



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

June 2010 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

PBE Corporation is a multinational company which manufactures high resolution DVD players. It consists of many divisions, and divisional managers are delegated with full responsibility for profit and loss. They are given the autonomy to accept or reject offers made by other divisions and to accept or reject bids from the open market, in both mainland China and overseas countries.

Division M produces 10,000 units of a part that already has a market for its sales. This part is currently used by Division N for their final assembled product, "Blue ray DVD". The final product is sold to outsiders for \$3,000 per unit. Division M charges Division N \$1,800 market price per unit for the parts. Unit variable costs incurred are \$1,600 and \$1,300 for Divisions M and N, respectively. The manager of Division N believes that Division M should transfer the parts at a lower price because Division N is currently unable to make a profit based on the current transfer price.

The Finance Division of PBE Corporation consists of two main departments: the Controller's Department and the Treasury. Even before the financial tsunami, the Finance Director felt that working capital management was essential to the survival of the company. PBE Corporation has been using many cash flow management models like Baumol Model and Miller Orr Model to manage the cash level of the company. From historical figures, the level of accounts receivable constituted over 60% of its total assets. Sometimes, PBE makes use of excess cash to invest in marketable securities.

Question 1 (25 marks – approximately 45 minutes)

You are the chief management accountant of PBE Corporation and you are asked by the Finance Director to analyse the pros and cons of the internal transfer of parts.

Required:

- (a) Explain the basic principle of "responsibility accounting". (4 marks)
- (b) Calculate the contribution margin in both total and in unit of Division M, Division N and PBE Corporation as a whole if transfer is made at market price. (8 marks)
- (c) Based on financial consideration alone, if Division M can sell all of its production in the open market. Should Division M transfer the parts to Division N? What other non financial factors need to be considered? (4 marks)

- (d) If Division M can only sell 5,000 units of the parts in the open market at \$1,700 per unit, from PBE Corporation's point of view, should Division M transfer all 10,000 units to Division N or just sell 5,000 units to the open market and transfer the rest to Division N? Illustrate clearly the logic of your decision, based on both financial and other qualitative considerations.

(9 marks)

Question 2 (15 marks – approximately 27 minutes)

"Good credit policy is an essential tool to successful working capital management". This is claimed by the chairman of the PBE Corporation.

Required:

- (a) Name FOUR important aspects of a good credit policy? (4 marks)
- (b) Based on the high level of accounts receivable, if PBE is in need of cash, what two ways can be deployed to improve the cash flow based on the application of accounts receivable? (3 marks)
- (c) What is the basic principle of the Miller Orr Model? (3 marks)
- (d) Suppose that short-term securities yield 12% per year and it costs the company \$10,000 each time it buys or sells securities. The annual standard deviation of cash flows is \$8,000 and the bank requires a \$100,000 minimum current account balance. What are the cash balance target and upper cash limit respectively?

(5 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)

Lemon Company Limited utilizes excess cash to invest in securities, options including bonds and stocks. The expected returns of bonds and stocks are respectively 5% and 7% and the variances are 3% and 4%. The covariance is 2.40% of investment is in bonds and the remainder is in stocks.

Required:

- (a) Calculate the expected return and standard deviation of the portfolio. (6 marks)
- (b) What is the correlation coefficient between bonds and stocks? (4 marks)
- (c) Sketch a graph showing FOUR cases involving the variation of return with risk when the correlation coefficient between bonds and stocks is 1, 0.5, -0.5 and -1 respectively. Explain your graph in brief. (6 marks)
- (d) What is the conclusion you draw from the answer to part (c) in terms of portfolio management? (2 marks)
- (e) Explain why it is unwise, from a portfolio management perspective, to invest only in stocks from the banking and property sectors in Hong Kong. (2 marks)

Question 4 (20 marks – approximately 36 minutes)

Tommy Lui is a financial advisor to the CEO of Forever Company Limited. He told the CEO that “whenever companies have high debt level, try to avoid them as the share prices will be under very high pressure”. In addition, “stockholders treasure very much the performance given by Return on Equity (ROE)”.

Required:

- (a) Why, according to the Modigliani and Miller (M&M) proposition, is borrowing advantageous in a tax paying environment?

Discuss and illustrate your answer by drawing a graph showing the firm’s market value and debt level, with a short narrative description.

(4 marks)

- (b) What is the implication for your answer in part (a) if there is no tax? Illustrate again by using a suitable graph showing the firm’s market value and debt level.

(4 marks)

- (c) What would happen to the graph if there were a financial distress cost? Explain by using a graph with the same axes as above.

(3 marks)

- (d) What is the definition of Return on Equity? Decompose the Return on Equity to three terms with one term involving net profit margin and one term having assets in the denominator.

(4 marks)

- (e) Assuming the other factors remain constant, make use of the above decomposition and M&M proposition to explain why some level of borrowing is essential to improve the Return on Equity (ROE).

(5 marks)

Question 5 (20 marks – approximately 36 minutes)

The Yokohama Company produces tires. Last year, it sold 80,000 units and generated annual sales revenue of \$6,400,000. The company's variable cost per unit and total fixed costs were \$30 and \$3,000,000 respectively. Senior management of Yokohama Company is studying the impact of the following independent scenarios:

Scenario 1: Lower the break-even point to 50,000 units by adjusting the fixed costs.

Scenario 2: Senior management expects a \$2 increase in the variable cost per unit, other things being equal.

Required:

- (a) What is the current break-even point in units? (4 marks)
- (b) With regards to scenario 1, what are the revised fixed costs? (3 marks)
- (c) With regards to scenario 2, what is the revised selling price if the break-even point is maintained? (3 marks)
- (d) With regards to scenario 2, what are the revised fixed costs if the selling prices remain constant? (4 marks)
- (e) With respect to overhead cost allocation, distinguish between "Activity Based Costing" and "Standard Costing". Explain one weakness of "Activity Based Costing". (6 marks)

Question 6 (20 marks – approximately 36 minutes)

Kama Hotel is a listed hotel group in Crest Island. The hotel has an investor relation department to monitor the performance of stock prices. Eric Tam is the manager in charge of the department and he heard of Fama who is one of the pioneers in proposing the "Efficient Market Hypothesis".

Required:

- (a) Which form of efficient market is related to the technical analysis of stocks? Which form of efficient market is related to the fundamental analysis of stocks? Explain briefly. (4 marks)
- (b) Tommy is the assistant of Eric and he consistently buys shares at the beginning of a month and sells shares close to the end of a month when the futures are cleared. He gains attractive profits from this strategy. Explain which form of efficient market is violated. (3 marks)
- (c) A group of fund managers visit a hotel of the group in Chengdu. According to normal practice, the fund managers usually buy shares in the group after they finish the visit. You are an accountant in Kama Hotel and you make use of this piece of information to gain a short term profit. Explain which form of efficient market is violated. (3 marks)
- (d) The fixed cost of the buffet department of the Kama Hotel is \$3,500 a day. A customer selected a menu for 100 persons that carried food cost of \$100 per person, a variable staff cost of \$100 per person, and other variable costs of \$30 per person.
- (i) Find the total cost per person if this buffet meal was reserved. (1 mark)
- (ii) Find the sales price per person if a 20% net profit on sales price is wanted? (2 marks)
- (iii) A customer does not want to pay more than \$300 per person for a buffet function. This customer is a loyal customer and he has booked many functions in the buffet restaurant in the past and is expected to do so in the future. The function is four days from now, and it is highly unlikely that you will be able to book the room for any other function. Explain whether you would or would not accept the \$300 per person sales price. (7 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:

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

$$\text{Constant perpetuity: } PV = \frac{C}{r} \quad \text{Growing perpetuity: } PV = \frac{C_1}{r-g}$$

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 β):

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

Capital Structure - MM II (with corporate taxes):

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

Miller-Orr Model

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

$$H = 3Z - 2L$$

Present Value of \$1

Period	0.50%	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%
1	0.9950	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696
2	0.9901	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.8116	0.7972	0.7831	0.7695	0.7561
3	0.9851	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750	0.6575
4	0.9802	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133	0.5921	0.5718
5	0.9754	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5935	0.5674	0.5428	0.5194	0.4972
6	0.9705	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5066	0.4803	0.4556	0.4323
7	0.9657	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5470	0.5132	0.4817	0.4523	0.4251	0.3996	0.3759
8	0.9609	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.5019	0.4665	0.4339	0.4039	0.3762	0.3506	0.3269
9	0.9561	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329	0.3075	0.2843
10	0.9513	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946	0.2697	0.2472
11	0.9466	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.3173	0.2875	0.2607	0.2366	0.2149
12	0.9419	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2858	0.2567	0.2307	0.2076	0.1869
13	0.9372	0.8787	0.7730	0.6810	0.6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2575	0.2292	0.2042	0.1821	0.1625
14	0.9326	0.8700	0.7579	0.6611	0.5775	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2320	0.2046	0.1807	0.1597	0.1413
15	0.9279	0.8613	0.7430	0.6419	0.5553	0.4810	0.4173	0.3624	0.3152	0.2745	0.2394	0.2090	0.1827	0.1599	0.1401	0.1229
16	0.9233	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1883	0.1631	0.1415	0.1229	0.1069
17	0.9187	0.8444	0.7142	0.6050	0.5134	0.4363	0.3714	0.3166	0.2703	0.2311	0.1978	0.1696	0.1456	0.1252	0.1078	0.0929
18	0.9141	0.8360	0.7002	0.5874	0.4936	0.4155	0.3503	0.2959	0.2502	0.2120	0.1799	0.1528	0.1300	0.1108	0.0946	0.0808
19	0.9096	0.8277	0.6864	0.5703	0.4746	0.3957	0.3305	0.2765	0.2317	0.1945	0.1635	0.1377	0.1161	0.0981	0.0829	0.0703
20	0.9051	0.8195	0.6730	0.5537	0.4564	0.3769	0.3118	0.2584	0.2145	0.1784	0.1486	0.1240	0.1037	0.0868	0.0728	0.0611

Present Value of Annuity of \$1

Period	0.50%	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%
1	0.9950	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696
2	1.9851	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.7125	1.6901	1.6681	1.6467	1.6257
3	2.9702	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2.4437	2.4018	2.3612	2.3216	2.2832
4	3.9505	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.1024	3.0373	2.9745	2.9137	2.8550
5	4.9259	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6959	3.6048	3.5172	3.4331	3.3522
6	5.8964	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.2305	4.1114	3.9975	3.8887	3.7845
7	6.8621	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.7122	4.5638	4.4226	4.2883	4.1604
8	7.8230	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348	5.3349	5.1461	4.9676	4.7988	4.6389	4.4873
9	8.7791	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.5370	5.3282	5.1317	4.9464	4.7716
10	9.7304	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.8892	5.6502	5.4262	5.2161	5.0188
11	10.6770	10.3676	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052	6.4951	6.2065	5.9377	5.6869	5.4527	5.2337
12	11.6189	11.2551	10.5753	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.4924	6.1944	5.9176	5.6603	5.4206
13	12.5562	12.1337	11.3484	10.6350	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6.7499	6.4235	6.1218	5.8424	5.5831
14	13.4887	13.0037	12.1062	11.2961	10.5631	9.8986	9.2950	8.7455	8.2442	7.7862	7.3667	6.9819	6.6282	6.3025	6.0021	5.7245
15	14.4166	13.8651	12.8493	11.9379	11.1184	10.3797	9.7122	9.1079	8.5595	8.0607	7.6061	7.1909	6.8109	6.4624	6.1422	5.8474
16	15.3399	14.7179	13.5777	12.5611	11.6523	10.8378	10.1059	9.4466	8.8514	8.3126	7.8237	7.3792	6.9740	6.6039	6.2651	5.9542
17	16.2586	15.5623	14.2919	13.1661	12.1657	11.2741	10.4773	9.7632	9.1216	8.5436	8.0216	7.5488	7.1196	6.7291	6.3729	6.0472
18	17.1728	16.3983	14.9920	13.7535	12.6593	11.6896	10.8276	10.0591	9.3719	8.7556	8.2014	7.7016	7.2497	6.8399	6.4674	6.1280
19	18.0824	17.2260	15.6785	14.3238	13.1339	12.0853	11.1581	10.3356	9.6036	8.9501	8.3649	7.8393	7.3658	6.9380	6.5504	6.1982
20	18.9874	18.0456	16.3514	14.8775	13.5903	12.4622	11.4699	10.5940	9.8181	9.1285	8.5136	7.9633	7.4694	7.0248	6.6231	6.2593
25	23.4456	22.0232	19.5235	17.4131	15.6221	14.0939	12.7834	11.6536	10.6748	9.8226	9.0770	8.4217	7.8431	7.3300	6.8729	6.4641
30	27.7941	25.8077	22.3965	19.6004	17.2920	15.3725	13.7648	12.4090	11.2578	10.2737	9.4269	8.6938	8.0552	7.4957	7.0027	6.5660
40	36.1722	32.8347	27.3555	23.1148	19.7928	17.1591	15.0463	13.3317	11.9246	10.7574	9.7791	8.9511	8.2438	7.6344	7.1050	6.6418
60	51.7256	44.9550	34.7609	27.6756	22.6235	18.9293	16.1614	14.0392	12.3766	11.0480	9.9672	9.0736	8.3240	7.6873	7.1401	6.6651
80	65.8023	54.8882	39.7445	30.2008	23.9154	19.5965	16.5091	14.2220	12.4735	11.0998	9.9951	9.0888	8.3324	7.6919	7.1427	6.6666
120	90.0735	69.7005	45.3554	32.3730	24.7741	19.9427	16.6514	14.2815	12.4988	11.1108	9.9999	9.0909	8.3333	7.6923	7.1429	6.6667
240	139.5808	90.8194	49.5686	33.3057	24.9980	19.9998	16.6667	14.2857	12.5000	11.1111	10.0000	9.0909	8.3333	7.6923	7.1429	6.6667

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	1.8983	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	1.4685	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	17.4494
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	2595.92	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	75424928785.77	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	19.5986	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	10668634933.8	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	59.1176	65.0751
18	50.396	55.750	61.725	68.394	75.836
19	56.939	63.440	70.749	78.969	88.212
20	64.203	72.052	80.947	91.025	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	72145.893	135614.927	254828.441	478332.529
120	2496681.8	6713993.8	18008174.1	48134233.5	128129626.7
240	68568117070.6	5409338944300.8	42158299391998.1	324366716885585.0	2462580441213620.0

Answers

Paper II
PBE Management
Accounting and Finance
(June 2010 Session)

Section A (Total: 40 marks)

Answer 1(a)

The basic principle of responsibility accounting is that it involves accumulating costs and revenue on the basis of the manager having the authority to make the day-to-day decisions about the items. It also reflects accountability of the managers regarding the revenue and costs over which they have direct control. Managers' performance is evaluated on the basis of matters directly under that manager's control.

Answer 1(b)

	Division M	Division N	PBE Corporation
Volume of Production/Sales (Units)	10,000	10,000	10,000
Transfer/Selling Price Per Unit	1,800	3,000	3,000
Variable Costs Per Unit	1,600	1,300	2,900
Sales		30,000,000	30,000,000
Internal sales to Division N	18,000,000		
Total Sales	18,000,000	30,000,000	30,000,000
<u>Costs of Production/Sales</u>			
Variable Costs	(16,000,000)	(13,000,000)	(29,000,000)
Purchase from Division M		(18,000,000)	
Total Variable Costs	(16,000,000)	(31,000,000)	(29,000,000)
Contribution Margin	2,000,000	(1,000,000)	1,000,000
Contribution Margin per Unit	200	(100)	100

Answer 1(c)

From the above analysis, if Division M can sell all of its production on the open market, the contribution margin is \$2,000,000. If M sells it to N, the overall contribution margin is \$1,000,000 and division N incurs a loss on such a transfer, it is obvious that the benefit to the company is greater if M sells its product directly to the open market rather than transferring its parts to N to sell on to the open market.

Answer 1(d)

There are two alternatives

Alternative 1

(Transfer 10,000 units to Division N)

PBE Corporation

Sales	30,000,000
Variable Costs	<u>(29,000,000)</u>
Contribution Margin	<u>1,000,000</u>

Note:

$$\text{Sales} = 10,000 \times \$3,000 = \$30,000,000$$

$$\text{Variable Costs} = 10,000 \times (\$1,600 + \$1,300) = \$29,000,000$$

Alternative 2

(Sell 5,000 units on the open market and transfer 5,000 units to Division N)

PBE Corporation

Sales	23,500,000
Variable Costs	<u>(22,500,000)</u>
Contribution Margin	<u>1,000,000</u>

Note:

$$\text{Sales} = 5,000 \times \$3,000 + 5,000 \times \$1,700 = \$23,500,000$$

$$\text{Variable Costs} = 10,000 \times \$1,600 + 5,000 \times \$1,300 = \$22,500,000$$

Both scenarios are the same. Besides financial considerations, Division M may consider factors like building a long-term relationship with customers in the external market or maintaining a good working relationship with the internal department with regards to the transfer volume.

Answer 2(a)

The Four aspects of good credit policy involve:

- (i) assess the creditworthiness of the creditors before granting credit;
- (ii) exercise good control on credit limits;
- (iii) Invoice promptly and collect overdue debts to reduce bad debt; and
- (iv) monitor the credit system from time to time.

Answer 2(b)

If PBE is in need of cash, it may consider factoring the accounts receivable through banks at the expense of paying interest. Alternatively, it may provide discounts to creditors to encourage them to settle their payments earlier.

Answer 2(c)

The Miller-Orr Model assumes that many companies do not use cash flows uniformly and the model allows them to have daily cashflow variation. The cash balance is allowed to fluctuate between the upper limit and the lower limit. The purchase and sales of marketable securities can only be made when one of these limits is reached.

Answer 2(d)

In the Miller-Orr Model, Target Cash Balance Z

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

Where

TC= transaction cost of buying and selling securities

V = variance of daily cash flows

R = daily return on short-term investments

L = minimum cash requirements

Now, $R = 12\%/365$, $TC = \$10,000$, $V = \$8,000^2$, $L = \$100,000$, $Z = \$213,444.7$

Upper limit for the cash balance $H = 3Z - 2L = \$440,334.2$

* * * END OF SECTION A * * *

Section B (Total: 60 marks)

Answer 3(a)

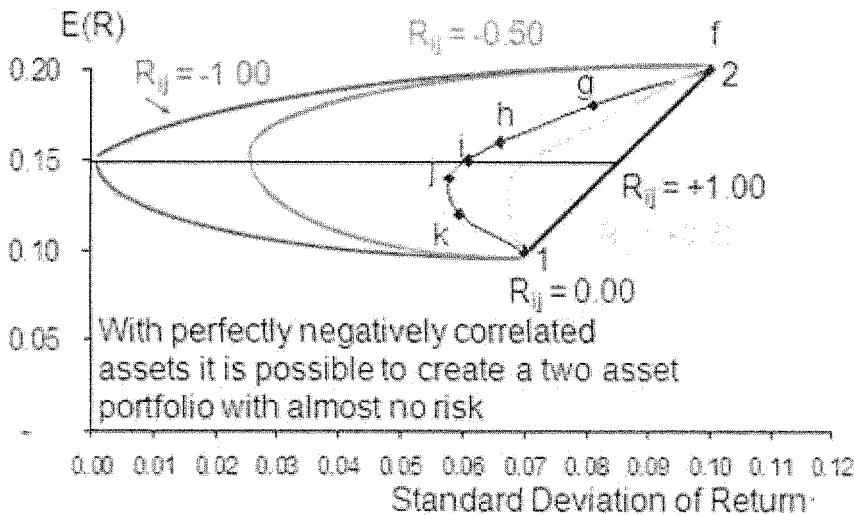
Expected return = $0.4 \times 5\% + 0.6 \times 7\% = 6.2\%$

Standard deviation = $(0.4^2 \times 3\% + 0.6^2 \times 4\% + 2 \times 0.4 \times 0.6 \times 2)^{1/2} = 1.7\%$

Answer 3(b)

Correlation coefficient = $2 / (3\%^{1/2} \times 4\%^{1/2}) = 0.58$

Answer 3(c)



From the graph, the higher the correlation coefficient, the lower the reduction in standard deviation of return of the portfolio. For example, when the return is 15%, a correlation coefficient of 1 gives a risk to portfolio standard deviation of 8.5%. When the correlation coefficient is 0, the portfolio standard deviation is 6%. When the correlation coefficient is -0.5, the portfolio standard deviation is 2.5%.

Answer 3(d)

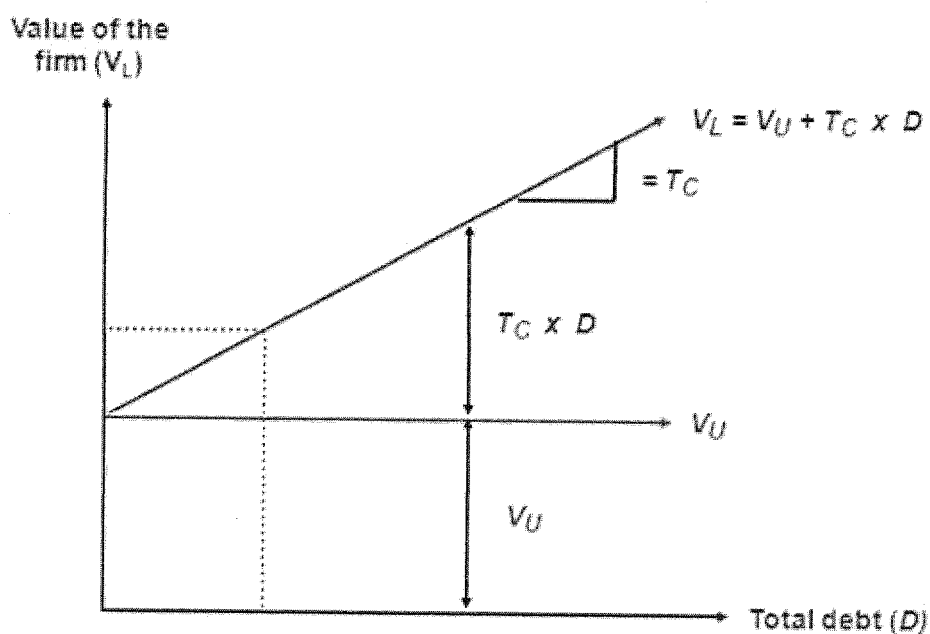
In portfolio management, we should include investments with a low or even negative correlation in order to reduce the overall risk of the portfolio. The higher the correlation coefficient, the lower the effect of risk reduction. If the correlation is -1, it is possible to have zero standard deviation in the portfolio.

Answer 3(e)

It is unwise to invest only in stocks from the banking and property sectors in Hong Kong because in Hong Kong stocks from these two sectors are closely correlated as banks in Hong Kong have heavy a business in granting loans to the property sector. If there is a big adjustment in the property market, the banking section will be greatly affected.

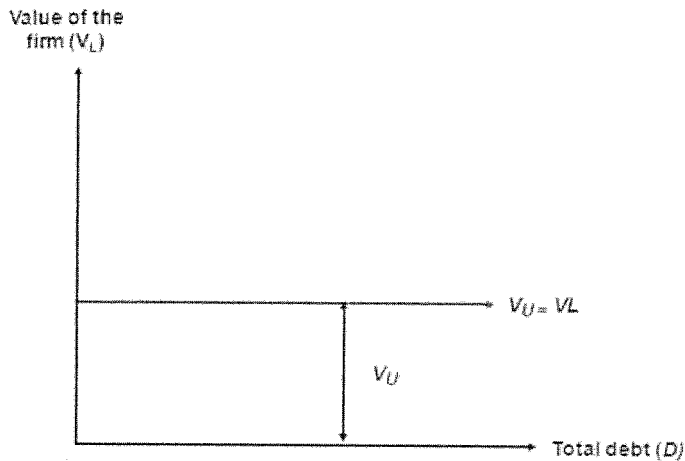
Answer 4(a)

According to the Modigliani and Miller (M&M) proposition, borrowing is advantageous in a tax environment because a firm can get tax deductions (also called a tax shield) from the interest paid for the loan. Thus a firm's value keeps on increasing when the debt level increases. This is represented by the line increasing from the left to the upper right hand corner



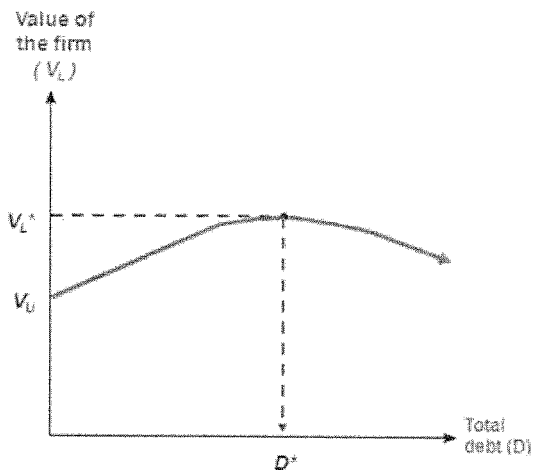
Answer 4(b)

When there is no tax, there is no related tax shield for interest payments. Whether borrowing or not borrowing brings no special advantage to a firm and the value remains the same. That is $V_u = V_L$: value of unlevered firm = value of levered firm. This is represented by the horizontal line.



Answer 4(c)

If there is financial distress cost, the advantage from the tax shield is balanced by an increase in the financial distress cost and the firm's value will not increase indefinitely. This is represented by a line first increasing and then decreasing.



Answer 4(d)

Return of equity (ROE) = Net Profit / Equity

This can be decomposed into:

- (i) ROE = Net Profit / Sales x Sales / Asset x Asset / Equity
- (ii) ROE = Net profit margin x Asset turnover x Equity Multiplier

Answer 4(e)

ROE is an important ratio from the shareholders' perspective. To improve ROE, we may either increase the profit margin or asset turnover or the equity multiplier. The higher the equity multiplier, the higher the ROE. A high equity multiplier means higher asset per dollar of equity and higher borrowing. For every \$1 contributed by the shareholders, the higher the borrowing, the higher the asset value on the left hand side of the accounting equation. Therefore, some leverage would improve ROE.

Answer 5(a)

Unit selling price = $\$6,400,000 / 80,000 = \80

Break-even point (in units) = Fixed cost / Unit contribution margin
= $\$3,000,000 / (\$80 - \$30) = 60,000$ units

Answer 5(b)

If the break-even point is 50,000 units, by using the same contribution margin of \$50 per unit

Break-even point (in units) = Fixed cost / Unit contribution margin
= Fixed Costs / $(\$80 - \$30) = 50,000$ units

Fixed Costs = $\$2,500,000$

Answer 5(c)

If the variable cost per unit is increased by \$2 to \$32, assuming no change in the breakeven point of 60,000 units, we have to maintain the same contribution margin.

The unit selling price = $\$50 + \$32 = \$82$.

Answer 5(d)

If the variable cost per unit is now \$32, assuming the selling price remains \$80, the contribution margin = \$48. To maintain the same breakeven point, the fixed cost is:

Break-even point (in units) = Fixed cost/Unit contribution margin
= Fixed Cost / \$48 = 60,000 units

Fixed cost = \$2,880,000

Answer 5(e)

In Activity Based Costing (ABC), overhead cost allocation is based on the level of activity identified, such as the number of inspections and number of employees. In Standard Costing, overhead cost allocation is based on a certain standard or unchanged rate, irrespective of the level of activity. For example, the IT service provided by the IT department may be charged at \$300 per hour or the security service is allocated at \$600 per guard per day. This charge is independent of the activity in question.

ABC has several weaknesses. There is evidence that ABC allocates more overheads to products with a smaller production volume. In addition, it is expensive to obtain detailed cost data and ABC does not eliminate arbitrary assignments of overheads.

Answer 6(a)

In weak form efficiency, investors cannot consistently beat the market based on past information. This means that investors performing a technical analysis of stocks cannot consistently gain abnormal profits. In semi-strong form efficiency, investors cannot consistently beat the market by analysing public information including past information. Public information refers to a fundamental analysis like listed company announcement and news, and annual reports.

Answer 6(b)

In this example, it violated the weak form efficiency as Tommy believed that shares price regularly drop at the beginning of the month after the clearance of the futures contracts and increase close to the end of a month when the futures contracts are cleared. This pattern forms the technical analysis and belongs to weak form efficiency.

Answer 6(c)

In this example, it violated the strong form efficiency as the accountant made use of the private information of a fund manager visit to gain a short term profit. Such information was not publicly available and need not be announced through the Hong Kong Exchange.

Answer 6(d)

(i) Total cost = \$100 + \$100 + \$30 + \$35 = \$265

(iii) If the cost = \$265 and 20% profit on the sale price is required.

Sales price per person = $\$265 / 80\% = \331.3

(iii) If the deal is accepted,

Sales revenue	\$300 x 100	=	\$30,000
Variable cost	\$230 x 100	=	\$23,000
Fixed cost		=	\$3,500
Net Profit		=	\$3,500

If the deal is not accepted,

Sales revenue	\$0
Variable cost	\$0
Fixed cost	\$3,500
Net Loss	(\$3,500)

If the deal is accepted, all variable and fixed costs are covered and there is a profit of \$3,500 (11.7% of sales), although it is a little below the targeted profit margin of 20%. Thus the order is still acceptable.

* * * END OF EXAMINATION PAPER * * *

Examination Panelist's Report

Paper II
PBE Management
Accounting and Finance
(June 2010 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

In general, the performance was not satisfactory as quite a number of candidates did not master the fundamental concepts of management accounting and finance, such as basic principle of responsibility accounting, return on equity, activity-based costing and market efficiency. There were straight-forward questions, but students failed to demonstrate their understanding of fundamental concepts or gave irrelevant answers. Though it has been mentioned in previous reports, it was still observed that some students did not have good answering techniques. For example, different parts of a question were presented out of sequence, and questions were split up and scattered across different pages. However, I did see some improvements.

Specific Comments

Section A – Compulsory Questions

Question 1 – 25 marks

Quite a number of students listed and explained various centres regarding the principle of responsibility accounting instead of explaining the fundamental concepts. For the question on transfer pricing, some students failed to give answer from both Division M, N and PBE Corporation's perspectives. It was also observed that students failed to present their answers clearly and in an organized manner. For example, in a tabular format.

Question 2 – 15 marks

Students gave satisfactory answers for aspects of good credit policy and how to deal with high level of accounts receivable. Part (d) was poorly answered. Mistakes were made in mixing up the standard deviation and variance of the dollar amount (\$8,000). In addition, the interest rate was on per annum basis (12%) and so, in the calculation, students needed to divide it by 365. Only a few students calculated the upper and lower limits correctly.

Section B – Optional Questions

Question 3 – 20 marks

This question tested candidates' knowledge of portfolio management. In the question, variances of the investment vehicles were given, students forgot to take the square root when standard deviation was required or the square root when the formula requires variance. In part (c), only a few students presented the correct graph, even though it is a typical graph in portfolio management. Most students gave graphs of various strange shapes and this showed that students were not familiar with the topic.

Question 4 – 20 marks

This question was not answered satisfactorily. Students mixed up parts (a) and (b). In the former case, tax was present, while in the latter case, tax was not present. Parts (d) and (e), tested students' knowledge of return on equity and the Du Pont Identity. This is a popular topic but students often failed to present the correct breakdowns and explain the factors involved.

Question 5 – 20 marks

This question was answered satisfactorily in terms of the calculation of the breakeven points. In part (e), even though it was simple, students failed to distinguish between Activity Based Costing and Standard Costing in terms of their overhead allocation.

Question 6 – 20 marks

This question tested candidates' concepts with regard to market efficiency and pricing a product. The part on market efficiency was not answered satisfactorily even though it is a straight-forward and popular topic. Students were confused about fundamental analysis and technical analysis, and failed to apply their knowledge when it came to telling the difference between various forms of market efficiency. The performance on the part concerned with pricing a buffet was impressive.

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

