

DP09

Investment

12 APRIL 2007

1. Time allowed : Three (3) hours
2. Total number of questions : Five (5) questions
3. Number of questions to be answered : All five (5) questions
Part A : One (1) question [20 marks]
Part B : Four (4) questions [20 marks each]
4. Show details of workings, where appropriate. Silent, non-programmable calculators may be used.
5. Begin each answer to a new question on a fresh page.
6. Answer **all** questions in **English**.
7. A blank page is provided at the end of the question paper for rough work.

PART A

1. **Only brief answers are required in this section (a few words or a few sentences). Answer ALL parts of the question.**

- (a) Each share of ABC Bhd has a par value of RM0.50. On 1 April 2005, ABC Bhd issued its shares to the public at RM0.80 per share.
- (i) Calculate the share premium per share for ABC Bhd. [2]
- (ii) Can ABC Bhd issue its shares at RM0.40 per share? Explain your answer. [2]
- (b) XYZ Bhd declared a dividend of RM0.10 per share on 1 April 2005. The shares of XYZ Bhd will trade ex-dividend on 20 April 2005 and the payment date is 31 May 2005.
- (i) Jane bought the shares of XYZ Bhd on 1 March 2005. Jack bought the shares on 19 April 2005. Juliet invested in XYZ Bhd on 31 May 2005.
- Who will be entitled to the dividend that will be distributed by XYZ Bhd? [2]
- (ii) Briefly explain "ex-dividend date". [2]
- (c) Describe the following preference shares:
- (i) Redeemable preference shares [3]
- (ii) Cumulative preference shares [3]
- (iii) Participating preference shares [3]
- (d) State **three** privileges that an ordinary shareholder of a company is entitled to. [3]
- (Total:20 marks)

PART B

ANSWER ALL QUESTIONS

2. (a) You are given the following data for Portfolio 1 and Portfolio 2:

| Portfolio 1 | Probability of Return | Possible Return |
|----------------|-----------------------|-----------------|
| Stock A | 0.4 | 10% |
| Stock B | 0.3 | 20% |
| Stock C | 0.3 | 5% |
| Risk-free rate | 5% | |
| Risk premium | 8% | |
| Beta | 3.0 | |

| Portfolio 2 | Probability of Return | Possible Return |
|----------------|-----------------------|-----------------|
| Stock E | 0.25 | 7% |
| Stock F | 0.40 | 10% |
| Stock G | 0.35 | 15% |
| Risk-free rate | 5% | |
| Risk premium | 10% | |
| Beta | 0.7 | |

- (i) Compute the expected rates of return for Portfolio 1 and Portfolio 2. [4]
- (ii) Using the Capital Asset Pricing Model, compute the required rates of return for Portfolio 1 and Portfolio 2. [4]
- (iii) Which portfolio would you invest in? Explain your answer. [2]
- (b) The covariance of the return of stock Z to market return is 2 and the variance of market return is 1.5.
What is the beta of stock Z? [2]
- (c) Explain the causes of a:
(i) change in the slope of Security Market Line (SML). [2]
(ii) parallel shift of the SML. [2]
- (d) What is the **main** difference between fundamental and technical analysis? [4]
- (Total:20 marks)

3. (a) You are given the following data:

| Item | Bond A | Bond B | Bond C | Bond D | Bond E | Bond F |
|-------------------|--------|--------|---------------|---------------|--------|--------|
| Rating | AA | AAA | BBB | BBB | A | A |
| Coupon rates | 3.50% | 2.50% | 4.00% | 4.00% | 3.80% | 3.80% |
| Call features | No | No | No | No | Yes | No |
| Marketability | High | High | Mode- rate | Mode- rate | Low | High |
| Term to maturity | 3-year | 3-year | 3-year | 5-year | 3-year | 3-year |
| Yield-to-maturity | 4.20% | 3.20% | 5.80% | 7.10% | 3.50% | 3.20% |

Explain why:

- (i) Bond B's yield-to-maturity is lower than that of Bond A. [2]
- (ii) Bond C's yield-to-maturity is lower than that of Bond D. [2]
- (iii) Bond E's yield-to-maturity is higher than that of Bond F. [2]
- (b) Explain how the following features affect the maturity of a bond:
- (i) Non-callable provision [2]
- (ii) Non-refunding provision [2]
- (iii) Sinking fund [2]
- (c) Identify the option strategy adopted by the following investors:
- (i) Karen notices that the market price of SAO Bhd is trading near its option's strike price. She expects the price of SAO Bhd to start moving but she is unsure if the market price will increase or decrease. Thus, she bought a pair of long call and long put at the same strike price. [1]
- (ii) Andy believes that the price of JKL Bhd will rise. In order to capitalise on his conviction, he purchases a combination of two puts and a call of JKL Bhd. The puts and the call have the same expiration date and exercise price. [1]
- (iii) Julie believes that the probability of an increase in the share price of ITA Bhd will exceed the probability of a price decrease. Thus, she bought two calls and a put of ITA Bhd, which have the same expiration date and exercise price. [1]
- (d) State **five** variables used in the Black-Scholes' Model to value the call option of a non-dividend paying stock. [5]

(Total:20 marks)

4. (a) You are given the income statement and balance sheet of DK Bhd:

**CONSOLIDATED INCOME STATEMENT
FOR THE YEAR ENDED 31 DECEMBER 2006**

| Item | RM'000 |
|---|----------------|
| Turnover | 317,935 |
| Cost of goods sold | (185,338) |
| Gross profit | 132,597 |
| Other operating income | 6,950 |
| Distribution costs | (49,128) |
| Administrative expenses | (21,983) |
| Profit from operations | 68,436 |
| Finance costs | (11,583) |
| Share of loss of an associate | (51) |
| Profit before taxation | 56,802 |
| Taxation | (4,572) |
| Profit before minority interests | 52,230 |
| Minority interests | (1,776) |
| Net profit for the year | 50,454 |

CONSOLIDATED BALANCE SHEET AS AT 31 DECEMBER 2006

| Item | RM'000 |
|-------------------------|----------------|
| Non-current assets | 309,259 |
| Current assets | 208,328 |
| Current liabilities | (204,423) |
| Net current assets | 3,905 |
| | 313,164 |
| Shareholders' equity | 155,463 |
| Minority interests | 2,741 |
| Non-current liabilities | 154,960 |
| | 313,164 |

- (i) Using the above information, calculate the following financial ratios for DK Bhd and show your workings:
- (aa) Operating margin [2]
 - (bb) Asset turnover [2]
 - (cc) Interest expense rate [2]
 - (dd) Financial leverage multiplier [2]
 - (ee) Tax retention rate [2]
- (ii) Using the Du Pont System, calculate the return on equity (ROE) of DK Bhd. [2]
- (b) State whether each of the following will cause an increase or decrease in the ROE:
- (i) An increase in operating profit margin. [1]
 - (ii) A reduction in assets turnover. [1]
 - (iii) An increase in interest burden. [1]
 - (iv) An increase in financial leverage multiplier. [1]
 - (v) An increase in tax rate. [1]
- (c) State **one** difference between an American option and a European option. [2]
- (d) Define "long straddle". [1]
- (Total:20 marks)
5. (a) List **five** main objectives of Malaysian Central Depository Sdn Bhd. [5]
- (b) List **three** benefits of the Central Depository System to listed companies and their registrars. [3]
- (c) Briefly explain "designated securities". [2]
- (d) For each of the following statements, state "**True**" or "**False**":
- (i) The Exchange Committee may request all member companies to furnish them with full particulars of all outstanding contracts, dealings and transactions in designated securities within 48 hours. [1]
 - (ii) The Exchange Committee may restrict any Member Company from trading in any designated securities such that the outstanding contracts of that Member Company at any one moment do not exceed 5% of its paid-up capital of the company, whose securities have been designated. [1]
 - (iii) A seller can sell designated securities if he delivers the shares together with the duly executed transfer form to his broker at the time of entering into a contract sale. [1]
- (e) List **five** obligations of Bursa Malaysia as a self-regulatory organisation. [5]
- (f) State the role of the Securities Commission. [2]
- (Total:20 marks)

- END OF QUESTION PAPER -

OUTLINE ANSWERS

The comments given in the boxes below indicate the areas of weaknesses the examiners have identified and their advice to future candidates.

Question 1

- Candidates could compute the share premium well.
- Candidates were unable to give a detailed description on preference shares.
- Candidates need to improve their knowledge in the definition of preference shares.

PART A

1. *Only brief answers are required in this section (a few words or a few sentences). Answer ALL parts of the question.*

- (a) (i) Share premium = Issued price of shares – Par value
= RM0.80 – RM0.50
= RM0.30
- (ii) No. No shares can be issued below their par value without a court sanction.
- (b) (i) Jane and Jack.
- (ii) It means investors who bought the share on the ex-dividend date will not be entitled to the dividend entitlement attached to the share.
- (c) (i) Redeemable preference shares
Redeemable preference shares can be redeemed or recalled by the issuing company. When this option is exercised, the investors will receive a pre-determined sum of money, which usually include any unpaid dividends.
- (ii) Cumulative preference shares
For cumulative preference shares, unpaid dividends may accumulate as dividends in arrears, but must be paid to the cumulative preference shareholders before any dividend can be paid to the ordinary shareholders.
- (iii) Participating preference shares
A participating preference share gives its owner the right to share both the fixed dividend and earnings of the company after all senior securities have been paid. This class of preference shares may be cumulative, non-cumulative or convertible.
- (d)
 - Company's profit by way of dividend entitlements.
 - Reserves of the company by way of bonus issues.
 - Increase his/her investment in the company by acquiring more ordinary shares and/or through rights issues and conversion entitlements, such as convertible loan stocks or warrants.

PART B

Question 2

- Candidates were good at distinguishing the difference between fundamental and technical analysis.
- Candidates showed poor application of the Capital Asset Pricing Model to compute rates of return and poor understanding of covariance and SML.
- Candidates need to understand the concept of expected and required returns and its application in order to obtain a better score.

2. (a) (i) Expected return of Portfolio 1:
 $E(R_1) = 0.4 (10\%) + 0.3 (20\%) + 0.3 (5\%) = 11.5\%$
- Expected return of Portfolio 2:
 $E(R_2) = 0.25 (7\%) + 0.40 (10\%) + 0.35 (15\%) = 11\%$
- (ii) Required rate of return of Portfolio 1:
 $k_1 = \text{Risk free rate} + \beta_1 (\text{Risk premium}_1 - \text{Risk free rate})$
 $= 5\% + 3 (8\% - 5\%)$
 $= 14\%$
- Required rate of return of Portfolio 2:
 $k_2 = \text{Risk free rate} + \beta_2 (\text{Risk premium}_2 - \text{Risk free rate})$
 $= 5\% + 0.7 (10\% - 5\%)$
 $= 8.5\%$
- (iii) Portfolio 2, because the expected rate of return of 11% is higher than its required rate of return of 8.5%.
- (d) Beta = Covariance of stock returns to market returns/variance of market return.
 $= 2/1.5$
 $= 1.33$
- (e) (i) The slope of the Security Market Line (SML) can change because of a change in the attitudes of investors towards risk. It implies a change in the risk premiums.
- (ii) The parallel shift of the SML occurs due to changes in market conditions such as “ease”, “tightness” of money or a change in the expected inflation rate.
- (d) Fundamental analysis aims to arrive at the real (intrinsic) value of a stock. It involves the analysis of a company’s fundamental values, e.g. business and earnings prospects, dividend payments and asset values.
- Technical analysis involves the examination of past market data, such as prices and volume of trading, which leads to an estimate of future price. A technical analyst ignores the fundamental factors almost completely and is only concerned with the forces of demand and supply for the stock.

Question 3

- Candidates displayed good understanding on the reasons behind a bond's yield-to-maturity level.
- Candidates gave poor explanation on the features that affect the maturity of a bond.
- Candidates were unable to state all the five variables used in the Black-Scholes' Model to value the call option of a non-dividend paying stock.
- Candidates need to have a better understanding of the bond features in order to describe them more concisely.

3. (a) (i) As an AAA-rated bond, Bond B has a lesser risk of default as compared to Bond A. Therefore, it offers a lower yield.
- (ii) Bond D has a longer tenor. Therefore, investors would demand a premium because uncertainty increases with time and long-term bonds are more sensitive to interest rate fluctuations than short-term bonds.
- (iii) Bond E is callable and less liquid compared to Bond F.
- (b) (i) Non-callable provision
Under this provision, the issuer cannot retire the bond prior to its maturity.
- (ii) Non-refunding provision
This provision prohibits a call and premature retirement of an issue from the proceeds of a lower-coupon refunding bond.
- (iii) Sinking fund
A sinking fund provision specifies that a bond must be paid off systematically over its life rather than only at maturity. It is an obligation and must be carried out regardless of market conditions.
- (c) (i) Straddle
(ii) Strip
(iii) Strap
- (d) • The price of the underlying stock;
• The exercise price of the option;
• The time remaining to the expiration of the option;
• The interest rate; and
• The variability of the underlying stock price.

Question 4

- Candidates demonstrated a good understanding on the causes of an increase or decrease in the return of equity.
- Candidates displayed poor calculation of the financial ratios.
- Candidates need to understand the use of the financial ratios instead of merely memorising the formulas.

4. (a) (i) (aa) Operating margin
= Earnings before interest and tax/Turnover
= RM(68,436,000 / 317,935,000)
= 21.53%

- (bb) Asset turnover
= Sales / Total Assets
= RM[317,935,000 / (309,259,000+208,328,000)]
= 0.614x
- (cc) Interest expense rate
= Interest expense/ Total Assets
= RM(11,583,000/ 517,587,000)
= 2.24%
- (dd) Financial leverage multiplier
= Total Assets / Equity
= RM(517,587,000 / 155,463,000)
= 3.33x
- (ee) Tax retention rate
= (1 – effective tax rate)
= [1 – (4,572,000/56,802,000)]
= 1-0.08
= 0.92 → 92%
- (ii) ROE = (Operating margin x Asset turnover- Interest expense rate) x Financial leverage multiplier x Tax retention rate
= (0.2153 x 0.614 – 0.0224) x 3.33 x 0.92
= 0.336 → 33.6%
- (b) (i) Increase
(ii) Decrease
(iii) Decrease
(iv) Increase
(v) Decrease
- (c) American options permit the holder to exercise them any time up to and including the expiration day. European options permit the holder to exercise them only on the expiration day.
- (d) A long straddle refers to a pair of long call and long put at the same strike price.

Question 5

- Candidates were well versed in the benefits of the Central Depository System to listed companies.
- Candidates displayed poor knowledge with regard to the obligations of Bursa Malaysia as a self-regulatory organisation.
- Candidates need to ensure that they have the knowledge on the role of various authorities in the local financial industry.

5. (a) • To establish and operate a system for the central handling of securities, whether or not they are listed on any stock exchange.
• To increase the capacity of the clearing and settlement of securities.
• To reduce the costs and risks of settlement of securities.
• To enhance the liquidity and efficiency of the Malaysian capital market.
• To promote Malaysia's competitiveness by complying with the latest international standards for the settlement and clearing of securities.
- (b) • Savings in registration costs.

- Efficient retrieval and up-to-date knowledge of the actual beneficial shareholders and their holdings.
 - Automatic registration system.
- (c) Designated securities are listed securities which in the opinion of the Exchange Committee have been manipulated or have excess speculation.
- (d) (i) False
(ii) True
(iii) True
- (e) *(Choose any five of the following):*
- To provide, regulate and maintain facilities for conducting the business of stock exchange in Malaysia.
 - To promote and protect the interests and welfare of the members of the Exchange.
 - To provide an authority for the interpretation and means for the enforcement of the rules relating to member companies on the stock exchange and to undertake arbitration between members by the Committee of the Exchange.
 - To establish just and equitable principles in the securities market.
 - To make and amend from time to time rules relating to member companies, and for trading by member companies.
 - To provide investors' service and to promote interest in the securities market as a whole.
 - To promote the commerce and industries of Malaysia and to augment to facilities with which it may be conducted.
 - To provide and enact listing requirements and undertakings relating to listed companies and to enunciate and enforce the Code for Mergers, Takeovers and Acquisitions.
 - To institute a policy of market surveillance and corporate disclosure.
- (f) The Securities Commission provides regulations and advises the Minister of Finance on all matters relating to securities and futures contracts industries.