

1. Consider the following two mutually exclusive projects:

year	Cash Flows A	Cash Flows B
0	-\$260,000	-\$40,000
1	\$5,000	\$45,000
2	\$15,000	\$5,000
3	\$15,000	\$500
4	\$425,000	\$500

Whichever project you choose, if any, you require a 15 percent return on your investment.

- If you apply the payback criterion, which investment will you choose? Why?
- If you apply the discounted payback criterion, , which investment will you choose? Why?
- If you apply NPV criterion, which investment will you choose? Why?
- If you apply IRR criterion, which investment will you choose? Why?
- If you apply the profitability index criterion, which investment will you choose? Why?
- Based on your answers in (a) through (e), which project will you finally choose? Why? (20 分)

2. Currently under consideration is a project with a beta,  $\beta$ , of 1.5. At this time, the risk free rate of return,  $R_f$ , is 7 percent, and the return on the market portfolio of assets,  $k_m$ , is 10 percent. The project is actually expected to earn an annual rate of return of 11 percent.

- If the return on the market portfolio were to increase by 10 percent, what would be expected to happen to the project's required return? What if the market return were to decline by 10 percent?
- Use the capital asset pricing model (CAPM) to find the required return on this investment?
- On the basis of your calculation in (b), would you recommend this investment? Why or Why not?
- Assume that as a result of investors becoming less risk-averse, the market return drops by 1 percent to 9 percent. What impact would this change have on your responses in (b) and (c)? (20 分)

3. TOR most recently sold 100,000 units at \$7.5 each; its variable operating cost are \$3 per unit, and its fixed operating costs are \$250,000. Annual interest charges total \$80,000, and the firm has 8,000 shares of \$5 (annual dividend) preferred stock outstanding. It currently has 20,000 shares of common stock outstanding.

Assume that the firm has a 40 percent tax rate.

- At what level of sales (in units) would the firm break even on operations (i.e.,  $EBIT = \$0$ )?
- Calculate the firm's earnings per share (EPS) in tabular form at (1) at the current level of sales and (2) a 120,000-unit sales level.
- Using the current \$750,000 of sales as a base, calculate the firm's degree of operating leverage (DOL).
- Using the EBIT associated with the \$750,000 level of sales as a base, calculate the firm's degree of financial leverage (DFL).
- Use the degree of total leverage (DTL) concept to determine the effect (in percentage terms) of a 50 percent increase in TOR's sales from the \$750,000 base level on its earnings per share. (20 分)

4. Bulah Gas wishes to raise \$1 million in common equity financing using a rights offering. The company has 500,000 shares of common stock outstanding that have recently traded for \$25 to \$28 per share. The firm believes that if the subscription price is set at \$25, the shares will be fully subscribed.

- Determine the number of new shares the firm must sell to raise the desired amount of capital.
- How many shares will each right entitle a holder of one share to purchase?
- If Candy Lopez, who holds 5,000 shares of Bulah Gas, exercise her rights, how many additional shares can she purchase?
- Approximately how much could Candy get for her rights immediately after the stock goes ex rights? (20 分)

5. Consider the following premerger information about a bidding firm (Firm B) and a target firm (Firm T). Assume that both firms has no debt outstanding.

	Firm B	Firm T
Shares outstanding	1,000	250
Price per share	\$25	\$15

Firm B has estimated that the value of the synergistic benefits from acquiring Firm T is \$1000.

- If Firm T willing to be acquired for \$18 per share in cash, what is the NPV of the merger?
- What will be the price per share of the merged firm be assuming the conditions in (a)?
- In part (a), what is the merger premium?
- Suppose Firm T is agreeable to a merger by an exchange of stock. If B offers three of its shares for every five of T's shares, what will the price per share of the merged firm be?
- What is the NPV of the merger assuming the conditions in (d)? (20 分)