equal total uses

b.   Prepare a statement of cash flows.

Adopted from Weston and Brigham 3.12

a. Total Sources = Total uses = Rs 102 million; b. Net cash flow from operations = Rs 18,
Net cash flow from financing = Rs 51

Problem 18

The Nelson Electronic Corporation's (NEC) balance sheets for 1989 and 1988 (in millions) are as follows:

	1989	1988
Cash	Rs 21	Rs 45
Marketable securities	0	33
Receivables	90	66
Inventories	225	159
Total current assets	Rs 336	Rs 303
Gross fixed assets	450	225
Less accumulated depreciation	123	78
Net fixed assets	Rs 327	Rs 147
Total assets	Rs 663	Rs 450
Accounts payable	Rs 54	Rs 45
Notes payable	9	45
Accruals	45	21
Total current liabilities	Rs 108	Rs 111
Long-term debt	78	24
Common stock	192	114
Retained earnings	285	201
Total long-term capital	Rs 555	Rs 339
Total liabilities and equity	Rs 663	Rs 450

Additionally, Nelson's 1989 income statement is as follows (in millions):

Sales	Rs 1,365
Cost of goods sold	888
General expenses	300
EBIT	Rs 177
Interest	10
EBT	Rs 167
Taxes (40%)	67
Net income	Rs 100

Construct Nelson's 1989 statement of cash flows.

Adopted from Weston and Brigham 3.13

Cash flows from operations = Rs 88 million, Cash flow associated with long-term Investments = (Rs 225) million, Cash flow from financing = Rs 80 million.

192
114
×78.

132
387

Problem 68
(effective annual rates)

Bank A pays 8 percent interest, compounded quarterly, on its money market account. The managers of Bank B want its money market account to equal Bank A's effective annual rate, but interest is to be compounded on a monthly basis. What simple, or quoted, rate must Bank B set?

Problem 69
(effective versus nominal interest rates)

The First City Bank pays 7 percent interest, compounded annually, on time deposits. The Second City Bank pays 6.5 percent interest, compounded quarterly.

a. Based on effective interest rates, in which bank would you prefer to deposit your money?

b. Could your choice of banks be influenced by the fact that you might want to withdraw your funds during the year as opposed to at the end of the year? In answering this question, assume that funds must be left on deposit during the entire compounding period in order for you to receive any interest.

Problem 70
(effective rate of return)

Manisha Shakya invested Rs.150,000 eighteen (18) months ago. Currently, the investment is worth Rs.168,925. Manisha knows the investment has paid interest every three (3) months (that is, quarterly), but she doesn't know what the yield on her investment is. Help Manisha, compute both the annual percentage rate (APR) and the effective annual rate of interest.

Problem 71
(Time value of money)

Assume that it is now January 1, 1996, and you will need Rs.1,000 on January 1, 2000. Your bank compounds interest at an 8 percent annual rate.

a. How much must you deposit on January 1, 1997, to have a balance of Rs.1,000 on January 1, 2000?

b. If you want to make equal payments on each January 1 from 1997 through 2000 to accumulate the Rs.1,000, how large must each of the 4 payments be?

c. If your father offered either to make the payments calculated in Part b (Rs.221.92) or to give you a lump sum of Rs.750 on January 1, 1997, which would you choose?

d. If you have only Rs.750 on January 1, 1997, what interest rate, compounded annually, would you have to earn to have the necessary Rs.1,000 on January 1, 2000?

e. Suppose you can deposit only Rs.186.29 each January 1 from 1997 through 2000, but you still need Rs.1,000 on January 1, 2000. What interest rate, with annual compounding, must you seek out to achieve your goal?

f. To help you reach your Rs.1,000 goal, your mother offers to give you Rs.400 on January 1, 1997. You will get a part-time job and make 6 additional payments of equal amounts each 6 months thereafter. If all this money is deposited in a bank that pays 8 percent, compounded semiannually, how large must each of the 6 payments be?

g. What is the effective annual rate being paid by the bank in Part f?

h. Reinvestment rate risk was defined as being the risk that maturing securities (and coupon payments on bonds) will have to be reinvested at a lower rate of interest than they were previously earning. Is there a reinvestment rate risk involved in the preceding analysis? If so, how might this risk be eliminated?

5.50   Chapter-5

Problem 60   Your company is planning to borrow Rs.1,000,000 on a 5-year, 15 percent, annual
(Loan amortization) payment, fully amortized term loan. What fraction of the payment made at the end of
the second year will represent repayment of principal?

Problem 61   The Jackson family is interested in buying a home. The family is applying for a Rs.
(Loan amortization) 125,000, 30-year mortgage. Under the terms of the mortgage, they will receive Rs.
125,000 today to help purchase their home. The loan will be fully amortized over the
next 30 years. Current mortgage rates are 8 percent. Interest is compounded monthly
and all payments are due at the end of the month.

a. What is the monthly mortgage payment?

b What portion of the mortgage payments made during the first year will go toward
interest?

Problem 62   You take out a 30-year Rs. 100,000 mortgage loan with an APR of 6 percent and monthly
(Amortizinag loan) payments. In 12 years you decide to sell your house and pay off the mortgage. What is
the principal balance on the loan?

Problem 63   You borrow Rs.10,000 at 14 percent compound annual interest for four years. The loan is
(Amortizinag loan) repayable in four equal annual installments payable at the end of each year.

a. What is the annual payment that will completely amortize the loan over four years?

b. Of each equal payment, what is the amount of interest? The amount of loan
principal?

Problem 64   Lina recently obtained a 10-year, Rs. 50,000 loan. The loan carries an 8 percent
(Amortizinag loan) compound annual interest rate and calls for annual installment payments of Rs. 7,451.47
at the end of each of the next 10 years.

a How much (in rupees) of the firm year's payment is principal?

b. How much total interest will be paid over the life of the loan? (Hint: You do not need
to construct a loan amortization table to answer this question. Some simple math is
all you need.)

Problem 65   An investment pays you 10 percent interest, compounded semiannually. What is the
(Interest rates)   periodic rate of interest? What is the nominal rate of interest? What is the effective rate of
interest?

Problem 66   Niru Sharma, manager of Nepal Lever Limited, wants to sell on credit, giving customers
(Simple rate of   3 months in which to pay. However, Niru will have to borrow from her bank to carry the
return)   accounts payable. The bank will charge a simple 15 percent, but with monthly
compounding. Niru wants to quote a simple rate to her customers (all of whom are
expected to pay on time) which will exactly cover her financing costs. What simple
annual rate should she quote to her credit customers?

Problem 67   Suppose that an investment promises to pay a nominal 9.6 percent annual rate of
(Effective interest interest. What is the effective annual interest rate on this investment assuming that
rate)   interest is compounded (a) Annually? (b) Semiannually? (c) Quarterly? (d) Monthly? (e)
Daily (365 days)? (f) Continuously?

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(effective annual rates)
Bank A pays 8 percent interest, compounded quarterly, on its money market account. The managers of Bank B want its money market account to equal Bank A's effective annual rate, but interest is to be compounded on a monthly basis. What simple, or quoted, rate must Bank B set?

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b. Could your choice of banks be influenced by the fact that you might want to withdraw your funds during the year as opposed to at the end of the year? In answering this question, assume that funds must be left on deposit during the entire compounding period in order for you to receive any interest.

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Manisha Shakya invested Rs.150,000 eighteen (18) months ago. Currently, the investment is worth Rs.168,925. Manisha knows the investment has paid interest every three (3) months (that is, quarterly), but she doesn't know what the yield on her investment is. Help Manisha, compute both the annual percentage rate (APR) and the effective annual rate of interest.

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(Time value of money)
Assume that it is now January 1, 1996, and you will need Rs.1,000 on January 1, 2000. Your bank compounds interest at an 8 percent annual rate.

a. How much must you deposit on January 1, 1997, to have a balance of Rs.1,000 on January 1, 2000?

b. If you want to make equal payments on each January 1 from 1997 through 2000 to accumulate the Rs.1,000, how large must each of the 4 payments be?

c. If your father offered either to make the payments calculated in Part b (Rs.221.92) or to give you a lump sum of Rs.750 on January 1, 1997, which would you choose?

d. If you have only Rs.750 on January 1, 1997, what interest rate, compounded annually, would you have to earn to have the necessary Rs.1,000 on January 1, 2000?

e. Suppose you can deposit only Rs.186.29 each January 1 from 1997 through 2000, but you still need Rs.1,000 on January 1, 2000. What interest rate, with annual compounding, must you seek out to achieve your goal?

f. To help you reach your Rs.1,000 goal, your mother offers to give you Rs.400 on January 1, 1997. You will get a part-time job and make 6 additional payments of equal amounts each 6 months thereafter. If all this money is deposited in a bank that pays 8 percent, compounded semiannually, how large must each of the 6 payments be?

g. What is the effective annual rate being paid by the bank in Part f ?

h. Reinvestment rate risk was defined as being the risk that maturing securities (and coupon payments on bonds) will have to be reinvested at a lower rate of interest than they were previously earning. Is there a reinvestment rate risk involved in the preceding analysis? If so, how might this risk be eliminated?

Problem 72   Assume that AT & T's pension fund managers are considering two alternative securities
(Effective rates of   as investments: (1) Security Z (for zero intermediate year cash flows), which costs
return)   Rs.422.41 today, pays nothing, during its 10-year life, and then pays Rs.1,000 after 10
years or (2) Security B, which has a cost today of Rs.500 and pays Rs.74.50 at the end of
each of the next 10 years.

a. What is the rate of return on each security?

b. Assume that the interest rate AT & T's pension fund managers can earn on the fund's
money falls to 6 percent immediately after the securities are purchased and is
expected to remain at that level for the next 10 years. What would the price of each
security change to, what would be the fund's profit on each security, and what
would be the percentage profit (profit divided cost) for each security?

c. Assuming that the cash flows for each security had to be reinvested at the new 6
percent market interest rate, (1) what would be the value attributable to each security
at the end of 10 years and (2) what "actual, after-the-fact" rate of return would the
fund have earned on each security?

d. Now assume all the facts as given in Parts b and c except assume that the interest rate
rose to 12 percent rather than fell to 6 percent. What would happen to the profit
figures as developed in Part b and to the "actual" rates of return as determined in
Part c? Explain your results.

Problem 73   Ena and Mina have both been given Rs. 30,000 by their grandparents today on their 25th
(Reaching a financial   birthdays. They want to save for their future and have aspirations of one day being
goal)   millionaires. Each woman plans to make annual contributions on her birthday,
beginning next year. Ena and Mina have each opened investment accounts at the First
National Bank and Second National Bank, respectively, and they expect to earn nominal
returns of 8 and 9 percent, respectively. Ena has already decided to deposit Rs. 5,000
each year into her investment account, while Mina is unsure of the amount she will
deposit annually.

a. How long will it take Ena before she reaches her investment goal of Rs. 1 million?

b. If Mina decides to make the same annual contributions as Ena, how much sooner
would she reach the investment goal?

c. Suppose Mina was interested in reaching the investment goal at the same time as
Ena. What is the minimum monthly contribution she could make in order to reach
Rs. 1 million at the same time as Ena?

Problem 46
(Required lump sum payment!)

To comp... need Rs.10,000 per year for 4 years, ... the first Rs.10,000 one year from today). Your rich uncle offers to put you th school, and he will deposit in a bank paying 7 percent interest a sum of money sufficient to provide the four payments of Rs.10,000 each. His deposit will be today.

a. How large must the deposit be?
b. How much will be in the account immediately after you make the first withdra After the last withdrawal?

Problem 47
(Repaying a loan)

Rama wants to buy car that costs Rs.12,000. She has arranged to borrow the purchase price of the car from her credit union at a simple interest rate equal t percent. The loan requires quarterly payments for a period of three (3) years. If the payment is due three months (one quarter) after purchasing the car, what will be amount of Rama's quarterly payments on the loan?

Problem 48
(Present value of perpetuity)

What is the present value of a perpetuity of Rs.100 per year if the appropriate discou rate is 7 percent? If interest rates in general were to double and the appropriate discou rate rose to 14 percent, what would happen to the present value of the perpetuity?

Problem 49
(Perpetuities)

A property will provide Rs.10,000 a year forever. If its value is Rs. 125,000, what must b the discount rate?

Problem 50
(Perpetuities)

A local bank advertises the following deal: "Pay us Rs. 100 a year for 10 years and then we will pay you (or your beneficiaries) Rs. 100 a year forever." Is this a good deal if the interest rate available on other deposits is 6 percent?

Problem 51
(Perpetuities)

A local bank will pay you Rs. 100 a year for your lifetime if you deposit Rs. 2,500 in the bank today. If you plan to live forever, what interest rate is the bank paying?

Problem 52
(Present and future value of a cash flow stream)

An investment pays you Rs. 100 at the end of each of the next 3 years. The investment will then pay you Rs. 200 at the end of Year 4, Rs. 300 at the end of Year 5, and Rs. 500 at the end of Year 6. If the rate of interest earned on the investment is 8 percent, what is its present value? What is its future value?

Problem 53
(Uneven cash flow stream)

Find the present values and future values of the following cash flow streams under the following conditions:

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

a. The appropriate interest rate is 8 percent.
b. What is the value of each cash flow stream at a 0 percent interest rate?

and ~~...~~ payments at the end of each of the 20 years. What is the amount of the annual payment?

Problem 38
(Future value)
Assume that it is now January 1, 1996. On January 1,1997, you will deposit Rs.1,000 into a savings account that pays 8 percent.

a. If the bank compounds interest annually, how much will you have in your account on January 1, 2000?

b. What would your January 1, 2000, balance be if the bank used quarterly compounding rather than annual compounding?

c. Suppose you deposited the Rs.1,000 in 4 payments of Rs.250 each on January 1 of 1997, 1998, 1999, and 2000. How much would you have in your account on January 1, 2000, based on 8 percent annual compounding?

d. Suppose you deposited 4 equal payments in your account on January 1 of 1997, 1998, 1999, and 2000. Assuming an 8 percent interest rate, how large would each of your payments have to be for you to obtain the same ending balance as you calculated in Part a?

Problem 39
(Effective rate of interest)
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?

Problem 40
(Effective rate of interest)
A mortgage company offers to lend you Rs.85,000; the loan calls for payments of Rs.8,273.59 per year for 30 years. What interest rate is the Mortgage Company charging you?

Problem 41
(rate of return)
A 5-year security has a price of Rs. 1,300. The security pays Rs. 400 at the end of each of the next 5 years. What is the expected return of this investment to that investor?

Problem 42
(rate of return)
On a contract you have a choice of receiving Rs.25,000 six years from now or Rs.50,000 twelve years from now. At what implied compound annual interest rate should you be indifferent between the two contracts?

Problem 43
(rate of return)
A 5-year security has a price of Rs. 1,300. The security pays Rs. 400 at the end of each of the next 5 years. What is the expected return of this investment to that investor?

Problem 44
(Repaying a loan)
While Prashant was a student at the Kathmandu University, he borrowed Rs.12,000 in student loans at an annual interest rate of 9 percent. If Prashant repays Rs.1,500 per year, how long, to the nearest year, will it take him to repay the loan?

Problem 45
(Reaching a financial goal)
You need to accumulate Rs.10,000. To do so, you plan to make deposits of Rs.1,750 per year, with the first payment being made a year from today, in a bank account which pays 6 percent annual interest. Your last deposit will be more than Rs.1,750 if more is needed to round out to Rs.10,000. How many years will it take you to reach your Rs.10,000 goal, and how large will the last deposit be?

Problem 54
(value of a cash flow stream)

A rookie quarterback is in the process of negotiating his first contract. The team's general manager has offered him three possible contracts. Each of the contracts lasts for 4 years. All of the money is guaranteed and is paid at the end of each year. The terms of each of the contracts are listed below:

	Contract 1 Payments	Contract 2 Payments	Contract 3 Payments
Year 1	Rs. 3 million	Rs. 2 million	Rs. 7 million
Year 2	3 million	3 million	1 million
Year 3	3 million	4 million	1 million
Year 4	3 million	5 million	1 million

The quarterback discounts all cash flows at 10 percent. Which of the three contracts offers him the most value?

Problem 55
(Applying time value)

A factory costs Rs.400,000. You forecast that it will produce cash inflows of Rs. 120,000 in Year 1, Rs. 180,000 in Year 2, and Rs. 300,000 in Year 3. The discount rate is 12 percent. Is the factory a good investment? Explain.

Problem 56
(Effective rate of interest)

Find the interest rates, or rates of return, on each of the following:

a.   Your 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 to be paid 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.

Problem 57
(Amortization schedule)

Jirel Company just borrowed Rs.25,000. The loan is to be repaid in equal installments at the end of each of the next 5 years, and the interest rate is 10 percent.

a.   Set up an amortization schedule for the loan.

a.   How large must each annual payment be if the loan is for Rs.50,000? Assume that the interest rate remains at 10 percent and that the loan is paid off over 5 years.

c.   How large must each payment be if the loan is for Rs.50,000, the interest rate is 10 percent, and the loan is paid off in equal installments at the end of each of the next 10 years? This loan is for the same amount as the loan in Part b, but the payments are spread out over twice as many periods. Why are these payments not half as large as the payments on the loan in Part b?

Problem 58
(with amortization effective interest TU 2062 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?

Problem 59
(amortization)

Assume that your aunt sold her house on December 31 and that she took a mortgage in the amount of Rs.10,000 as part of the payment. The mortgage has a quoted (or simple) interest rate of 10 percent, but it calls for payments every 6 months, beginning on June 30, and the mortgage is to be amortized over 10 years. To the closest rupee, what is the total amount of interest that was paid during the first year?