

BEAM044 / BEFM021

UNIVERSITY OF EXETER

SCHOOL OF BUSINESS AND ECONOMICS

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**FUNDAMENTALS OF FINANCIAL MANAGEMENT
FINANCIAL THEORY & MANAGEMENT**

Module Convenor: Professor Richard Harris

Duration: ONE AND A HALF HOURS

Candidate Number _____

Student ID Number _____

Degree Programme _____

In Section A, you must answer ALL multiple choice questions – each question is worth 2 marks.

In Section B, answer TWO questions out of FOUR. Questions in this section carry 15 marks.

All questions MUST be answered in THIS booklet.

No extra paper is allowed.

Additional blank pages are provided at the end of this exam book.

You MUST NOT remove this book from the exam room.

Only approved silent non-programmable calculators are permitted.

This is a closed note paper.

SECTION A (Multiple Choice)

Answer ALL questions in this section

Each question in this section is worth 2 marks

Give ONE answer only for each question. Mark your answer with a circle around the appropriate letter

Do NOT show your working

1. Which of the following statements is most correct?
 - a. Compensating managers with stock can reduce the agency problem between stockholders and managers.
 - b. Restrictions are included in credit agreements to protect bondholders from the agency problem that exists between bondholders and stockholders.
 - c. The threat of a takeover can reduce the agency problem between bondholders and stockholders.
 - d. Statements a and b are correct.
 - e. All of the statements above are correct.

2. Which of the following statements is most correct?
 - a. A two-stock portfolio will always have a lower standard deviation than a one-stock portfolio.
 - b. A two-stock portfolio will always have a lower beta than a one-stock portfolio.
 - c. If portfolios are formed by randomly selecting stocks, a 10-stock portfolio will always have a lower beta than a one-stock portfolio.
 - d. All of the statements above are correct.
 - e. None of the statements above is correct.

3. Stock A has a beta of 0.8, Stock B has a beta of 1.0, and Stock C has a beta of 1.2. Portfolio P has equal amounts invested in each of the three stocks. Each of the stocks has a standard deviation of 25 percent. The returns of the three stocks are independent of one another (i.e., the correlation coefficients all equal zero). Assume that there is an increase in the market risk premium, but that the risk-free rate remains unchanged. Which of the following statements is most correct?
 - a. The required return of all three stocks will increase by the amount of the increase in the market risk premium.
 - b. The required return on Stock A will increase by less than the increase in the market risk premium, while the required return on Stock C will increase by more than the increase in the market risk premium.
 - c. The required return of all stocks will remain unchanged since there was no change in their betas.

- d. The required return of the average stock will remain unchanged, but the returns of riskier stocks (such as Stock C) will decrease while the returns of safer stocks (such as Stock A) will increase.
 - e. The required return of the average stock will remain unchanged, but the returns of riskier stocks (such as Stock C) will increase while the returns of safer stocks (such as Stock A) will decrease.
4. Which of the following statements is most correct?
- a. The beta coefficient of a stock is normally found by running a regression of past returns on the stock against past returns on a stock market index. One could also construct a scatter diagram of returns on the stock versus those on the market, estimate the slope of the line of best fit, and use it as beta.
 - b. It is theoretically possible for a stock to have a beta of 1.0. If a stock did have a beta of 1.0, then, at least in theory, its required rate of return would be equal to the risk-free (default-free) rate of return, k_{RF} .
 - c. If you found a stock with a zero beta and held it as the only stock in your portfolio, you would by definition have a riskless portfolio. Your 1-stock portfolio would be even less risky if the stock had a negative beta.
 - d. The beta of a portfolio of stocks is always larger than the betas of any of the individual stocks.
 - e. All of the statements above are correct.
5. A 12-year bond has an annual coupon rate of 9 percent. The coupon rate will remain fixed until the bond matures. The bond has a yield to maturity of 7 percent. Which of the following statements is most correct?
- a. The bond is currently selling at a price below its par value.
 - b. If market interest rates decline today, the price of the bond will also decline today.
 - c. If market interest rates remain unchanged, the bond's price one year from now will be lower than it is today.
 - d. All of the statements above are correct.
 - e. None of the statements above is correct.
6. All of the following may serve to reduce the coupon rate that would otherwise be required on a bond issued at par, except a
- a. Sinking fund.
 - b. Restrictive covenant.
 - c. Call provision.
 - d. Change in rating from Aa to Aaa (i.e. an increase in the credit rating).
 - e. None of the statements above. (All may reduce the required coupon rate.)
7. Assume that markets are semistrong-form efficient, but not strong-form efficient. Which of the following statements is most correct?

- a. Each common stock has an expected return equal to that of the overall market.
 - b. Bonds and stocks have the same expected return.
 - c. Investors can expect to earn returns above those predicted by the SML if they have access to public information.
 - d. Investors may be able to earn returns above those predicted by the SML if they have access to information that has not been publicly revealed.
 - e. Statements b and c are correct.
8. Which of the following statements is most correct?
- a. The WACC measures the after-tax cost of capital.
 - b. The WACC measures the marginal cost of capital.
 - c. There is no cost associated with using retained earnings.
 - d. Statements a and b are correct.
 - e. All of the statements above are correct.
9. Projects A and B both have normal cash flows. In other words, there is an up-front cost followed over time by a series of positive cash flows. Both projects have the same risk and a WACC equal to 10 percent. However, Project A has a higher internal rate of return than Project B. Assume that changes in the WACC have no effect on the projects' cash flow levels. Which of the following statements is most correct?
- a. Project A must have a higher net present value than Project B.
 - b. If Project A has a positive NPV, Project B must also have a positive NPV.
 - c. If Project A's WACC falls, its internal rate of return will increase.
 - d. If Projects A and B have the same NPV at the current WACC, Project B would have a higher NPV if the WACC of both projects was lower.
 - e. Statements b and c are correct.
10. Project A has an IRR of 15 percent. Project B has an IRR of 18 percent. Both projects have the same risk. Which of the following statements is most correct?
- a. If the WACC is 10 percent, both projects will have a positive NPV, and the NPV of Project B will exceed the NPV of Project A.
 - b. If the WACC is 15 percent, the NPV of Project B will exceed the NPV of Project A.
 - c. If the WACC is less than 18 percent, Project B will always have a shorter payback than Project A.
 - d. If the WACC is greater than 18 percent, Project B will always have a shorter payback than Project A.
 - e. If the WACC increases, the IRR of both projects will decline.
11. When evaluating potential projects, which of the following factors should be incorporated as part of a project's estimated cash flows?

- a. Any sunk costs that were incurred in the past prior to considering the proposed project.
 - b. Any opportunity costs that are incurred if the project is undertaken.
 - c. Any externalities (both positive and negative) that are incurred if the project is undertaken.
 - d. Statements b and c are correct.
 - e. All of the statements above are correct.
12. Which of the following statements is correct?
- a. In a capital budgeting analysis where part of the funds used to finance the project are raised as debt, failure to include interest expense as a cost in the cash flow statement when determining the project's cash flows will lead to an upward bias in the NPV.
 - b. The preceding statement would be true if "upward" were replaced with "downward."
 - c. The existence of "externalities" reduces the NPV to a level below the value that would exist in the absence of externalities.
 - d. If one of the assets to be used by a potential project is already owned by the firm, and if that asset could be leased to another firm if the new project were not undertaken, then the net rent that could be obtained should be charged as a cost to the project under consideration.
 - e. The rent referred to in statement d is a sunk cost, and as such it should be ignored.
13. Which of the following statements best describes the optimal capital structure?
- a. The optimal capital structure is the mix of debt, equity, and preferred stock that maximizes the company's earnings per share (EPS).
 - b. The optimal capital structure is the mix of debt, equity, and preferred stock that maximizes the company's stock price.
 - c. The optimal capital structure is the mix of debt, equity, and preferred stock that minimizes the company's weighted average cost of capital (WACC).
 - d. Statements a and b are correct.
 - e. Statements b and c are correct.
14. Business risk is concerned with the operations of the firm. Which of the following is not associated with (or not a part of) business risk?
- a. Demand variability.
 - b. Sales price variability.
 - c. The extent to which operating costs are fixed.
 - d. Changes in required returns due to financing decisions.
 - e. The ability to change prices as costs change.
15. Which of the following statements is most correct?

- a. The tax preference theory states that, all else equal, investors prefer stocks that pay low dividends because retained earnings can lead to capital gains that are taxed at a lower rate.
- b. An increase in the cost of equity capital (k_s) when a company announces an increase in its dividend per share, would be consistent with the bird-in-the-hand theory.
- c. An increase in the stock price when a company decreases its dividend is consistent with the signaling theory.
- d. A dividend policy that involves paying a consistent percentage of net income is the best policy if the “clienteles effect” is correct.
- e. Statements a and d are correct.

SECTION B (Long Questions)

Answer TWO questions in this section

Each question in this section is worth 15 marks

Write your answer to each question in the box provided

DO show your working

QUESTION 1

Consider two stocks, A and B, with the following expected returns and betas

	Expected Return	Beta
A	9.87%	0.90
B	11.08%	1.15

The risk free rate is 5.50%

- a. Assuming that Stock A is priced according to the CAPM, What is the market risk premium? [3 marks]

- b. What is the equilibrium expected return of Stock B? [3 marks]

- c. Consider Stock C, which has a beta of 1.00. Suppose that you have forecast a return of 8.00% for Stock C. Is Stock C is overpriced, underpriced or fairly priced? [3 marks]

- d. Suppose that you construct an arbitrage portfolio to exploit any mispricing that you might have found in Stocks A, B and C. What would the weights of this portfolio be? [3 marks]

- e. Suppose that the risk free rate rises by 1%. What is the equilibrium expected return of Stock A?

QUESTION 2

Consider a three year 3.80% coupon bond with a par value of \$1000, paying coupons semi-annually. The bond's quoted yield-to-maturity is 4.21%.

- a. What is the fair price of the bond? [3 marks]

- b. What is the bond's current yield and capital gains yield? [3 marks]

- c. Assuming that there is no change in the bond's yield-to-maturity, what is the fair price of the bond in one year's time? [3 marks]

- d. If the bond is callable in six months' time for \$1019, and the market price is equal to the fair price that you have calculated, what is the bond's yield-to-call? [3 marks]

- e. What is the bond equivalent yield of a bond that pays coupons annually and offers a yield to maturity of 5.35%? [3 marks]

QUESTION 3

Suppose that you have the following information about a company

Credit rating	BBB
Beta	1.44
Tax expense	\$28,325,000
Pre-tax income	\$226,895,000
Preferred dividend rate	8.25%
Preferred stock par value	\$100
Preferred stock price	\$102.25
Preferred stock outstanding	26,000,000
Common stock price	\$54.29
Common stock par value	\$25
Common stock outstanding	100,000,000
Expected next common stock dividend	\$1.98
Long term bond yield-to-maturity	8.55%
Enterprise value	\$10,045,795,000
Market risk premium	5.45%
30 year Treasury bond yield-to-maturity	5.75%

a. What is the estimated cost of common equity for the company? [3 marks]

b. What is the estimated after-tax cost of debt for the company? [3 marks]

c. What is the estimated cost of preferred equity for the company? [3 marks]

d. What is the estimated WACC of the company? [3 marks]

e. What is the implied long run growth rate of the company's dividends? [3 marks]

QUESTION 4

A company faces the following pre-tax borrowing rates.

Debt/Assets	Kd
0%	7.00%
20%	8.00%
40%	10.00%
60%	12.00%
80%	15.00%

The risk free rate is 5.75%, the market risk premium is 6.00%, the corporate tax rate is 40% and the beta of the company is 1.27. The debt/equity ratio of the company is 25%.

- a. What is the unlevered beta of the company? [3 marks]

- b. What is the cost of capital of the unlevered company? [3 marks]

- c. What is the cost of equity of the company at 20% Debt/Assets? [3 marks]

- d. At what value of leverage is the WACC minimised? What is the WACC at this level of leverage? [3 marks]

- e. Which level of leverage would be optimal if the company did not pay tax? [3 marks]

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