



Hong Kong Institute of  
**Accredited Accounting Technicians**  
香港財務會計協會

# Professional Bridging Examination

## Paper II PBE Management Accounting and Finance

### December 2011 Session (Questions)

Time Allowed	3 hours
Examination Assessment Allocation	
• Section A – All TWO questions are compulsory	40 Marks
• Section B – Answer 3 out of 4 questions	60 Marks

## PAPER II – PBE MANAGEMENT ACCOUNTING AND FINANCE

This examination is divided into TWO sections.

- Section A (40%). This consists of TWO compulsory questions. You should allocate approximately 1 hour 12 minutes in total for Section A.
- Section B (60%). This consists of four questions, of which you must answer THREE questions only. Each of these three questions is worth 20% of the total marks (making Section B worth 60% of the total marks). You should allocate approximately 36 minutes for each question (that is, 1 hour 48 minutes in total for Section B).

Suggested Time Allocation (by marks):

Marks	Approximate time (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

**SECTION A (COMPULSORY) (Total: 40 marks)**

Answer **ALL** questions in this section. Marks are indicated at the end of each question. Together they are worth 40% of the total marks for this examination.

**CASE**

AAT Hotel is an international hotel chain with operations in mainland China, Hong Kong, Europe, and North America. You are the corporate chief management accountant leading a team of management accountants to study its food and beverage pricing and strategy for its Food Department and Beverage Department in Hong Kong.

On average, its Food Department and Beverage Department generates HK\$1,500,000 and HK\$500,000 revenue per month respectively. The variable costs are HK\$825,000 for the Food Department and HK\$200,000 for the Beverage Department. Fixed costs for the two departments total HK\$850,000 per month.

The hotel chain has a corporate marketing department. They are formulating a new card benefit program by introducing an AAT Card. The cardholder is entitled to various benefits offered by AAT Hotel. In particular, discounts offered at various restaurants and a discount for hotel stay.

The discount program offers vary with the number of diners, including the cardholder and guest. Details of the discount program are shown in the following table:

Number of diners (include cardholder and guests)	Discount offered per table (%)
1	10
2	50
3	33
4	25
5	20
6 to up to 12	15

The corporate marketing department suggested charging an annual fee of HK\$3,000 to each AAT card holder. Currently each meal at AAT Hotel is about HK\$600 per person on average.

The corporate marketing department just finished a meal forecasting study for its hotel in Wanchai. It built an equation stating the relationship between the number of guest nights<sup>1</sup> (X) and the number of restaurant meals, including breakfast, lunch and dinner (Y).

	Guest Nights (X)	Meals Served (Y)
January	6,102	7,822
February	6,309	7,544
March	6,384	8,021
April	6,501	8,299
May	6,498	8,344
June	6,382	8,245
July	6,450	8,311
August	6,522	8,274
September	6,608	8,328
October	6,502	8,188
November	6,274	7,985
December	5,811	7,502
Total:	<u>76,343</u>	<u>96,863</u>

The equation is

$$Y = 706.16 + 1.16X$$

*Note:*

<sup>1</sup> Number of guest nights equal to number of guests times number of nights stayed by them. If a guest stays for 2 nights, the number of guest nights is 2.

**Question 1** (20 marks – approximately 36 minutes)

- (a) Calculate the breakeven revenue for the (i) Food Department and (ii) Beverage Department respectively. (4 marks)
- (b) Corporate management would like to have a HK\$500,000 increase in net profit. This could be achieved by increasing in food sales, beverage sales or both.
- (i) If the increase in net profit is achieved by an increase in food sales, what is the corresponding amount in sales revenue of the Food Department? (3 marks)
- (ii) If the increase in net profit is achieved by an increase in beverage sales, what is the corresponding amount in sales revenue of the Beverage Department? (3 marks)
- (iii) If the increase in net profit is achieved by an increase in both food and beverage sales, what are the respective amounts in food sales revenue and beverage revenue? (2 marks)
- (iv) From the results in part (i) to (iii), which option is preferred? State briefly your reasons. (3 marks)

- (c) By using the equation given by the corporate marketing department, forecast the number of meals served when the number of guest nights is 6,000. Explain the significance of the y-intercept 706.16 and the slope 1.16 in the equation.

(5 marks)

**Question 2** (20 marks – approximately 36 minutes)

The chief management accountant is going to present the results of the AAT Card program to senior management.

**Required:**

- (a) Calculate the total cost of dining for one meal when a diner goes with a friend and they sit together at a table without using the AAT Card from the customers' perspectives.
- (b) Assuming you are a first-time diner, calculate the total cost of dining for one meal when you go with a friend and sit together at a table and use the AAT Card from your perspectives.
- (c) With the AAT card, find the breakeven number of visits when a diner goes with a friend and they sit together at a table (i.e. 2 diners) from the customers' perspectives.
- (d) Based on the answer from (a) to (c) above, assuming you are the chief management accountant, advise the General Manager as to whether this program is a profitable one for the hotel. Also present the advantages and disadvantages of this card program from the program perspective and the hotel perspective. You must present the result in memo format with a proper structure.
- (e) Explain the measurement framework in the Triple Bottom Line environment. What is its strategic significance?

(2 marks)

(3 marks)

(4 marks)

(8 marks)

(3 marks)

\* \* \* END OF SECTION A \* \* \*

**SECTION B (ANSWER THREE QUESTIONS ONLY) (Total: 60 marks)**

Answer any **THREE** questions in this section. Each question carries 20 marks. Together they are worth 60% of the total marks for this examination.

**Question 3 (20 marks – approximately 36 minutes)**

PBE Company is a car washing company in Fo Tan. The existing car washing machine has been used for a number of years and its performance is deteriorating. PBE has two alternatives: to remodel the car washing machine or to install a new one. The revenue and cost information of the car washing machine on the cash basis is as follows:

	New Machine (HK\$)	Old Machine (HK\$)
Annual revenue	900,000	700,000
Annual cost	300,000	250,000
Annual net cash inflow	600,000	450,000

The new car washing machine costs HK\$3,000,000 and can be used for 10 years. Its salvage value is HK\$700,000. The machine requires replacement of brushes at the end of 6 years and the expense is HK\$500,000. If the old washing machine is sold now, it can be sold for HK\$400,000.

The existing car washing machine can be remodelled at a cost of HK\$1,750,000 but it needs to replace the brushes at the end of year 6 at a cost of HK\$800,000.

The discount rate is 10% per annum.

**Required:**

- (a) Calculate the net present value (NPV) of the new machine scenario. (5 marks)
- (b) Calculate the net present value (NPV) of the old machine scenario (assuming there is no salvage value at the end of year 10). (5 marks)
- (c) Based on your answer in part (a) and (b) above, advise management of your recommendation of preference with reasons. (2 marks)
- (d) Give TWO qualitative considerations in the decision. (4 marks)
- (e) What are the possible reasons for getting an incorrect conclusion in the above NPV analysis? (4 marks)

**Question 4** (20 marks – approximately 36 minutes)

“A Company has many stakeholders. Managing a company is never an easy task” said by a chief executive officer of a company.

**Required:**

- (a) By using an accounting equation, identify two groups of stakeholders of a company and their returns. (4 marks)
- (b) In times of economic downturn, explain why there are conflicts of interest between the stakeholders mentioned in part (a). (4 marks)
- (c) Other than the stakeholders mentioned in part (a), why does management/managers also create conflicts of interest with these stakeholders? (4 marks)
- (d) Suggest TWO ways of resolving the conflicts of interest mentioned in part (b) and (c). (6 marks)
- (e) What is corporate governance? Explain briefly. (2 marks)

**Question 5 (20 marks – approximately 36 minutes)**

A company that generates profits from its operations may consider distributing these profits to shareholders in the form of a dividend. The dividend may be in the form of cash or stock or both. Companies reporting a loss may continue to distribute a dividend while companies reporting a profit may distribute no dividend.

**Required:**

- (a) What are the TWO main returns from investment in stocks? Explain why it may be difficult to gain one of these two returns in a year. Give one possible reason. (4 marks)
- (b) Explain the meaning of residual dividend policy. (4 marks)
- (c) Briefly explain TWO reasons why companies may distribute high dividends to shareholders. (4 marks)
- (d) Briefly explain TWO reasons why companies may distribute low dividends to shareholders. (4 marks)
- (e) William Electronics just announced that they distributed an annual dividend of HK\$2 and the dividend is expected to increase annually by 2% perpetually. If the required return is 14.5%, what is the current price of the stock? (4 marks)



**Question 6 (20 marks – approximately 36 minutes)**

East Coast International is a carpark management company in Hong Kong. It leases empty land from the government and converts it into temporary car parks. In one of its car parks, the annual rent is HK\$3.336 million. There are 2 staffs in each shift and there are two shifts per day. The company follows the government's new minimum wage requirement and the hourly wage of the staff is HK\$28. Employers are required to contribute 5% of the monthly salaries to the mandatory provident fund. It is estimated that the monthly operating cost, excluding staff costs, is HK\$10,000 per month. The car park has 200 parking spaces for private cars. The directors of East Coast International were approached by some investment bankers recently and discussed the possibility of listing on the Stock Exchange.

**Required:**

- (a) Calculate the annual expense borne by this car park. (6 marks)
- (b) What is the monthly cost borne by each private car if all costs are covered? (2 marks)
- (c) If the company wants to make a 20% profit from its cost, what should be the monthly rent charged to each private car? (2 marks)
- (d) Describe TWO other qualitative factors in determining the monthly rent charged to the private car. (4 marks)
- (e) Explain why some companies prefer to be listed on the Stock Exchange, while some do not. Discuss the pros and cons. (6 marks)

\* \* \* END OF EXAMINATION PAPER \* \* \*

## Formula Sheet

### Effective Annual Rate:

$$EAR = \left(1 + \frac{r}{m}\right)^M - 1 \quad EAR = e^r - 1$$

### Present Values:

Ordinary annuity:  $PV = C \left( \frac{1 - (1+r)^{-T}}{r} \right)$

Growing annuity:  $PV = \left( \frac{C_1}{r-g} \right) \left[ 1 - \left( \frac{1+g}{1+r} \right)^T \right]$

Constant perpetuity:  $PV = \frac{C}{r}$

Growing perpetuity:  $PV = \frac{C_1}{r-g}$

### IRR:

$$NPV = 0 = -C_0 + \frac{C_1}{(1+IRR)} + \frac{C_2}{(1+IRR)^2} + \frac{C_3}{(1+IRR)^3} + \dots + \frac{C_T}{(1+IRR)^T}$$

### Expected Return, Variance, Covariance, and Correlation Coefficient:

$$\bar{R} = \sum_{i=1}^S p_i R_i \quad \sigma^2 = \sum_{i=1}^S p_i (R_i - \bar{R})^2 \quad \sigma_{AB} = \sum_{i=1}^S p_i (R_{Ai} - \bar{R}_A)(R_{Bi} - \bar{R}_B) \quad \rho_{AB} = \frac{\sigma_{AB}}{\sigma_A \sigma_B}$$

$$\bar{R}_p = X_A \bar{R}_A + X_B \bar{R}_B \quad \sigma_p^2 = X_A^2 \sigma_A^2 + X_B^2 \sigma_B^2 + 2X_A X_B \sigma_{AB}$$

### Beta (or $\beta$ ):

$$\beta_i = \frac{\text{Cov}(R_i, R_M)}{\sigma_{R_M}^2}$$

### Capital Structure - MM II (with corporate taxes):

$$r_s = r_0 + \frac{B}{S} (r_0 - r_B)(1 - T_c)$$

### Miller-Orr Model

$$Z = [(3 \times TC \times V) / (4 \times R)]^{1/3} + L$$

$$H = 3Z - 2L$$

**SECTION A (COMPULSORY) (Total: 40 marks)**

**Answer 1(a)**

	Food Department (HK\$)		Beverage Department (HK\$)	
Sales	1,500,000		500,000	
Variable Cost	<u>825,000</u>	55%	<u>200,000</u>	40%
Contribution margin ration	<u>675,000</u>	45%	<u>300,000</u>	60%
Sales ratio	0.75		0.25	
Average contribution margin ratio		48.75%		49.5%
Sales Breakeven	HK\$1,743,590		HK\$1,757,576	

**Breakeven revenue for Food Department = HK\$1,743,590 x 75% = HK\$1,307,692**

**Breakeven revenue for Beverage Department = HK\$1,743,590 x 25% = HK\$435,897**

**Answer 1(b)(i)**

To increase food revenue, the required increase in food sales = HK\$500,000 / 45% = HK\$1,111,111

**Answer 1(b)(ii)**

To increase beverage revenue, the required increase in beverage sales = HK\$500,000 / 60% = HK\$833,333.3

**Answer 1(b)(iii)**

To increase both food and beverage revenue, the required increase in total sales  
= HK\$500,000 / average CM ratio  
= HK\$500,000 / 48.75% = HK\$1,025,641

Required increase in food sales = HK\$1,025,641 x 75% = HK\$769,230.8, Required increase in beverage sales = HK\$1,025,641 x 25% = HK\$256,410.3

**Answer 1(b)(iv)**

Option 3 is preferred as it may be easier to achieve a HK\$500,000 increase in net profit by increasing both food and beverage sales. Merely increasing the sales from just one item is more difficult to implement in reality as customers would normally order both drinks and food.

**Answer 1(c)**

The number of meals served =  $706.16 + 6000 * 1.16 = 7,666.16$

The significance of 706.16 indicates the number of meals served in that hotel when there is no guest staying overnight. This comes from external guests. On the other hand, 1.16 indicates the number of meals consumed by a particular guest staying overnight.

**Answer 2(a)**

Without using the AAT card, the total cost for 2 diners at a table =  $HK\$600 \times 2 = HK\$1,200$

**Answer 2(b)**

Using the AAT card, the total cost for 2 diners at a table =  $HK\$600 \times 2 \times 50\% + HK\$3,000 = HK\$3,600$

**Answer 2(c)**

Using the AAT card, the breakeven number of visits for 2 diners at a table =  $HK\$3,000 / HK\$1,200 / 50\% = 5$  times

**Answer 2(d)**

To: General Manager  
From: Chief Management Accountant  
Re: AAT Card program  
Date: DDMMYY

A detailed analysis of the AAT Card Program shows that, for the 2 diners' case, customers are able to break even by visiting the restaurants 5 times a year. With less than the breakeven number of visits, our hotel can gain from the program's membership fees as customers are paying more than they should be. With more than the breakeven number of visits, our hotel will make a loss on the program's membership fee as customers are paying less than they should be.

On average, it is difficult for a customer to visit our restaurants more than 5 times a year unless that customer lives or works very close to our hotel. Even if we lose from the

program, increasing the number of customers can reduce the fixed cost per customer for the buffet meal and improve the cashflow by bringing more incremental revenue to the hotel.

XXX (name)

**Answer 2(e)**

Triple Bottom Line (TBL) is a measure of a company's social, environmental, and economic performance. TBL describes a business is involved in sustainability. TBL tell us to drop the financial bottom line as the only meaningful indicator of performance and replace it with a balanced bottom line which properly acknowledges the importance of social responsibility and environmental dimensions in order to let investors make ethical investments. TBL helps management formulate strategy with a more balanced focus on social and environmental matters.

\* \* \* END OF SECTION A \* \* \*

**SECTION B (ANSWER THREE QUESTIONS ONLY) (Total: 60 marks)**

**Answer 3(a)**

	0	1	2	3	4	5	6	7	8	9	10
Discount rate = 10%											
cost	-3,000,000										700,000
salvage of old equipment	400,000										
replace brushes						-500,000					
cash flow		600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
Total	-2,600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	1,300,000
PV	-2,600,000	545,455	495,868	450,789	409,808	372,553	56,447	307,895	279,904	254,459	501,206
NPV	HK\$1,074,384										

**Answer 3(b)**

	0	1	2	3	4	5	6	7	8	9	10
Discount rate = 10%											
remodel old machine	-1,750,000										
replace brushes											-800,000
cash flow		450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000
Total	-1,750,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000
PV	-1,750,000	409,091	371,901	338,092	307,356	279,415	-197,566	230,921	209,928	190,844	173,494
NPV	HK\$563,476										

### **Answer 3(c)**

From the results in part (a) and (b), remodelling the old machine has a NPV of HK\$563,764, which is lower than the purchase scenario with a NPV of HK\$1,074,384. The purchase option is preferred as it has a higher NPV.

### **Answer 3(d)**

Qualitative considerations include the reliability of the remodelling scheme and the performance of the new washing machine. Ease of operation of the new machine is also crucial as the use of the new machine may require retraining of existing staff.

### **Answer 3(e)**

The risks of getting an incorrect conclusion include incorrect cash flow assumptions in the calculation and the use of an inappropriate discount rate.

### **Answer 4(a)**

From the accounting equation,  $\text{Asset} = \text{Liability} + \text{Equity}$

A company is built up by having equity contributed by shareholders and liability contributed by creditors. Shareholders look for capital gains from stocks and the receipt of regular dividends while creditors look for interest returns and the repayment of principal. These two parties form the basic stakeholders of a company.

### **Answer 4(b)**

Shareholders look for higher returns and prefer risky investment projects in order to get the highest return. Creditors, on the other hand, look for a relatively stable return and prefer less risky investment projects in order to secure their returns. This difference in return and risk attitude can be evidenced from the difference in the cost of equity and cost of debt.

### **Answer 4(c)**

Management/managers include directors and employees of the companies. They earn salaries and benefits of various kinds such as medical, retirement and education benefits. Sometimes they look for self-benefits which increase their salaries and benefits and may not be in line with shareholders' and creditors' expectations. There are cases where management asks for excessive remuneration, retirement benefits and travel allowances for their family members. At the same time, the financial performance of the company is below a satisfactory level and clearly this is at an expense of the shareholders and the creditors.

**Answer 4(d)**

Some ways to resolve conflicts of interest include: (choose 2 out of 3 points)

Hire external auditors to issue opinions on the financial statements to the shareholders. Auditors audit the financial statements and decide if it conveys truth and fairness.

Offer attractive remuneration packages to management to reduce their temptation to ask for self benefits. Stock options and reasonable remuneration packages linked with financial performance of the company normally make employees work hard for the company.

Appoint non-executive directors to monitor the performance of the company. Appointment of a higher portion of independent non-executive directors would allow more talents to contribute constructive ideas and serve as a control mechanism to reduce the occurrence of abuse of resources

**Answer 4(e)**

Corporate governance is the set of processes, customs, policies, laws, and institutions concerning the way a corporation (or company) is directed, administered or controlled. Corporate governance deals with the relationships among the stakeholders involved and the goals for which the corporation is governed.

**Answer 5(a)**

Returns from stock investments include capital gains and dividend yield. In a particular year, stock prices may go down rather than up, eroding capital gains. On the other hand, holding stock for less than a year may lead to little or no dividend yield. This is particularly true for short term investors. In addition, a company may not distribute any dividend.

**Answer 5(b)**

Residual dividend policy means dividends are paid out of whatever earnings are left after all positive NPV investments have been funded and the desired debt/equity ratio is obtained. If there are no funds left after financing the positive NPV project, no dividend will be distributed to the shareholders.



**Answer 5(c)**

A high dividend is better for retired persons who need current income and to resolve any uncertainty in future dividends. Retired persons need cash flow to maintain their standard of living. Dividends may go down rather than up so people demand a high current dividend rather than an uncertain future dividend. A high dividend may also signal favourable financial performance in the coming years.

**Answer 5(d)**

Companies distribute a low dividend because the company wants to retain more cash for financing positive NPV projects or foresees low growth in the years ahead. In addition, bond indentures may restrict the distribution of a high dividend.

**Answer 5(e)**

The required stock price =  $2 \times (1+2\%) / (14.5\% - 2\%) = \text{HK\$}16.32$

**Answer 6(a)**

	HK\$
Rent	3,336,000
Salaries	508,032
Other operating costs	120,000
Annual expenses	<u>3,964,032</u>

Note: Salaries =  $4 \times 12 \times 28 \times 30 \times 12 \times 1.05 = \text{HK\$}508,032$

**Answer 6(b)**

Annual cost = HK\$3,964,032

Monthly cost =  $\text{HK\$}3,964,032 / 12 = \text{HK\$}330,336$

Monthly cost per car =  $\text{HK\$}330,336 / 200 = \text{HK\$}1,651.7$

**Answer 6(c)**

Annual cost = HK\$3,964,032

Annual cost  $\times (1+20\%) = \text{HK\$}4,756,838.4$  (required annual income)

Monthly cost =  $\text{HK\$}4,756,838.4 / 12 = \text{HK\$}396,403.2$

Monthly cost per car =  $\text{HK\$}396,403.2 / 200 = \text{HK\$}1,982$

Alternatively,  $\text{HK\$}1,651.7 \times (1+20\%) = \text{HK\$}1,982$

**Answer 6(d)**

Some qualitative factors in determining the rent:

Competition from other companies. Competition may prevent East Coast International from achieving its expected pricing.

Actual demand. If the actual demand from customers is higher than expectation, the company may charge a higher price, otherwise, the company may need to reduce prices.

**Answer 6(e)**

Companies listed on the Stock Exchange usually have a better reputation as their media exposure is usually higher. In addition, listed companies find it easier to raise additional capital from the stock market.

Listing on the stock exchange is not without disadvantages. Financial markets now demand a stricter regulatory environment. Different countries will have their own set of regulations. Moreover, listing means more transparent information disclosure. Such information will be available to competitors as well and so may hurt the competitiveness of that company.

\* \* \* END OF EXAMINATION PAPER \* \* \*

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# Examination Panelist's Report

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Paper II  
PBE Management  
Accounting and Finance  
(December 2011 Session)

*(The main purpose of the following report is to summarise candidates' common weaknesses and make recommendations to help future candidates improve their performance in the examination.)*

### **General Comments**

Candidates performed quite well in this paper. They were able to master the basic concepts of management accounting and finance, and applied them to solve application problems. If students had performed better in Question 1, their overall performance could have been even better.

### **Specific Comments**

#### **Section A – Compulsory Questions**

##### **Question 1 - 20 marks**

This question tested candidates' abilities to solve problems related to breakeven analysis for a hotel which involved two departments. Students did not perform well in this question. The primary reason was that candidates failed to find out the weighted average contribution margin and then make use of it in other parts of the examination paper. In part (c), only a few of candidates knew the meaning of the equation relating the number of meals and the number of guests staying at the hotel. It is suggested that candidates need to recall their knowledge of linear equations learnt in secondary school, such as the y-intercept and slope in order to solve such problems.

##### **Question 2 - 20 marks**

This question again tested candidates' problem solving abilities, and this time it was related to breakeven analysis for membership cards which are now popular in Hong Kong. The performance was quite satisfactory and candidates were able to get the breakeven number from either party's points of view. Improvement was also observed in writing the memo. In the last part, only a few candidates knew the concept of Triple Bottom Line (TBL), it is suggested that candidates need to read the syllabus carefully and be aware of qualitative type of questions dealing with new management terms.

#### **Section B – Optional Questions**

##### **Question 3 - 20 marks**

This question is a typical NPV question. The performance was good except that quite a number of candidates mixed up quantitative and qualitative issues. The former required calculation while the latter required description and critical thinking.

##### **Question 4 - 20 marks**

This question was a typical question on an agency problem and conflict of interest in a corporation. It was answered by a few candidates and was not answered satisfactorily.

Quite a number of candidates failed to understand the questions in setting the right direction. They did not know that the starting point was the accounting equation:  $\text{Asset} = \text{Liabilities} + \text{Equity}$ . Thus, they referred to the wrong parties and got the wrong answers for the remaining parts.

Question 5 - 20 marks

The question assessed the candidates' knowledge of dividend, dividend policy and returns from stock. Most candidates gave the correct answers though some of them still failed to understanding the fundamental concepts on stock investment.

Question 6 - 20 marks

This question tested candidates' abilities to solve questions related to pricing. The performance was good but some candidates made the same mistake as in Question 3 by confusing the meaning of qualitative and quantitative factors. Most candidates knew the pros and cons of listing on the Stock Exchange.

\* \* \* END OF EXAMINATION PANELIST'S REPORT \* \* \*

