

**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**

PBE Transport Company is an international transport company based in Germany. It has a branch in Hong Kong and its main service role is to provide transportation to company employees, students and passengers based on ad-hoc requests.

Recently it received a request from a church in Hong Kong to provide the transportation service to travel from a housing estate to an auditorium. The whole journey would last for 20 minutes one way and, 2.5 hours later, the coach would pick up the passengers and the return journey would be 20 minutes. The charge would be HK\$800 per coach. The church management people wondered why such a short trip was so costly. The coach company replied that the charge was calculated based on time, not based on distance in normal circumstances.

A coach driver is paid HK\$15,000 per month. Annual insurance and maintenance fee is HK\$55,200. Fuel cost is normally 20% of revenue. Overheads account for another 10% of revenue.

The Chief Executive Officer (CEO) of PBE Transport Company is also the chairman of AAT Airways. AAT Airways is going to receive a new aircraft from the Boeing manufacturing plant in Seattle. The CEO would like to make use of the ceremony as a package tour sold to the public. The package involves travelling from Hong Kong to Seattle via Vancouver. The guests will stay in a hotel for two nights and will fly on the new aircraft from Boeing aircraft manufacturing plant in Seattle back to Hong Kong. If the package tour is not organized, the new aircraft still needs to fly back to Hong Kong.

There is no direct flight from Seattle to Hong Kong but the market price of an air ticket for each single journey trip in business class from Hong Kong to Vancouver is HK\$20,000. The air ticket price from Vancouver to Seattle is HK\$700 per person and the trip lasts for about 30 minutes.

Each hotel night costs HK\$3,000 for a single person in a single room with breakfast. It is estimated that the whole trip would involve two breakfasts, two lunches and two dinners. Each lunch will cost HK\$300 per person and each dinner will cost HK\$600 per person. The tour would be comprised of 30 customers. A coach service would be provided for three days and each day costs HK\$2,000.

The CEO asks you to offer comments on various cost issues.

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

- (a) Define sunk cost. Give an example of sunk cost from the case information with reference to PBE Transport Company. (4 marks)
- (b) Define incremental cost. Give an example of incremental cost from the case information with reference to PBE Transport Company. (3 marks)
- (c) From the coach operator's perspective, point out a possible reason why the charge for the coach service is based on time. (3 marks)
- (d) Find the breakeven monthly revenue for the coach service. If the charge is based on HK\$800 per round-trip, also find the number of trips to breakeven in a month. (10 marks)

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

- (a) Name THREE incremental costs in the Aircraft Delivery Flight journey. (3 marks)
- (b) Calculate the total cost of the journey for a person travelling from Hong Kong to Seattle via Vancouver using a commercial flight and returning to Hong Kong on the new aircraft. (6 marks)
- (c) Explain ONE possible reason why the fuel cost for the trip from Seattle Boeing manufacturing plant to Hong Kong is excluded from AAT Airways' incremental cost calculations. (2 marks)
- (d) Suggest TWO incremental costs incurred for the trip from the Boeing manufacturing plant to Hong Kong. (4 marks)
- (e) Suggest ONE possible reason why AAT Airways could charge a higher price for the package tour per person than the cost you calculated in part (b). (2 marks)
- (f) AAT Airways finally decides to invite famous celebrities and its stakeholders to the ceremony instead of selling it as package tour to the public. Suggest a rationale behind this decision. (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)**

The HKSAR government issued three series of an inflation-linked bond (i-bond). Its face value is HK\$10,000 and the coupon rate is linked to inflation. The average inflation rate is 4% per year and the interest rate for the Hong Kong dollar is 0.2% per annum. The issued price is HK\$10,000 per bond.

**Required:**

- (a) Suppose the term of the i-bond is 3 years and it pays semi-annual interest. Calculate the theoretical price of the bond at issuance. (6 marks)
- (b) What would you expect in the market price when it is issued in the open market? (3 marks)
- (c) Based on the theoretical price, is it a premium bond or discount bond? Explain briefly. (2 marks)
- (d) Sketch a normal yield curve and explain its shape. (5 marks)
- (e) If the interest rate increases, what change in bond price would you expect? Briefly explain. (2 marks)
- (f) When the i-bond is closer to its maturity, what is the likely movement of price when compared with the theoretical price at issuance? Briefly explain. (2 marks)

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

Table 1 shows the food cost, labour cost and operating profit margin of a hamburger fast food shop and a prestige traditional Chinese restaurant. Operating profit margin for supermarket X and Y are also shown. The cost percentages are defined as respective costs divided by sales revenue.

Table 1

|   | Food Cost | Staff Cost | Operating profit margin |
|---|-----------|------------|-------------------------|
| A | 22.8%     | 17.4%      |                         |
| B | 36.0%     | 28.2%      |                         |
| X | n/a       | n/a        | 2%                      |
| Y | n/a       | n/a        | 3.7%                    |

**Required:**

- (a) State the identity of A and B as to whether they are the hamburger fast food shop and prestige traditional Chinese restaurant. Briefly provide your justifications. (4 marks)
- (b) Calculate the staff cost of supermarket X as a percentage of sales revenue if the sales revenue is HK\$8,516,000, salaries and wages are HK\$2,774,000 and employee benefits are HK\$345,000. (2 marks)
- (c) The operating profit margin for both supermarkets X and Y are quite low, but the owners are happy with its operation. Explain TWO possible reasons why the profit margin is reasonable or viable from the cashflow or company perspective. (4 marks)
- (d) If food cost increases substantially and erodes the profit margin of many restaurants, suggest TWO ways to reduce the food cost and state ONE of the corresponding implications. (6 marks)
- (e) In the context of expanding the operation of a restaurant, suggest TWO ways to control staff costs other than laying-off existing staff. (4 marks)

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

The debt-to-equity (D/E) ratios of four property development companies are shown below:

| Companies | D/E ratio (%) |
|-----------|---------------|
| P         | 33.6          |
| Q         | 19.1          |
| R         | 43.3          |
| S         | 103.9         |

**Required:**

- (a) Explain debt-to-equity ratio and its use. (2 marks)
- (b) Rank in descending order of market value for the above companies based on the assumptions of the Modigliani and Miller (MM) Model. (4 marks)
- (c) When there are tax and bankruptcy costs, what does the MM Proposition I say? (4 marks)
- (d) Explain part (c) by sketching a graph with firm value as the y-axis and debt level as the x-axis. (4 marks)
- (e) Explain TWO reasons why the stock price of a firm usually drops when it announces the issuance of new shares. (4 marks)
- (f) Why is debt-to-equity ratio not normally used to compare banks? What would you expect its level to be when comparing the banks' debt-to-equity ratio to the ratio of the property development companies quoted above? (2 marks)

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

Café 2013 is a staff canteen in QP Airways' headquarters. Inside the headquarters, some offices are leased out to business partners of QP Airways. Only staff of QP Airways can use the canteen. It is the policy that the employees of QP Airways are provided with lunch. QP Airways may run its café as a subsidiary or outsource the café operation to outside caterers. If it is outsourced, each employee will be subsidised HK\$40 per lunch and they have the option to go to the outsourced café or to eat outside.

It is found that the price of food charged by the subsidiary café to QP Airways is different from the price offered by the market. The annual turnover of QP Airways is HK\$50 billion and the annual expenses of Café 2013 are HK\$15 million of which HK\$13 million is avoidable variable cost. The remaining HK\$2 million is fixed cost which is avoidable if QP Airways does not run the café operation.

You are the Finance Director of QP Airways and also the Chairman of the Staff Canteen Committee.

**Required:**

- (a) There are 1,000 employees in QP Airways. Assume there are 52 working weeks and each working week consists of 5 days. What will be the annual lunch subsidy paid to the employees if Café 2013 is outsourced? (3 marks)
- (b) Based on the calculation in (a), do you think QP Airways should outsource the café operation to an outsider or run the café internally? Support your answer with calculations and explain with reasons. (4 marks)
- (c) Suggest ONE possible financial factor which may be missed out in the above analysis of the outsourcing of the café operation or establishing the café in-house. (2 marks)
- (d) Draft a memo to the CEO of QP Airways to explain the FOUR perspectives of the Balanced Scorecard which may be used to evaluate the performance of the staff canteen. State TWO examples of measurement in two of the non-financial perspectives. (5 marks)
- (e) Explain ONE possible reason why Café 2013 may run at a loss if it is outsourced to an outside caterer. (2 marks)
- (f) Suggest ONE advantage and ONE disadvantage of outsourcing the café to an outside caterer. (4 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

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

$$H = 3Z - 2L$$





### Future Value of \$1

| Period | 0.50%  | 1%      | 2%     | 3%      | 4%       | 5%        | 6%         | 7%          | 8%           | 9%           | 10%           |
|--------|--------|---------|--------|---------|----------|-----------|------------|-------------|--------------|--------------|---------------|
| 1      | 1.0050 | 1.0100  | 1.0200 | 1.0300  | 1.0400   | 1.0500    | 1.0600     | 1.0700      | 1.0800       | 1.0900       | 1.1000        |
| 2      | 1.0100 | 1.0201  | 1.0404 | 1.0609  | 1.0816   | 1.1025    | 1.1236     | 1.1449      | 1.1664       | 1.1881       | 1.2100        |
| 3      | 1.0151 | 1.0303  | 1.0612 | 1.0927  | 1.1249   | 1.1576    | 1.1910     | 1.2250      | 1.2597       | 1.2950       | 1.3310        |
| 4      | 1.0202 | 1.0406  | 1.0824 | 1.1255  | 1.1699   | 1.2155    | 1.2625     | 1.3108      | 1.3605       | 1.4116       | 1.4641        |
| 5      | 1.0253 | 1.0510  | 1.1041 | 1.1593  | 1.2167   | 1.2763    | 1.3382     | 1.4026      | 1.4693       | 1.5386       | 1.6105        |
| 6      | 1.0304 | 1.0615  | 1.1262 | 1.1941  | 1.2653   | 1.3401    | 1.4185     | 1.5007      | 1.5869       | 1.6771       | 1.7716        |
| 7      | 1.0355 | 1.0721  | 1.1487 | 1.2299  | 1.3159   | 1.4071    | 1.5036     | 1.6058      | 1.7138       | 1.8280       | 1.9487        |
| 8      | 1.0407 | 1.0829  | 1.1717 | 1.2668  | 1.3686   | 1.4775    | 1.5938     | 1.7182      | 1.8509       | 1.9926       | 2.1436        |
| 9      | 1.0459 | 1.0937  | 1.1951 | 1.3048  | 1.4233   | 1.5513    | 1.6895     | 1.8385      | 1.9990       | 2.1719       | 2.3579        |
| 10     | 1.0511 | 1.1046  | 1.2190 | 1.3439  | 1.4802   | 1.6289    | 1.7908     | 1.9672      | 2.1589       | 2.3674       | 2.5937        |
| 11     | 1.0564 | 1.1157  | 1.2434 | 1.3842  | 1.5395   | 1.7103    | 1.8963     | 2.1049      | 2.3316       | 2.5804       | 2.8531        |
| 12     | 1.0617 | 1.1268  | 1.2682 | 1.4258  | 1.6010   | 1.7959    | 2.0122     | 2.2522      | 2.5182       | 2.8127       | 3.1384        |
| 13     | 1.0670 | 1.1381  | 1.2936 | 1.4665  | 1.6651   | 1.8856    | 2.1329     | 2.4098      | 2.7196       | 3.0658       | 3.4523        |
| 14     | 1.0723 | 1.1495  | 1.3195 | 1.5126  | 1.7317   | 1.9799    | 2.2609     | 2.5785      | 2.9372       | 3.3417       | 3.7975        |
| 15     | 1.0777 | 1.1610  | 1.3459 | 1.5580  | 1.8009   | 2.0789    | 2.3966     | 2.7590      | 3.1722       | 3.6425       | 4.1772        |
| 16     | 1.0831 | 1.1726  | 1.3728 | 1.6047  | 1.8730   | 2.1829    | 2.5404     | 2.9522      | 3.4259       | 3.9703       | 4.5950        |
| 17     | 1.0885 | 1.1843  | 1.4002 | 1.6528  | 1.9479   | 2.2920    | 2.6928     | 3.1588      | 3.7000       | 4.3276       | 5.0545        |
| 18     | 1.0939 | 1.1961  | 1.4282 | 1.7024  | 2.0258   | 2.4066    | 2.8543     | 3.3799      | 3.9960       | 4.7171       | 5.5599        |
| 19     | 1.0994 | 1.2081  | 1.4568 | 1.7535  | 2.1068   | 2.5270    | 3.0256     | 3.6165      | 4.3157       | 5.1417       | 6.1159        |
| 20     | 1.1049 | 1.2202  | 1.4859 | 1.8061  | 2.1911   | 2.6533    | 3.2071     | 3.8697      | 4.6610       | 5.6044       | 6.7275        |
| 25     | 1.1328 | 1.2824  | 1.6406 | 2.0938  | 2.6658   | 3.3864    | 4.2919     | 5.4274      | 6.8485       | 8.6231       | 10.8347       |
| 30     | 1.1614 | 1.3478  | 1.8114 | 2.4273  | 3.2434   | 4.3219    | 5.7435     | 7.6123      | 10.0627      | 13.2677      | 17.4484       |
| 40     | 1.2208 | 1.4889  | 2.21   | 3.26    | 4.80     | 7.04      | 10.29      | 14.97       | 21.72        | 31.41        | 45.26         |
| 60     | 1.3489 | 1.8167  | 3.28   | 5.89    | 10.52    | 18.68     | 32.99      | 57.95       | 101.26       | 176.03       | 304.48        |
| 80     | 1.4903 | 2.2167  | 4.88   | 10.64   | 23.05    | 49.56     | 105.80     | 224.23      | 471.95       | 986.55       | 2048.40       |
| 120    | 1.8194 | 3.3004  | 10.77  | 34.71   | 110.66   | 348.91    | 1088.19    | 3357.79     | 10252.99     | 30987.02     | 92709.07      |
| 240    | 3.3102 | 10.8926 | 115.89 | 1204.85 | 12246.20 | 121739.57 | 1184152.57 | 11274742.82 | 105123864.28 | 960195145.04 | 8594971441.07 |

| Period | 11%            | 12%             | 13%              | 14%               | 15%                |
|--------|----------------|-----------------|------------------|-------------------|--------------------|
| 1      | 1.1100         | 1.1200          | 1.1300           | 1.1400            | 1.1500             |
| 2      | 1.2321         | 1.2544          | 1.2769           | 1.2996            | 1.3225             |
| 3      | 1.3676         | 1.4049          | 1.4429           | 1.4815            | 1.5209             |
| 4      | 1.5181         | 1.5735          | 1.6305           | 1.6890            | 1.7490             |
| 5      | 1.6851         | 1.7623          | 1.8424           | 1.9254            | 2.0114             |
| 6      | 1.8704         | 1.9738          | 2.0820           | 2.1950            | 2.3131             |
| 7      | 2.0762         | 2.2107          | 2.3526           | 2.5023            | 2.6600             |
| 8      | 2.3045         | 2.4760          | 2.6584           | 2.8526            | 3.0590             |
| 9      | 2.5580         | 2.7731          | 3.0040           | 3.2519            | 3.5179             |
| 10     | 2.8394         | 3.1058          | 3.3946           | 3.7072            | 4.0456             |
| 11     | 3.1518         | 3.4785          | 3.8359           | 4.2262            | 4.6524             |
| 12     | 3.4985         | 3.8960          | 4.3345           | 4.8179            | 5.3503             |
| 13     | 3.8833         | 4.3635          | 4.8980           | 5.4924            | 6.1528             |
| 14     | 4.3104         | 4.8871          | 5.5348           | 6.2613            | 7.0757             |
| 15     | 4.7846         | 5.4736          | 6.2543           | 7.1379            | 8.1371             |
| 16     | 5.3109         | 6.1304          | 7.0673           | 8.1372            | 9.3576             |
| 17     | 5.8951         | 6.8660          | 7.9861           | 9.2765            | 10.7613            |
| 18     | 6.5436         | 7.6900          | 9.0243           | 10.5752           | 12.3755            |
| 19     | 7.2633         | 8.6128          | 10.1974          | 12.0557           | 14.2318            |
| 20     | 8.0623         | 9.6463          | 11.5231          | 13.7435           | 16.3665            |
| 25     | 13.5855        | 17.0001         | 21.2305          | 26.4619           | 32.9190            |
| 30     | 22.8923        | 29.9599         | 39.1159          | 50.9502           | 66.2118            |
| 40     | 65.00          | 93.05           | 132.78           | 188.88            | 267.86             |
| 60     | 524.06         | 897.60          | 1530.05          | 2595.82           | 4384.00            |
| 80     | 4225.11        | 8658.48         | 17630.94         | 35676.98          | 71750.88           |
| 120    | 274635.99      | 805680.26       | 2341063.63       | 6738793.69        | 19219445.00        |
| 240    | 75424926785.77 | 649120673317.10 | 5480578920960.75 | 45411340363982.90 | 369387066182044.00 |

### Future Value of Annuity of \$1

| Period | 0.50%    | 1%       | 2%       | 3%      | 4%       | 5%        | 6%         | 7%          | 8%           | 9%            | 10%           |
|--------|----------|----------|----------|---------|----------|-----------|------------|-------------|--------------|---------------|---------------|
| 1      | 1.0000   | 1.0000   | 1.0000   | 1.0000  | 1.0000   | 1.0000    | 1.0000     | 1.0000      | 1.0000       | 1.0000        | 1.0000        |
| 2      | 2.0050   | 2.0100   | 2.0200   | 2.0300  | 2.0400   | 2.0500    | 2.0600     | 2.0700      | 2.0800       | 2.0900        | 2.1000        |
| 3      | 3.0150   | 3.0301   | 3.0604   | 3.0909  | 3.1216   | 3.1525    | 3.1836     | 3.2149      | 3.2464       | 3.2781        | 3.3100        |
| 4      | 4.0301   | 4.0604   | 4.1216   | 4.1836  | 4.2465   | 4.3101    | 4.3746     | 4.4399      | 4.5061       | 4.5731        | 4.6410        |
| 5      | 5.0503   | 5.1010   | 5.2040   | 5.3091  | 5.4163   | 5.5256    | 5.6371     | 5.7507      | 5.8666       | 5.9847        | 6.1051        |
| 6      | 6.0755   | 6.1520   | 6.3081   | 6.4684  | 6.6330   | 6.8019    | 6.9753     | 7.1533      | 7.3359       | 7.5233        | 7.7156        |
| 7      | 7.1059   | 7.2135   | 7.4343   | 7.6625  | 7.8983   | 8.1420    | 8.3938     | 8.6540      | 8.9228       | 9.2004        | 9.4872        |
| 8      | 8.1414   | 8.2857   | 8.5830   | 8.8923  | 9.2142   | 9.5491    | 9.8975     | 10.2598     | 10.6366      | 11.0285       | 11.4359       |
| 9      | 9.1821   | 9.3685   | 9.7546   | 10.1591 | 10.5828  | 11.0266   | 11.4913    | 11.9780     | 12.4876      | 13.0210       | 13.5795       |
| 10     | 10.2280  | 10.4622  | 10.9497  | 11.4639 | 12.0061  | 12.5779   | 13.1808    | 13.8164     | 14.4866      | 15.1929       | 15.9374       |
| 11     | 11.2792  | 11.5668  | 12.1687  | 12.8078 | 13.4864  | 14.2068   | 14.9716    | 15.7836     | 16.6455      | 17.5603       | 18.5312       |
| 12     | 12.3356  | 12.6825  | 13.4121  | 14.1920 | 15.0258  | 15.9171   | 16.8699    | 17.8885     | 18.9771      | 20.1407       | 21.3843       |
| 13     | 13.3972  | 13.8093  | 14.6803  | 15.6178 | 16.6268  | 17.7130   | 18.8821    | 20.1406     | 21.4953      | 22.9534       | 24.5227       |
| 14     | 14.4642  | 14.9474  | 15.9739  | 17.0863 | 18.2919  | 19.5966   | 21.0151    | 22.5505     | 24.2149      | 26.0192       | 27.9750       |
| 15     | 15.5365  | 16.0969  | 17.2934  | 18.5989 | 20.0236  | 21.5786   | 23.2760    | 25.1290     | 27.1521      | 29.3609       | 31.7725       |
| 16     | 16.6142  | 17.2579  | 18.6393  | 20.1569 | 21.8245  | 23.6575   | 25.6725    | 27.8881     | 30.3243      | 33.0034       | 35.9497       |
| 17     | 17.6973  | 18.4304  | 20.0121  | 21.7616 | 23.6975  | 25.8404   | 28.2129    | 30.8402     | 33.7502      | 36.9737       | 40.5447       |
| 18     | 18.7858  | 19.6147  | 21.4123  | 23.414  | 25.645   | 28.132    | 30.906     | 33.999      | 37.450       | 41.301        | 45.599        |
| 19     | 19.8797  | 20.8109  | 22.8406  | 25.117  | 27.671   | 30.539    | 33.760     | 37.379      | 41.446       | 46.018        | 51.159        |
| 20     | 20.9791  | 22.0190  | 24.2974  | 26.870  | 29.778   | 33.066    | 36.786     | 40.995      | 45.762       | 51.160        | 57.275        |
| 25     | 26.5591  | 28.2432  | 32.0303  | 36.459  | 41.646   | 47.727    | 54.865     | 63.249      | 73.106       | 84.701        | 98.347        |
| 30     | 32.2800  | 34.7849  | 40.5681  | 47.575  | 56.085   | 66.439    | 79.058     | 94.461      | 113.283      | 136.308       | 164.494       |
| 40     | 44.1588  | 48.8864  | 60.4020  | 75.401  | 95.026   | 120.800   | 154.762    | 199.635     | 259.057      | 337.882       | 442.593       |
| 60     | 69.7700  | 81.6697  | 114.0515 | 163.053 | 237.991  | 353.584   | 533.128    | 813.520     | 1253.213     | 1944.792      | 3034.816      |
| 80     | 98.0677  | 121.6715 | 193.7720 | 321.363 | 551.245  | 971.229   | 1746.600   | 3189.063    | 5886.935     | 10950.574     | 20474.002     |
| 120    | 163.8793 | 230.0387 | 488.3    | 1123.7  | 2741.6   | 6958.2    | 18119.8    | 47954.1     | 128149.9     | 344289.1      | 927080.7      |
| 240    | 462.0409 | 989.2554 | 5744.4   | 40128.4 | 306130.1 | 2434771.5 | 19735859.6 | 161067740.3 | 1314048291.0 | 10668834933.8 | 85949714400.7 |

| Period | 11%            | 12%             | 13%              | 14%               | 15%                |
|--------|----------------|-----------------|------------------|-------------------|--------------------|
| 1      | 1.0000         | 1.0000          | 1.0000           | 1.0000            | 1.0000             |
| 2      | 2.1100         | 2.1200          | 2.1300           | 2.1400            | 2.1500             |
| 3      | 3.3421         | 3.3744          | 3.4069           | 3.4396            | 3.4725             |
| 4      | 4.7097         | 4.7793          | 4.8498           | 4.9211            | 4.9934             |
| 5      | 6.2278         | 6.3528          | 6.4803           | 6.6101            | 6.7424             |
| 6      | 7.9129         | 8.1152          | 8.3227           | 8.5355            | 8.7537             |
| 7      | 9.7833         | 10.0890         | 10.4047          | 10.7305           | 11.0668            |
| 8      | 11.8594        | 12.2997         | 12.7573          | 13.2328           | 13.7268            |
| 9      | 14.1640        | 14.7757         | 15.4157          | 16.0853           | 16.7858            |
| 10     | 16.7220        | 17.5487         | 18.4197          | 19.3373           | 20.3037            |
| 11     | 19.5614        | 20.6546         | 21.8143          | 23.0445           | 24.3493            |
| 12     | 22.7132        | 24.1331         | 25.6502          | 27.2707           | 29.0017            |
| 13     | 26.2116        | 28.0291         | 29.9847          | 32.0887           | 34.3519            |
| 14     | 30.0949        | 32.3926         | 34.8827          | 37.5811           | 40.5047            |
| 15     | 34.4054        | 37.2797         | 40.4175          | 43.8424           | 47.5804            |
| 16     | 39.1899        | 42.7533         | 46.6717          | 50.9804           | 55.7175            |
| 17     | 44.5008        | 48.8837         | 53.7391          | 58.1176           | 65.0751            |
| 18     | 50.396         | 55.750          | 61.725           | 66.394            | 75.836             |
| 19     | 56.939         | 63.440          | 70.749           | 75.969            | 88.212             |
| 20     | 64.203         | 72.052          | 80.947           | 86.025            | 102.444            |
| 25     | 114.413        | 133.334         | 155.620          | 181.871           | 212.793            |
| 30     | 199.021        | 241.333         | 293.199          | 356.787           | 434.745            |
| 40     | 581.826        | 767.091         | 1013.704         | 1342.025          | 1779.090           |
| 60     | 4755.066       | 7471.641        | 11761.950        | 18535.133         | 29219.992          |
| 80     | 38401.025      | 72145.693       | 135614.927       | 254828.441        | 478332.529         |
| 120    | 2496681.6      | 6713993.8       | 18008174.1       | 48134233.5        | 128129626.7        |
| 240    | 685681170770.6 | 5409338944300.8 | 42158299391998.1 | 324366716885585.0 | 2462580441213620.0 |

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# Answers

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Paper II

PBE Management

Accounting and Finance

(June 2014 Session)

**Section A** (Total: 40 marks)

**Answer 1(a)**

A sunk cost is any cost which has been incurred or committed no matter what decision or action we are going to make or take. In this case, examples of sunk cost are annual insurance and maintenance fee, as they are incurred no matter how many service orders are received by the company.

**Answer 1 (b)**

An incremental cost is any additional cost incurred when an action is taken. In the case, fuel cost is an incremental cost as it varies with distance. The tunnel fee is also an incremental cost.

**Answer 1(c)**

From the coach operator's perspective, when the coach is being used in serving an order, it cannot be used for any other orders at the same time. This reflects the opportunity cost of the loss of time in receiving other orders.

**Answer 1(d)**

On a monthly basis,

Profit = Revenue – overhead – fuel – salaries – insurance / maintenance fee

= Revenue – 0.1 Revenue for overhead – 0.2 Revenue for fuel – HK\$15,000 – HK\$55,200 / 12

When profit = 0, Revenue = HK\$28,000

Breakeven number of trips = HK\$28,000 / HK\$800 = 35 trips

**Answer 2(a)**

The incremental costs include the flight from Hong Kong to Vancouver, from Vancouver to Seattle, the coach services and the meals. These are additional costs when the CEO decides to carry customers from Hong Kong to Seattle via Vancouver and to stay in Seattle.

**Answer 2(b)**

Total cost per person = HK\$20,000 + HK\$700 + HK\$3,000 x 2 nights + HK\$300 x 2 lunches + HK\$600 x 2 dinners + HK\$2,000 x 3 days/30 customers = HK\$28,700

**Answer 2(c)**

As the new aircraft will fly back to Hong Kong anyway, the fuel cost is a kind of sunk cost to AAT Airways so it is excluded from the incremental cost calculation of the company.

**Answer 2(d)**

Two possible incremental costs for the trip from Boeing manufacturing plant to Hong Kong are the meal cost for passengers on the aircraft and the additional staff costs for serving the customers.

**Answer 2(e)**

The package tour price charged by AAT Airways could be higher as customers will be able to attend the ceremony which is a rare opportunity for the public to join, so that AAT Airways can use this special event to generate additional revenue.

**Answer 2(f)**

Instead of generating revenue by selling a tour package to the public, AAT Airways uses the ceremony to entertain famous public figures and its stakeholders. It can be regarded as a kind of public relation exercise to maintain a good relationship with its stakeholders, and the expenses incurred are tax-deductible.

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

**Section B** (Total: 60 marks)

**Answer 3(a)**

$$\text{Price} = \text{HK\$}200 \times \left[ \frac{1 - 1 / (1 + 0.1\%)^6}{0.1\%} \right] + \text{HK\$}10,000 / (1 + 0.1\%)^6 = \text{HK\$}11,136.02$$

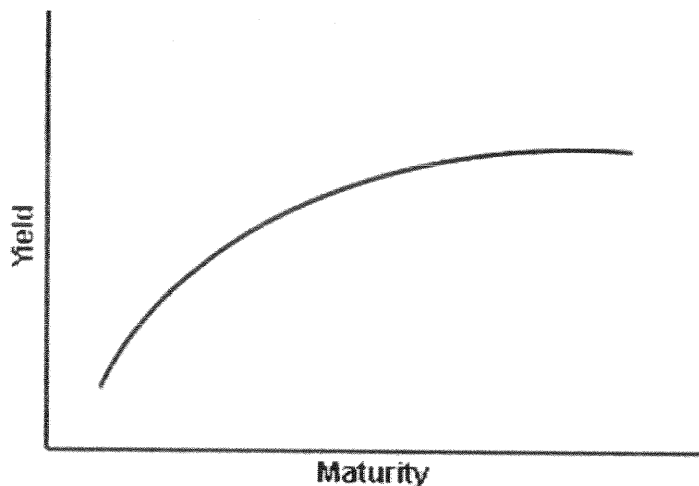
**Answer 3(b)**

It is expected that the bond price will increase upon being issued in the open market as the bond is sold at par value but its theoretical price is HK\$11,136.02

**Answer 3(c)**

It is a premium bond as its price is higher than the face value.

**Answer 3(d)**



The yield curve shows the relationship between the interest rate (y-axis) and the maturity (x-axis). In a normal yield curve, the longer the maturity, the higher the yield (interest rate). This is because the expectation of inflation and the risk are higher.

**Answer 3(e)**

When the interest rate increases, the price of the bond decreases. This is because the present value of the principal and the coupon payment are worth less, so the bond price decreases.

**Answer 3(f)**

When it is closer to maturity, the price of the i-bond decreases. When maturity is close, there are less coupon payments, so the bond price decreases.

**Answer 4(a)**

A is a hamburger fast food shop and B is a prestige traditional Chinese restaurant. There are less staff in a fast food shop than a prestige traditional Chinese restaurant so the staff cost is lower. Also, the quality of food is usually better in a prestige traditional Chinese restaurant than a hamburger fast food shop so the food cost is higher.

**Answer 4(b)**

Staff cost = (Salaries and wages + Employee benefits)/Total Sales Revenue =  
HK\$3,119,000 / HK\$8,516,000 = 36.6%

**Answer 4(c)**

Supermarket operators receive cash from customers almost immediately but they can have long payment period to suppliers. This improves their cashflow cycle a lot. Also, even though the operating profit margin is low, the operation scale is large and thus the overall profit is still attractive.

**Answer 4(d)**

Restaurants could reduce the food portion size and quality of food served in the restaurant. However, customers may not be happy with the portion size or lower quality of food served to them. There is a limit to the degree of reduction in portion size and, after that, the price will increase.

**Answer 4(e)**

To control the staff cost, restaurant owners may consider to use automation like a dish washer or hire part-time staff or internship students to work in the restaurants. Part-time staff are deployed at peak hours only and this can reduce the fixed staff cost and staff benefits incurred in a month regardless of business needs. Restaurant owners may also consider to use disposable tableware or even outsource some of the work to vendors.

**Answer 5(a)**

The definition of debt-to-equity ratio is Debt / Equity. This is the relative proportion of debt and equity. It is frequently used in finance to indicate the level of debt in financial statement analysis.

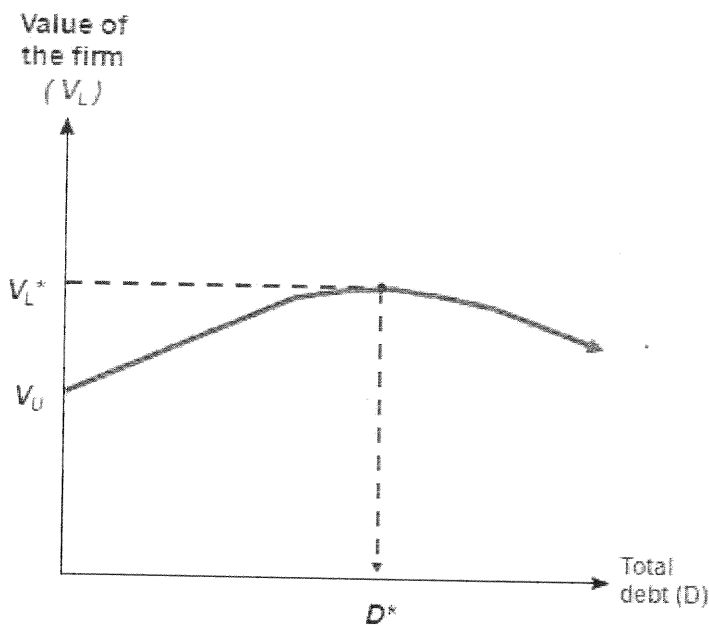
**Answer 5(b)**

The descending order of the stock price based on the MM Model is  $S > R > P > Q$ . This is because the higher the debt level, the higher the interest expense, the better the tax advantage and the higher the stock price.

**Answer 5(c)**

It states that the firm value increases as debt level increases up to a point. This is due to the tax advantage as higher debt level leads to higher interest expenses and the better tax shield, then the firm value drops due to the increase in bankruptcy costs.

**Answer 5(d)**



The higher the debt level, the higher the firm value due to the better tax shield. After that, the firm value decreases due to the increase in bankruptcy costs.



**Answer 5(e)**

When new shares are issued, it may mean the debt level or the stock price are too high. Also, the floating cost for stock is higher than that for debt.

**Answer 5(f)**

The majority of bank assets are their liability due to the deposit made by their customers. In terms of debt-to-equity ratio, it is around 500% or above.

**Answer 6(a)**

The annual subsidy =  $1,000 \times \text{HK\$}40 \times 5 \times 52 = \text{HK\$}10.4$  million.

**Answer 6(b)**

The annual expenses of running the café are HK\$15 million. Based on the result in (a), if QP Airways subsidises the employees and outsourcing the café operation, it can save HK\$2.6 million avoidable variable cost and HK\$2 million fixed cost annually. It is better to outsource the operation and offer a subsidy to employees.

**Answer 6(c)**

The opportunity cost, such as the rental income given up, when the café is established in-house rather than outsourcing its operation is ignored in the analysis.

(Other valid suggestions are acceptable.)

**Answer 6(d)**

To: CEO, QP Airways  
From: Finance Director and Chairman of the Staff Canteen Committee  
Date: XX Jun 2014  
Subject: Four Perspectives on the Balanced Scorecard for the Staff Canteen

Balanced Scorecard can be used to assess the performance of the Staff Canteen.

The four perspectives on the Balanced Scorecard are Financial, Customer, Internal Business Processes, and Learning and Growth. For the customer perspective, customer satisfaction can be used for evaluation. Efficiency in delivering food can be used to assess the performance of internal Business Processes. In addition, the number of new food items introduced in a year can be used to assess the performance of Learning and Growth.

Finance Director

**Answer 6(e)**

Café 2013 only serves staff of QP Airways. It may run at a loss because staff of QP Airways can go to other restaurants after getting the HK\$40 subsidy, but outsiders are not allowed to go into the restaurant.

(Other relevant answers are acceptable.)

**Answer 6(f)**

If Café 2013 is outsourced, the quality of the food may not be assured as the outside caterer's aim is to make a profit. However, outsourcing the café operation can reduce the operating cost of the canteen and allow QP Airways to concentrate on its core business.

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

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# Examination Panelist's Report

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Paper II  
PBE Management  
Accounting and Finance  
(June 2014 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 very well in this paper. They were able to master the basic concept of management accounting, but could improve further in applying their knowledge to solve application problems of both subject areas.

### **Specific Comments**

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

##### **Question 1 – 20 marks**

This question tested candidates' ability to differentiate various costs in managerial accounting in a real-life situation faced by a coach company. Candidates performed well in this question in general and were able to identify the costs, the breakeven revenue and number of trips.

##### **Question 2 – 20 marks**

This question tested candidates' knowledge of incremental cost and total cost in another real life situation faced by an airline. Most candidates gave correct answers to this question particularly with regard to knowing why the fuel cost was excluded in the calculation, but a few candidates failed to distinguish the difference in part (b) and part (d). The former concerned the trip from Hong Kong while the latter concerned the trip back to Hong Kong.

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

##### **Question 3 – 20 marks**

This was the least popular question and the performance was not satisfactory. It was a typical question on bond pricing. Candidates seemed to not have mastered the concept of bond pricing well as quite a number of them did not know the meaning of premium bond and discount bond. Also, they did not know how the bond price was changed when the interest rate increased and this was a bit disappointing.

##### **Question 4 – 20 marks**

This question was also a popular question. It tested the ability of candidates to analyze cost information in the catering industry. Most candidates could give correct answers to most parts except in part (d) where quite a number of them gave answers such as hedging and signing a long term contract which is impracticable for most caterers.

Question 5 – 20 marks

Candidates' performance was good in this question. They knew the definition of debt-equity ratio and were able to relate it to the Modigliani and Miller (MM) Model. A few candidates did not know why debt-equity ratio is not relevant in the banking industry. This indicated their inability to apply financial analysis to a real-life situation.

Question 6 – 20 marks

This was a typical question on an outsourcing decision. Candidates performed very well in most parts which indicated their good knowledge of this topic. However, candidates did not demonstrate sufficient competency on the topic of a Balanced Scorecard which was a popular topic in this paper.

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

