UNIVERSITI UTARA MALAYSIA

PEPERIKSAAN AKHIR
SEMESTER KEDUA SESI 2001/2002

COURSE CODE : WN 3013 INVESTMENT ANALYSIS
DATE : 25 FEBRUARI 2002 (ISNIN)
TIME : 2 ½ HOURS
VENUE : DP3/2 DP3/1 DP2/1.IP.

INSTRUCTIONS:
1. This paper contains 13 printed pages.
2. Part A contains 20 questions. Answer in the objective sheet provided.
3. Part B contains 5 questions. Answer in the spaces provided for in the exam questions.
4. Return all the exam papers.

MATRIC NO. :  
(with letters)
(with numbers)
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LECTURER'S NAME :
GROUP:

DO NOT OPEN THIS PAPER UNTIL INSTRUCTED

CONFIDENTIAL
1. Which of the following statements regarding the dividend discount model is true?
   a. Dividends are the foundation of valuation for common stocks.
   b. The Dividend Discount Model (DDM) states that the value of a stock is the discounted value of all future dividends.
   c. The DDM is operationalised by estimating the expected future dividends to be paid by a company.
   d. The DDM is not a present value approach.

2. The proportion of earnings paid out as dividends is known as the ________.
   a. payout ratio.
   b. retention ratio.
   c. return on equity.
   d. premium.

3. An American put option gives its holder the right to ________.
   a. buy the underlying asset at the exercise price on or before the expiration date
   b. buy the underlying asset at the exercise price only at the expiration date
   c. sell the underlying asset at the exercise price on or before the expiration date
   d. sell the underlying asset at the exercise price only at the expiration date

4. A one dollar increase in a call option’s exercise price would result in ________ in the call option option’s value of ________ than one dollar.
   a. decrease, less
   b. a decrease, more
   c. an increase, less
   d. an increase, more

5. A call option on BC Corp. has an exercise price of RM30. The current stock price of BC is RM32. The call option is ________.
   a. at the money
   b. in the money
   c. out of the money
6. A wheat farmer should ________ in order to reduce his exposure to risk associated with fluctuations in wheat prices.
   a. sell wheat futures
   b. buy wheat futures
   c. buy a contract for delivery of wheat now, and sell a contract for delivery of wheat at harvest time
   d. sell wheat futures if the basis is currently positive and buy wheat futures if the basis is currently negative

7. Futures are widely used for ________.
   a. hedging the purchase of price
   b. hedging the sale of assets
   c. speculation
   d. All of the above

8. Unsecured bonds issued by a corporation are also known as ________.
   a. indentures
   b. debentures
   c. dentures
   d. ventures

9. Which of the following statements about preferred stock is not true?
   a. Preferred stockholders do not participate in the election of a board of directors
   b. Preferred stockholders’ claim is subordinate to claims of common stockholder.
   c. Preferred stock normally pays a lower interest rate than do corporate bonds.
   d. Preferred stock is equity that behaves like a debt instrument.

10. Which of the following statement is not true?
    a. Treasury bills are sold on a discount basis.
    b. Treasury notes have maturities of 10 years or less.
    c. Treasury bonds are short-term obligations.
    d. Treasury notes pay face value at maturity.
11. _____ are securities created by splitting up mortgage pool cash flows according to specific allocation rules.
   a. Mortgage-backed securities
   b. Collateralized mortgage obligations
   c. Fully modified securities
   d. Interest-only strips

12. Which of the following is true when interest rates are rising?
   a. Average mortgage life shortens.
   b. Prepayments speed up.
   c. Prepayments remain constant.
   d. Average mortgage life lengthens.

13. The interest rate that the Federal Reserve Bank offers to commercial banks for overnight reserve loans is called _____.
   a. prime rate
   b. Federal funds rate
   c. discount rate
   d. Bellwether rate

14. Investors are constantly appraising the values of companies by buying and selling shares previously issued by companies in the _____.
   a. primary market
   b. secondary market
   c. money market
   d. Treasury market

15. Which of the following theories state that the shape of the yield curve depends on the supply and demand for bonds with different maturities?
   a. Maturity preference theory.
   b. Expectations theory
   c. Market segmentation theory
   d. Fisher theory

16. The relationships among the coupon rate, the current yield, and the yield to maturity (YTM) for a discount bond are:
   a. coupon rate > current yield > YTM
   b. coupon rate > current yield < YTM
   c. coupon rate = current yield = YTM
   d. coupon rate < current yield < YTM
17. Examination of a firm’s accounting statements and other financial information to assess the economic value of a company’s stock is called ________.
   a. security analysis
   b. fundamental analysis
   c. stock investigation
   d. investments

18. Assuming the risk of buying a company’s newly issued securities with the intention of reselling them to investors is called ________.
   a. free-writing
   b. direct lending
   c. indirect lending
   d. underwriting

19. Which of the following bonds has the longest duration?
   a. 9-year maturity, 5 percent coupon
   b. 9-year maturity, 12 percent coupon
   c. 15-year maturity, 2 percent coupon
   d. 15-year maturity, 12 percent coupon

20. An inverted yield curve implies ________.
   a. long-term interest rates are lower than short-term interest rates
   b. long-term interest rates are higher than short-term interest rates
   c. short-term interest rates are the same as long-term interest rates
   d. none of the above
PART B

Question 1 (15 marks) (70 marks)

a. Define the following terms associated with options:

(i) Option (1 mark) (6 marks)

(ii) Exercise price (1 mark)

(iii) Strike price (1 mark)

(iv) Expiration date (1 mark)

(v) Call option

(vii) Put option
b. The strike price of a call option on SEM common stock is RM60.

(i) What is the payoff at expiration of this call if, on the expiration date, the SEM stock sells for RM65? (2 marks)

(ii) What is the payoff at expiration of this call if, on the expiration date, SEM stock sells for RM55? (2 marks)

(iii) Draw the payoff diagrams in (i) and (ii) for this option. (5 marks)
Question 2   (15 marks)

Kane is currently in a building stage. It is not expected to change its annual cash dividend while new projects are being developed over the next 3 years. Its dividend was RM2.00 last year and is to be RM2.00 for each of the next 3 years. After the projects have been developed, earnings are expected to grow at a high rate for 2 years as the sales resulting from the new projects are realized. The higher earnings are expected to result in a 40% increase in dividends for 2 years. After these two extraordinary increases in dividends, the dividend growth rate is expected to be 3% per year forever. Kane's common stock required return is 12%.

a. How much is the stock currently selling for? (11 marks)

b. What will be your decision be if the stock is selling for RM38.00 per share? (1 mark)

c. Give two (2) reasons to support your answer in part (b) (3 marks)
Question 3:  (15 marks)

Given the explicit probability distribution shown below:

<table>
<thead>
<tr>
<th>Economic scenario</th>
<th>Probability</th>
<th>Conditional returns</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Boom</td>
<td>0.3</td>
<td>24%</td>
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<tr>
<td>Steady</td>
<td>0.4</td>
<td>9%</td>
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<tr>
<td>Bust</td>
<td>0.3</td>
<td>-11%</td>
</tr>
</tbody>
</table>

a.  Determine the equation for the security market line (SML), assuming that $r_f$ is 7%.  
(2 marks)

b.  What does the SML tell about the “market price of risk”?  
(2 marks)

c.  Calculate the covariance for security X.  
(4 marks)
d. Calculate the beta for security X. (4 marks)

e. Is the stock undervalued or overvalued? Why? (3 marks)
Question 4  (15 marks)

a. Why do companies in Malaysia need rating agencies like Rating Agency Malaysia (RAM) and Malaysian Rating Corporation Bhd (MARC), for their bond issuing process? (2 marks)

b. What is the main reason for the existence of an active secondary market for corporate bonds? (2 marks)
<table>
<thead>
<tr>
<th></th>
<th>Asset A</th>
<th>Asset B</th>
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<tbody>
<tr>
<td>( \mu )</td>
<td>12%</td>
<td>5%</td>
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<td>( \sigma^2 )</td>
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<td>( \sigma )</td>
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<td>weight</td>
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- **Covariance**

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<td>Asset A</td>
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<td>-0.00075</td>
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- **Correlation**

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c. Following the information in the tables above, compute:

(i) the minimum weight for asset A that minimizes the portfolio variance. (3 marks)

(ii) the minimum variance, and standard deviation of the portfolio consisting of asset A and asset B. (3 marks)
(iii) the portfolio’s standard deviation with weight of 50/50.

(2 marks)

(iv) the portfolio’s standard deviation after the computation in (i).

(2 marks)

d. Why diversification reduces the portfolio’s risk?

(1 mark)
Question 5  (10 marks)

Reston Corporation’s bond matures in 10 years and pays a 9% interest semiannually on an RM1,000 par value. The market price of the bond is RM937.79.

a. Compute the bond’s yield to maturity (YTM).  (5 marks)

b. What is the bond’s duration?  (5 marks)
FORMULAS:
\[ E(R_i) = \sum_{s=1}^{n} p(s) r(s) \]
\[ E(R_i) = R_j + \beta_{ij} [E(R_m) - R_j] \]
\[ E(R_p) = X_1E(R_1) + X_2E(R_2) + \ldots + X_nE(R_n) \]
\[ R_i = \bar{R} + \beta_1F_1 + \beta_2F_2 + \ldots + \beta_KF_K + \varepsilon \]

Expected covariance = \[ Cov_{i,m} = \sum_{s} [r_{is} - E(r_i)][r_{ms} - E(r_m)] \pi_s \]
Expected \[ \beta_{im} = \frac{Cov_{im}}{\sigma_m^2} \]
\[ \beta_i = Corr(R_i, R_m) \times \frac{\sigma_i}{\sigma_m} \]
\[ \beta_p = X_1\beta_1 + X_2\beta_2 \]

Expected alpha, \[ \alpha_i = \frac{E(r_i) - R(r_i)}{E(r_i) - \{E(r_m) - R_j]\beta_{im}} \]
Slope, \[ \alpha_i = \frac{E(R_i) - E(R_j)}{\beta_i} \]
\[ \sigma^2 = \sum_{s} p(s)[r(s) - E(r)]^2 \]
\[ \sigma_{rp}^2 = X_1^2\sigma_1^2 + X_2^2\sigma_2^2 + 2X_1X_2\sigma_1\sigma_2Corr(R_1, R_2) \]
\[ X_{*,i}^2 = \frac{\sigma_{pp}^2 - \sigma_{ip}\sigma_{ip}Corr(R_1, R_2)}{\sigma_{ii}^2 + \sigma_{pp}^2 - 2\sigma_{pi}\sigma_{pi}Corr(R_1, R_2)} \]
**Instruction: Blacken your answers**

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- Name
- Matric No.
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- Lecturer