INSTRUCTION: There are 10 problems. Each problem is 10 points. No credit will be given if answer is not related to the question asked.

1. You borrow $10,000 at 14 percent for 4 years. The loan is repayable in four equal annual installments payable at the end of each year.
   a. What is the annual payment that will completely *amortize* (that is, reduce debt by regular payment of interest and principal sufficient to pay off the loan by maturity) the loan over 4 years? (You may wish to round to the nearest dollar.)
   b. Of each equal payment, what is the amount of interest? . . . the amount of loan principal (that is, the original amount borrowed)? [HINT: In early years, the payment is composed largely of interest, whereas at the end it is mainly principal.]

2. Sorbond Industries has a *beta* of 1.45. The risk-free rate is 10 percent and the expected return on the market portfolio is 16 percent. The company presently pays a dividend of $2 a share, and investors expect it to experience a growth in dividends of 10 percent per annum for many years to come.
   a. What is the stock's required rate of return according to the CAPM?
   b. What is the stock's present market price per share, assuming this required return?
   c. What would happen to the required return and to market price per share if the beta were 0.80? (Assume that all else stays the same.)

3. Using the following information, complete the balance sheet:

Long-term debt to equity	.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	$______	Notes and payables	$100,000
Accounts receivable	______	Long-term debt	______
Inventory	______	Common stock	$100,000
Plant and equipment	______	Retained earnings	100,000
Total assets	$______	Total liabilities and shareholders' equity	$______

(背面仍有題目,請繼續作答)

4. Zzzz Worst Company presently has total assets of \$3.2 million, of which current assets comprise \$.2 million. Sales are \$10 million annually, and the before-tax net profit margin (the firm currently has no interest-bearing debt) is 12 percent. Given renewed fears of potential cash insolvency, an overly strict credit policy, and imminent stockouts, the company is considering higher levels of current assets as a buffer against adversity. Specifically, levels of \$.5 million and \$.8 million are being considered instead of the \$.2 million presently held. Any additions to current assets would be financed with new equity capital.

a. Determine the total asset turnover, before-tax return on investment, and the before-tax net profit margin under the three alternative levels of current assets.

b. If the new additions to current assets were financed with long-term debt at 15 percent interest, what would be the before-tax interest "cost" of the two new policies?

5. The Zindler Company currently has a centralized billing system. Payments are made by all customers to the central billing location. It requires, on the average, 4 days for customers' mailed payments to reach the central location. An additional day and a half is required to process payments before a deposit can be made. The firm has a daily average collection of \$500,000. The company has recently investigated the possibility of initiating a lock-box system. It has estimated that with such a system customers' mailed payments would reach the receipt location two and one half days sooner. Further, the processing time could be reduced by an additional day because each lock-box bank would pick up mailed deposits twice daily.

a. Determine the reduction in cash balances that can be achieved through the use of a lock-box system.

b. Determine the annual opportunity cost of the present system, assuming a 5 percent return on short-term instruments.

c. If the annual cost of the lock-box system will be \$75,000, should such a system be initiated?

6. To reduce production start-up costs, Bodden Truck Company may manufacture longer runs of the same truck. Estimated savings from the increase in efficiency are \$260,000 per year. However, inventory turnover will decrease from eight times a year to six times a year. Cost of goods sold is \$48 million on an annual basis. If the required before-tax rate of return on investment in inventories is 15 percent, should the company instigate the new production plan?

7. Briarcliff Stove Company is considering a new product line to supplement its range line. It is anticipated that the new product line will involve cash investment of $700,000 at time 0 and $1.0 million in year 1. After-tax cash inflows of $250,000 are expected in year 2, $300,000 in year 3, $350,000 in year 4, and $400,000 each year thereafter through year 10. While the product line might be viable after year 10, the company prefers to be conservative and end all calculations at that time.

a. If the required rate of return is 15 percent, what is the net present value of the project? Is it acceptable?

b. What is the project's payback period?

8. The Sprouts-N-Steel Company has two divisions: Health Foods and Specialty Metals. 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.

Sprouts-N-Steel 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 division. The company has thought about using the capital-asset pricing model in this regard. It has identified two samples of companies, with modal value betas of .09 for Health Foods and 1.30 for Specialty Metals. (Assume that the sample companies had similar capital structures to that of Sprouts-N-Steel.) The risk-free rate is presently 12 percent and the expected return on the market portfolio 17 percent. Using the CAPM approach, what weighted-average required returns on investment would you recommend for these two divisions?

9. Enoch-Arden Corporation has earnings before interest and taxes of $3 million and a 40 percent tax rate. It is able to borrow at an interest rate of 14 percent, whereas its equity capitalization rate in the absence of borrowing is 18 percent. The earnings of the company are not expected to grow and all earnings are paid out to shareholders in the form of dividends. In the presence of corporate but no personal taxes, what is the value of the company in an M&M world with no financial leverage? With $4 million in debt? With $7 million in debt?

10. Thousand Islands Resorts has 1,750,000 shares of authorized common stock, each having a $1 par value. Over the years, it has issued 1,532,000 shares, but presently 63,000 are held as treasury stock. The additional paid-in capital of the company is presently $5,314,000.

a. How many shares are now outstanding?

b. If the company were able to sell stock at $19 per share, what is the maximum amount it could raise under its existing authorization, including treasury shares?

c. What would be its common stock and additional paid-in capital accounts after the financing?