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Module 7 – Financial Management

This examination is divided into TWO sections.

- Section A (20%). This consists of TEN compulsory multiple choice questions. You should allocate approximately 36 minutes in total for Section A.
- Section B (80%). This consists of FOUR compulsory written questions. You should allocate approximately 2 hours and 24 minutes in total for Section B.

Suggested time allocation (by marks):

Marks	Approximate time in minutes
1	2
2	3
3	5
4	7
5	9
6	11
7	12
8	14
9	16
10	18
11	20
12	21
13	23
14	25
15	27
16	29
17	30
18	32
19	34
20	36

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SECTION A – MULTIPLE CHOICE QUESTIONS (Total 20 marks)

Answer **ALL** questions in this section. Choose the best answer for each question. Together they are worth 20% of the total marks for this examination.

Questions 1 to 10 carry 2 marks each. (20 marks – approximately 36 minutes)

1. Assume the returns on Stock HD were positive in January, March, May, June, July and November. The other months the returns on Stock HD were negative. The returns on Stock LD were positive in January, February, May, July, September, November and December, and negative in the remaining months.

Analyse which one of the following correlation coefficients best describes the relationship between Stock HD and Stock LD.

- A -1.0.
 - B -0.5.
 - C 0.0.
 - D 1.0.
2. Slow Growth Company is currently paying an annual dividend of HK\$2.50 per share. The company is experiencing financial recession and going to downsize its outdated operations. The company is decreasing its dividend by 3% annually.

Determine what is the current value of this stock at a discount rate of 9.5%.

- A HK\$19.12.
- B HK\$19.40.
- C HK\$20.23.
- D HK\$20.67.

3. Analyse which of the following are true for using the Du Pont system to determine:
- (1) the reasons why a firm's return on equity is satisfactory or unsatisfactory.
 - (2) the operating efficiency of a firm.
 - (3) the asset use efficiency of a firm.
 - (4) the rate of return on a firm's assets.
- A (2) and (3) only.
B (2), (3), and (4) only.
C (1), (2), and (3) only.
D All of the above.
4. Beauty Boutique has a total asset turnover rate of 1.25, an equity multiplier of 1.42, a profit margin of 5%, a retention ratio of 0.8, and total assets of HK\$124,500.
- Determine the company's sustainable growth rate.
- A 5.85%.
B 6.27%.
C 7.64%.
D 7.10%.
5. Playful Toys Company Limited has a new toy car model for the upcoming Christmas holiday. It is trying to determine the target cost for the toy car if the selling price per unit will be set at HK\$180, the current market price for toy cars, and the company intends to earn a target operating income of 15% of sales. Calculate the target cost per unit for the new toy car.
- A HK\$176.
B HK\$184.
C HK\$164.
D HK\$153.

6. Determine which of the following statements is correct.
- A Bonds with longer maturity are subject to less interest rate risk than bonds with shorter maturity.
 - B Zero coupon bonds are subject to more interest rate risk as compared with coupon-bearing bonds with the same maturity.
 - C Bonds with higher coupon rate are subject to more interest rate risk than those with lower coupon rate.
 - D If interest rates raise, bond prices will decrease, and the falling prices will be more significant for bonds with less interest rate risk.

7. Companies "Debts (D)" and "Equities (E)" are both profitable, and they have the same total assets, sales revenue, return on assets, and profit margin. However, Company D uses more debt finance for its business operations.

Determine which of the following statements is correct.

- A Company E has a greater total assets turnover than Company D.
- B Company E has more operating profits than Company D.
- C Company E has lower fixed assets turnover than Company D.
- D Company E has a lesser return on equity than Company D.

8. Determine which of the following will occur if the required rate of return equals the internal rate of return.
- A The net present value will be larger than zero.
 - B The profitability index will equal 1.0.
 - C The profitability index will equal zero.
 - D The average accounting return will equal zero.

9. Speedy Delivery requires an accounting rate of return ("ARR") of at least 18% on all non-current asset acquisitions. The company is now considering purchasing some new delivery trucks costing HK\$158,000. These delivery trucks are estimated to have a four-year economic useful life and will be depreciated on a straight line basis to a zero residual value. The forecasted annual net incomes generated from those delivery trucks are HK\$8,500, HK\$12,300, HK\$18,900, and HK\$16,200 for the four coming years.

Justify whether the acquisition should go ahead based on the capital budgeting appraisal technique of the accounting rate of return.

- A Yes; because the ARR is less than 18%.
 - B Yes; because the ARR is greater than 18%.
 - C No; because the ARR is equal to 18%.
 - D No; because the ARR is less than 18%.
10. Determine which of the following statements is correct in relation to price-earnings ("P/E") ratio.
- A High P/E ratio implies that general market participants expect a company to have promising growth prospects.
 - B The higher the earnings per share ("EPS"), the higher the P/E ratio.
 - C A company's choice of accounting methods will not impact on its P/E ratio.
 - D A P/E ratio of 22 means investors are willing to pay HK\$1 for every HK\$22 of profits currently generated by a company.

* * * END OF SECTION A * * *

SECTION B – WRITTEN QUESTIONS (Total: 80 marks)

Answer ALL questions in this section. Marks are indicated at the end of each question. Together they are worth 80% of the total marks for this examination.

Question 1 (20 marks – approximately 36 minutes)

When Smart Investments Company Limited ("Smart Investments") formed three divisions a year ago, the President informed the division managers that an annual bonus would be rewarded to the most profitable division, assessed by either the return on investment ("ROI") or residual income ("RI") of the division.

All the assets are long-lived operating assets that were acquired 15 years ago and have 15 years of useful life remaining with a zero terminal disposal value. Smart Investments' minimum required rate of return used for determining RI is 15%.

Budgeted operating performances for 2019 for each of the three investment divisions are as follows:

Divisions	Operating Income (HK\$)	Operating Assets (HK\$)
A - Stocks & Bonds	15,000,000	100,000,000
B - Derivatives	25,000,000	125,000,000
C - Real Properties	11,000,000	50,000,000

Smart Investments is considering a new renovation project to modernise aging facilities of the corporate by purchasing new sets of equipment for each of the three investment divisions. The new equipment is expected to cost HK\$25,000,000 for each Division, which supports the corporate strategy of competing on the basis of quality service and customer response timing. The new investment is also expected to increase the operating income of each Division by HK\$4,500,000 next year, which is an acceptable return on investment from the standpoint of the corporate management.

Required:

- (a) **Determine the current ROI and RI for each division.** (3 marks)
- (b) **Construct new divisional ROI and RI after incorporating the renovation project for each division.** (3 marks)
- (c) **Assuming the Division Managers are assessed by either ROI or RI, explain briefly which Division(s) is / are pleased with the new project and which one(s) is / are NOT.**

Justify which performance measure, ROI or RI, is more appropriate in appraising the renovation plan for the goal congruence of the Smart Investments as a whole. (4 marks)

- (d) **"Economic Value Added (EVA®) is a specific form of RI with adjustments to correct accounting numbers distortion, as developed by the consulting firm [Stern Stewart & Co.], to measure a firm's economic profit rather than accounting profit in a given year."**

Compare and contrast EVA® with RI.

(5 marks)

- (e) **All companies face risk; risk and reward are correlated. Too much risk can lead to business failure. In particular, companies operating in the investment industry rely heavily on risk management to bear market crashes.**

Justify why effective risk management can add value to any organisation, and outline any three financial risk management approaches to address risk.

(5 marks)

Question 2 (20 marks – approximately 36 minutes)

As one of the active social media platform users nowadays, you are interested in learning some of the basic company's backgrounds of the two famous internet platform investment stocks, WeTalk and FacePage. You found that over 900 million people are using WeTalk, the free messaging & calling app that allows connecting with family & friends across countries boundlessly. It's an all-in-one communications app for free text (SMS/MMS), voice & video calls, moments, photo sharing, games and more. On the other hand, FacePage is a social networking platform where users can post comments, share photographs and links to news or other interesting content on the Web, play games, chat live, and even stream live video.

You are going to apply your finance knowledge in the real investment world by assessing the risk and return of the two internet platform stocks, WeTalk and FacePage with the following information:

<u>State of Economy</u>	<u>Probability of State of Economy</u>	<u>Rate of return if state occurs</u>	
		<u>WeTalk</u>	<u>FacePage</u>
Recession	20%	5%	-13%
Booming	50%	19%	22%
Normal	30%	16%	15%

The expected return on the market is 13%, and the rate of return on U.S. Treasury Bill is currently yielding 3%.

Required:

- (a) **Compute the expected returns and beta coefficients of each individual stock, WeTalk and FacePage respectively.**
(4 marks)
- (b) **From the answers obtained in part (a), calculate the total risk for both WeTalk and FacePage correspondingly.**
(4 marks)
- (c) **From the above results computed in parts (a) and (b), analyse which stock, WeTalk or FacePage, is riskier and thus, should have a higher risk premium and greater expected return.**
(4 marks)
- (d) **Your friend, Peter, used to make investment decisions with reference to charts and diagrams of historical past stock prices data and trends. Analyse which form of the Efficient Market Hypothesis ("EMH") is being adopted by your friend, Peter.**

State different forms of EMH and briefly describe their associated predictions about the future share price forecast to beat the market. Determine the form of EMH for the Hong Kong Stock Exchange accordingly.

(8 marks)

Question 3 (20 marks – approximately 36 minutes)

The HighTek Company ("HighTek") is a renowned manufacturer and distributor of electronic devices for mobile phones. Thanks to some successful new products marketed to manufacturers of 5G mobile phones, HighTek has recently been experiencing a period of explosive growth with its sales revenues more than doubling over the last two years. However, this growth has been coupled with a significant decline in profitability and a sharp plunge in HighTek's share price.

Rosanna, a financial consultant, is approached to analyse HighTek's financial performance and find out the reasons behind the situation before advising any remedial actions. The investigative plan involves conducting a series of in-depth interviews with the company's management team and performing some independent research on the industry's average performance. After determining the key ratios for the past three years, Rosanna starts by analysing trends in each ratio and compares each of them with the industry players as shown below:

	Ratio Analysis of the HighTek Company			
	Industry			
	<u>Average</u>	<u>20X1</u>	<u>20X2</u>	<u>20X3</u>
Current Ratio	4.6	4.1	4.6	5.3
Quick Ratio	3.2	2.9	3.8	4.0
Average Collection Period	42 days	40 days	60 days	68 days
Inventory Turnover	7.5X	7.0X	6.0X	5.0X
Fixed Asset Turnover	1.6X	1.7X	1.6X	2.1X
Total Asset Turnover	1.2X	1.3X	1.5X	1.6X
Debt Ratio	53%	56%	66%	75%
Debt to Equity Ratio	1:1	1.1:1	1.8:1	2.1:1
Times Interest Earned	4.5X	5.5X	3.3X	1.8X
Return on Assets (ROA)	10.8%	15.0%	7.1%	3.0%
Return on Equity (ROE)	23.3%	33.5%	21.9%	12.0%
Equity Multiplier	2.1	2.3	2.9	3.3

Required:

(a) **You are Rosanna Lee, the financial consultant. From the available financial information, analyse the financial performance and justify messages or reasons behind the following aspects of the HighTek Company with reference to the industry average over the past three years in a memorandum format addressed to the company:**

- (i) **Liquidity;** (2 marks)
- (ii) **Asset management (especially receivables and inventories);** (4 marks)
- (iii) **Debt management and long-term solvency; and** (4 marks)
- (iv) **Profitability.** (4 marks)

Note: 1 mark to be awarded for proper memorandum format with logical presentation.

(b) **Setting a price for products is one of the most important decisions in business. It has a significant impact on profitability and thus can be a decisive factor in the financial success or failure of a business.**

Determine different pricing objectives for a company when setting a pricing strategy for its new product.

(5 marks)

Question 4 (20 marks – approximately 36 minutes)

Ulbar Technology Company Limited ("UTC") is planning to invest in a potential project, "Water Taxi". The risks associated with the project "Water Taxi" are comparable to the risks of UTC's current operations. The proposed project will incur an initial cost of HK\$17.2 million that will be depreciated on a straight-line basis over ten years. The project also requires additional expenditure for repairs and maintenance of HK\$678,000 annually over the project's life. Management estimates that the project will generate cash inflows of HK\$4.78 million a year over its 10-year life. The initial investment will be depreciated on a straight line basis over the life of the project. At the end of the ten years, the firm expects to sell the trucks and facilities for HK\$1.3 million.

You are the Chief Financial Officer of UTC estimating the discount rate, which is the cost of capital, for capital budgeting appraisal. The financial information of UTC with related market information are given below:

Common stock: There are 285 million shares outstanding selling for HK\$26.50 per share. The stock has a beta coefficient of 1.65.

Preferred stock: 35 million shares selling at HK\$75 per share, with dividend rate of 4.5% and face value of HK\$100.

Debt: Five years ago, the company issued 5 million 15-year annual coupon bonds with par value of HK\$1,000 each that are still outstanding now. Its coupon rate is 6%. The total market value of the coupon bonds are currently selling at HK\$4,699,417,007.

Market: The current U.S. Treasury Bill yields 3% and the expected return on the market is 9.5%. The company is in the 35% corporate tax bracket.

Required:

- (a) **Compute the cost of equity (R_E), cost of preferred stock (R_P) and pre-tax cost of debt (R_D) for UTC.** (5 marks)
- (b) **Assuming that UTC is going to maintain the current capital structure, compute the weighted average cost of capital ("WACC") for the company.** (4 marks)
- (c) **Produce the forecast cash flows generated in Year 10, in the form of a pro-forma statement of profit or loss, for project "Water Taxi" of UTC.** (6 marks)
- (d) **Based on result in part (c), calculate the net present value ("NPV") (in whole dollar amount) of Project "Water Taxi", and determine whether UTC should be accepted or rejected accordingly.** (5 marks)

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Module 7

Financial Management



Answers



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SECTION A – MULTIPLE CHOICE QUESTIONS (Total: 20 marks)

Questions	Answers	Marks allocation
1.	C	2
2.	B	2
3.	D	2
4.	C	2
5.	D	2
6.	B	2
7.	D	2
8.	B	2
9.	D	2
10.	A	2

* * * END OF SECTION A * * *

SECTION B – WRITTEN QUESTIONS (Total: 80 marks)

Answer 1(a)

Current ROI

$$\text{Division A} = \text{HK\$}15,000,000 \div \text{HK\$}100,000,000 = 0.15$$

$$\text{Division B} = \text{HK\$}25,000,000 \div \text{HK\$}125,000,000 = 0.20$$

$$\text{Division C} = \text{HK\$}11,000,000 \div \text{HK\$}50,000,000 = 0.22$$

Current RI

$$\text{Division A} = \text{HK\$}15,000,000 - (\text{HK\$}100,000,000 \times 0.15) = \text{HK\$}0$$

$$\text{Division B} = \text{HK\$}25,000,000 - (\text{HK\$}125,000,000 \times 0.15) = \text{HK\$}6,250,000$$

$$\text{Division C} = \text{HK\$}11,000,000 - (\text{HK\$}50,000,000 \times 0.15) = \text{HK\$}3,500,000$$

Answer 1(b)

New ROI

$$\text{Division A} = \text{HK\$}19,500,000 \div \text{HK\$}125,000,000 = 0.156$$

$$\text{Division B} = \text{HK\$}29,500,000 \div \text{HK\$}150,000,000 = 0.197$$

$$\text{Division C} = \text{HK\$}15,500,000 \div \text{HK\$}75,000,000 = 0.207$$

New RI

$$\text{Division A} = \text{HK\$}19,500,000 - (\text{HK\$}125,000,000 \times 0.15) = \text{HK\$}750,000$$

$$\text{Division B} = \text{HK\$}29,500,000 - (\text{HK\$}150,000,000 \times 0.15) = \text{HK\$}7,000,000$$

$$\text{Division C} = \text{HK\$}15,500,000 - (\text{HK\$}75,000,000 \times 0.15) = \text{HK\$}4,250,000$$

Answer 1(c)

All the three divisional managers would likely be pleased if RI were used because residual income increases after the renovation. On the other hand, given divisional ROI were employed to evaluate performance, then only the manager of Division A would be pleased to undertake the new renovation project as only ROI of Division A would increase.

More often, RI is more appropriate to be used as a performance measure than ROI since it prompts managers to accept investment projects that have higher rates of return than the cost for its invested capital.

Divisional managers being evaluated using ROI may not be willing to accept new investments that will decrease their existing ROI, despite the fact that the investments would be more desirable for the long term development of the whole corporate.

Answer 1(d)

Unlike ROI measures return in relative terms, both EVA® and RI is an absolute performance measure that does not allow a clear comparison of performance between divisions.

Both EVA® and RI are measures for the residual income focus on wealth creation. On the one hand, the RI based on the internal usage of operating assets, which only points to residual income above the current usage of these operating assets. On the other hand, the 'real' residual income, however, is best measured by the EVA®, as it takes WACC into consideration instead of the minimum required return assessed by RI. Therefore, EVA® is more useful to shareholders as it allows real cost comparisons.

EVA® involves more sophisticated computation than RI with many more accounting policies adjustments for operating income and net operating assets to get the amounts for ROI and RI, as shown in the Stern Stewart's classic book on EVA® with approximately 160 such adjustments to rectify the reported accounting data. In addition, EVA® takes tax concerns into consideration when calculating income and cost of capital (WACC). Thus, EVA® is more directly relevant to the objective of maximising owners' wealth, and in return, should enable goal congruence between the divisional and corporate goals to be achieved in a more efficient manner.

Answer 1(e)

An effective risk management system is crucial to be well established to protect an organisation's capital structure and profit generating ability without hindering growth. Investors are more willing to invest in corporates with sound risk management practices that generally result in easier access to funding with lower borrowing costs and improved financial performance.

There are four major financial risk management approaches as shown below:

- Avoidance of risk
- Risk mitigation
- Transfer of risk
- Risk acceptance

Answer 2(a)

$$E[R_{WeTalk}] = 0.20(0.05) + 0.50(0.19) + 0.30(0.16) = 0.153$$

$$E[R_{FacePage}] = 0.20(-0.13) + 0.50(0.22) + 0.30(0.15) = 0.129$$

$$E[R_{WeTalk}] = 0.153 = 0.03 + (0.13 - 0.03)\beta_{WeTalk}$$
$$\beta_{WeTalk} = 1.23$$

$$E[R_{FacePage}] = 0.129 = 0.03 + (0.13 - 0.03)\beta_{FacePage}$$
$$\beta_{FacePage} = 0.99$$

Answer 2(b)

$$\begin{aligned}\sigma^2_{\text{WeTalk}} &= 0.20(0.05 - 0.153)^2 + 0.50(0.19 - 0.153)^2 + 0.30(0.16 - 0.153)^2 \\ &= 0.002821 \\ \sigma_{\text{WeTalk}} &= [0.002821]^{1/2} = 0.0531 \text{ (or 5.31\%)}\end{aligned}$$

$$\begin{aligned}\sigma^2_{\text{FacePage}} &= 0.20(-0.13 - 0.129)^2 + 0.50(0.22 - 0.129)^2 + 0.30(0.15 - 0.129)^2 \\ &= 0.017689 \\ \sigma_{\text{FacePage}} &= [0.017689]^{1/2} = 0.133 \text{ (or 13.3\%)}\end{aligned}$$

Answer 2(c)

Although stock FacePage has more total risk than WeTalk, it has much less systematic risk, since its beta is much smaller than WeTalk's. WeTalk has more systematic risk, and FacePage has more unsystematic and more total risk.

Since unsystematic risk can be diversified, WeTalk is actually the "riskier" stock despite the lack of volatility in its returns. As a result, stock WeTalk should have a higher risk premium and a greater expected return.

Answer 2(d)

Peter's investment approach follows weak-form efficiency of the Efficient Market Hypothesis (EMH).

Weak-form efficiency:

If weak-form efficiency holds, then technical analysis is of no use, and the efforts of technical analysts are of no benefit to investors to beat the market.

Semistrong-form efficiency:

If semistrong-form efficiency holds, then fundamental analysis using publicly available information is of no benefit, and most of the financial analysts and mutual fund managers are not providing any value to beat the market.

Strong-form efficiency:

If strong-form efficiency holds, then the current stock price reflects all information, public as well as private, and investors will not be able to earn excess returns to beat the market as a result.

The Hong Kong Stock Exchange is generally regarded as following semistrong-form efficiency fashion.

Answer 3(a)

To: HighTek Company
From: Rosanna Lee, Financial Consultant of HighTek
Date: 8 September 20X4
Re: Financial Performance of HighTek Company

(i) **Liquidity**

The liquidity situation of the company appears to be healthy and improving, as evidenced by the increasing current and quick ratios over the past three years. However, it may be a misleading indication. If trade receivables and inventories have been long overdue or have been piling up, current assets would also be overstated to present an overly high current and quick ratios as shown.

(ii) **Assets management**

The average collection period of the trade receivables of the company is lengthened dramatically. This is a bad signal to indicate that the company is probably selling to a group of poor credit-worthiness rated customers on credit. The situation also echoes the deteriorating revenue growth over the past three years. Loose credit stimulates sales, but may be bad for profitability. There is a high possibility to have the long overdue accounts and likely uncollectible receivables balance that support the inference of the improved misleading liquidity position mentioned above.

On the other hand, inventory turnover is declining which shows another bad sign that obsolete inventories tend to be piled up and rapidly become valueless, especially when applied to the digital products industry.

Fixed asset turnover appears to be improving slightly which alleviates the worry of purchasing too many fixed assets during the period of rapid growth of the business. Total asset turnover ratio also looks good even after considering a possible overstatement of some current assets.

(iii) **Debt management and long-term solvency**

The trend in the debt ratio and the debt to equity ratio over the past three years could be in trouble. The company is funding its growth by borrowing rather than through internally generated funds or by raising new equity. The increase in these debt management ratios signifies the company is borrowing faster than its growth. It implies risk is increasing fast with the interest expenses burden. Lenders are reluctant to advance further funding very soon, as more than two-thirds of total equity are occupied by debt elements which is generally considered to be quite risky. Equity finance is more appropriate, despite the fact that depressed share price makes that a tough pill to swallow.

The decreasing times interest earned ratio puts the long-term solvency situation of the company in danger. The adverse impact of increased debts and interest expenditure are compounded by the falling off of the operating profits over the years. It echoes the market reaction to the company's leverage problem as reflected in its slumping share price.

The increasing equity multiplier ratio is another way to look at the same problem as a heavy leverage burden. Leverage works best for a firm when experiencing high profitability, whereas it hurts when undergoing bad performance. The financial results of HighTek are poor and getting worse, the high level of debt finance imposes a significant threat to its long-term solvency.

(iv) Profitability

The trend that the two profitability ratios, ROA and ROE, reflect the net result of every aspect evaluated above. Notice that ROE still remains to be 12% which seems to be an acceptable return.

However, after a closer investigation, it is not due to the fact that there is a high level of risk inherent in the industry in general, and in this company in particular, as compared with the industry average ROE of about 23%. The profitability performance of HighTek is far below the generally expected ones within the industry, despite the explosive growth over the years.

Answer 3(b)

Determining a pricing strategy should not be carried out in isolation but in relation to the general business objectives, and link it to a company's marketing and sales plans. Common pricing objectives include:

- Maximising short or long term profit;
- Increasing sales volume, sales revenue, or market share;
- Achieving a specific rate of return on sales or investment;
- Achieving or maintaining price leadership;
- Matching competitors' prices or gaining a competitive advantage;
- Enhancing the image of the business, product, or service; and
- Surviving in a challenging market place.

[Or any other reasonable answer / explanation]

Answer 4(a)

$$R_E (\text{SML}) = 3\% + 1.65 (9.5\% - 3\%) = 13.73\%$$

$$R_P = \text{HK\$}100 \times 4.5\% / \text{HK\$}75 = 6\%$$

$$\text{HK\$}4,699,417,007 = \text{HK\$}300,000,000 \times \text{PVIFA}_{(R_D, 10)} + \text{HK\$}5,000,000,000 \times \text{PVIF}_{(R_D, 10)}$$
$$R_D = 6.85\%$$

Answer 4(b)

$$E = 285\text{m} \times \text{HK}\$26.5 = \text{HK}\$7,552,500,000$$

$$P = 35\text{m} \times \text{HK}\$75 = \text{HK}\$2,625,000,000$$

$$D = \text{HK}\$4,699,417,007$$

$$V = \text{HK}\$7,552,500,000 + \text{HK}\$2,625,000,000 + \text{HK}\$4,699,417,007 \\ = \text{HK}\$14,876,917,007$$

$$W_E = E/V = \text{HK}\$7,552,500,000 / \text{HK}\$14,876,917,007 = 50.77\%$$

$$W_P = P/V = \text{HK}\$2,625,000,000 / \text{HK}\$14,876,917,007 = 17.64\%$$

$$W_D = D/V = \text{HK}\$4,699,417,007 / \text{HK}\$14,876,917,007 = 31.59\%$$

$$\text{WACC} = 50.77\% \times 13.73\% \\ + 17.64\% \times 6\% \\ + 31.59\% \times 6.85\% (1 - 35\%) \\ = 9.44\%$$

Answer 4(c)

Forecasted cash flow for Year 10

	HK\$
Revenue/Cash inflows	4,780,000
Less: Repairs and maintenance expenses	678,000
Depreciation (HK\$17.2m/10yrs)	<u>1,720,000</u>
Earnings before tax	2,382,000
Less: Tax (35%)	<u>833,700</u>
Earnings after tax	1,548,300
Add: Depreciation	<u>1,720,000</u>
Operating cash flow	3,268,300
Add: Other cash flow – Residual value of the truck	<u>1,300,000</u>
Net cash flow	<u>4,568,300</u>

Answer 4(d)

Use the WACC (9.44%) determined in part (c) as the required rate of return to discount the relevant cash flows.

$$\text{NPV} = - \text{HK}\$17,200,000 \\ + \text{HK}\$3,268,300 \times \text{PVIFA}_{(9.44\%, 9)} \\ + \text{HK}\$4,568,300 \times \text{PVIF}_{(9.44\%, 10)} \\ = \text{HK}\$3,902,096$$

=> As the NPV of the project is positive, the project should be accepted.

* * * END OF EXAMINATION PAPER * * *