



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 2009 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. Both questions 1 and 2 are related to this case.

**CASE**

Gold Walker is a manufacturer and retailer of leather shoes. They have several manufacturing plants in the southern part of China. The retail outlets are mainly located in Asian countries, including Hong Kong, Taiwan and mainland China. They start preparing their quarterly budget in March for the financial quarter commencing on 1 Apr.

With the assistance of the Marketing Department, Gold Walker have projected sales figures for the months of April 2010 to August 2010 as follows:

April	20,000 units
May	50,000 units
June	30,000 units
July	25,000 units
August	15,000 units.

The projected sales price is \$500 per unit. From past experience, 70% of sales revenue will be collected in the month of sale, 25% collected in the month following sale, with 5% uncollectable. On 31 March 2010, the accounts receivable has a balance of \$300,000 and will be collected in full in April 2010. The accounts payable balance is \$120,000. It also has 4,000 units of inventory on hand on the same date.

Management decided that Gold Walker needs to maintain an ending inventory equal to 20% of the following month's budgeted unit sales. It is assumed that 1 kg of material is required for one pair of shoes. Management wants materials on hand at the end of each month equal to 10% of the following month's production.

On 31 March 2010, 2,600 kg of material are on hand. Material cost is \$40 per kg. 50% of a month's purchase of materials are paid in the month of purchase and the other half is paid in the following month.

Management is also considering the purchase of a new manufacturing plant for its Xian site. The purchase cost is \$5,000,000 and the site can be used for 20 years. It is expected that the plant will generate cash revenue of \$3,000,000 and incur cash expenses of \$2,000,000 a year. At the beginning of the project, a working capital of \$500,000 is needed and will be released at the end of 20 years. The plant will be depreciated on a straight line basis to \$0. Assume the tax rate can be ignored and a discount rate of 12% is used.

**Question 1 (24 marks – approximately 43 minutes)**

You are the Chief Management Accountant of Gold Walker. You are asked by the Finance Director to lead the budgeting exercise.

**Required:**

- (a) Prepare the cash collection budget in tabular form from April to June. Show the total value for the quarter. (4 marks)
- (b) Prepare the production budget in units in tabular form from April to June. Show the total value for the quarter (4 marks)
- (c) Prepare the direct material purchase budget in tabular form from April to June. Show the total value for the quarter. (4 marks)
- (d) Prepare the cash disbursement budget in tabular form from April to June. Show the total value for the quarter (4 marks)
- (e) The organisation of the company consists of both cost centres and profit centres. Explain why divisional management tends to inflate figures, even on expenses, when they prepare a budget? (4 marks)
- (f) What is the amount of accounts receivable at the end of June? (2 marks)
- (g) What is the amount of accounts payable at the end of June? (2 marks)

**Question 2 (16 marks – approximately 29 minutes)**

Besides preparing the budget, the Finance Director also asks you to prepare a budgeted statement of financial position and to evaluate the feasibility of the purchase of the plant.

**Required:**

- (a) What is the NPV of the proposed new manufacturing plant in Xian? (10 marks)
- (b) Point out two major weaknesses of NPV analyses. (4 marks)
- (c) Apart from the NPV method, Payback is often used in project evaluation. What is its major weakness when compared with the NPV method? (2 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 Fever Co is a retailer of abalone in the southern part of Guangzhou. It orders both dry and wet abalone from South Africa and Argentina. The usual lot size is 100 kg per order. From past experience, the average annual demand for abalone is 7,200 kg per year. Transportation of abalone is expensive since the container needs to be specially configured. The ordering costs are \$250 per order with an average purchasing price of \$5,000. Abalone has inventory carrying costs which are 30% of the unit cost. In inventory management, there is a model called Economic Order Quantity (EOQ).

**Required:**

- (a) What is the formula for EOQ? (1 mark)
- (b) What is Fever Co's EOQ in the above scenario? (2 marks)
- (c) Explain why EOQ is important in inventory management. (2 marks)
- (d) Sketch a graph showing the costs (y-axis) and order quantity (x-axis). The costs should include total cost, order cost (set-up cost) and holding cost. (4 marks)
- (e) What are the annual cost savings if Fever Co changes from an order size of 100 kg to the EOQ? (5 marks)
- (f) Assuming a 365-day year, determine the optimal lot size under a 2-day shelf life. (2 marks)
- (g) What are the major assumptions under the EOQ model? (4 marks)

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

Listed companies have several ways to raise equity capital. Placing and rights issues are two popular methods. Recently, there have been announcements and rumours that some international banks need to raise additional capital through a rights issue. Obama Bank Ltd. decided to raise \$3 million additional equity capital through a rights offering. Every shareholder will receive one right for every five shares of stock they own. The offering consists of 400,000 new shares. The current market price of Obama's stock is \$30. Currently, there are 2 million shares outstanding.

**Required:**

- (a) What is the meaning of Placing and when is it used? (2 marks)
- (b) What do you observe regarding the number of placing of stock when the market is booming compared with when the market is busting? How do you explain such behaviour? (4 marks)
- (c) What is the meaning of a rights issue? (2 marks)
- (d) Why are rights issues not popular among investors? (3 marks)
- (e) What is the ex-rights price and value of one right of Obama Bank Ltd.? (5 marks)
- (f) What are the FOUR actions usually made by investors when facing a rights issue? (4 marks)

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

AAT Co. Ltd. has the following extracts from its Statement of Financial Position:

Long term liability

	\$
Bond payable (face value=\$1,000)	10,000,000

Equity

Common stock (par = \$1)	250,000
Stock premium	1,000,000
Retained earnings	<u>5,000,000</u>
	<u>6,250,000</u>

The market price of the stock is \$40 per share. AAT is expected to pay an annual dividend in the amount of \$2.0 per share. The dividend growth rate is 3%. The bonds carry a 6% coupon, pay interest annually, and mature in 4.641 years. The bonds are selling at 102% of face value. The yield rate of similar types of bond is 5.5%. The tax rate is 15%.

You are a financial analyst of AAT Co. Ltd. The Finance Director has asked you to calculate the Weighted Average Cost of Capital (WACC) of the company and then add a 2% premium to the figure you calculated as a discount rate in evaluating the project.

**Required:**

- (a) What is the market value of the common stock? (2 marks)
- (b) What is the market value of the bonds? (2 marks)
- (c) What is the cost of equity? (5 marks)
- (d) What is the before-tax cost of debt? (2 marks)
- (e) What is the weighted average cost of capital (WACC)? (5 marks)
- (f) Why is a premium percentage of, say 2%, often added to the WACC when it is used as a discount rate in evaluating the project? (4 marks)

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

Apart from financial evaluation, environmental accounting is also becoming important in strategic management. Techniques such as PEST and SWOT analyses are employed by management before they take on a project involving by different departments. In management accounting, departments or divisions can be classified as revenue centre, profit centre, cost centre and investment centre in accordance with the activities they perform.

**Required:**

- (a) What is PEST? Describe briefly what the PEST headings stand for. (6 marks)
- (b) Distinguish among revenue centre, profit centre, cost centre and investment centre. Which category would you assign to a government funded hospital organization with annual funding of over \$30 billion? Can it be treated as a profit centre? Explain briefly. (10 marks)
- (c) What is the main rationale behind responsibility accounting? (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:

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

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

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

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

### 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 $\beta$ ):

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

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

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

### Normal Distribution:

$$Z = (\bar{x} - \mu) / \sigma / \sqrt{n}$$

### t-distribution:

$$t_{n-1} = (\bar{x} - \mu) / S / \sqrt{n}$$

## 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	15.5823	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	6.6416
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	19.5665	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	6491206733317.10	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	72145.693	135614.927	254828.441	478332.529
120	2496681.8	6713993.8	18008174.1	48134233.5	128129626.7
240	685681170770.6	5409336944300.8	42158299391998.1	324366716885585.0	2462580441213620.0

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# Answers

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Paper II  
PBE Management  
Accounting and Finance  
(June 2009 Session)

**SECTION A (Total: 40 marks)****Answer 1(a)****Cash Collection Budget - April to June**

	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>Total</u>
Sales (units)		20,000	50,000	30,000	100,000
Price (\$)		500	500	500	500
Revenue (\$)		10,000,000	25,000,000	15,000,000	50,000,000
Collection					
in the month of sales		7,000,000	17,500,000	10,500,000	35,000,000
in the month following sales	300,000	300,000	2,500,000	6,250,000	9,050,000
Total (\$)		7,300,000	20,000,000	16,750,000	44,050,000

**Answer 1(b)****Production Budget - April to June (all in units)**

	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>Total</u>
Inventory	20,000	50,000	30,000	100,000
add: ending inventory	10,000	6,000	5,000	5,000
less: beginning inventory	(4,000)	(10,000)	(6,000)	(4,000)
Production (kg)	26,000	46,000	29,000	101,000

**Answer 1(c)****Direct Material Purchase Budget - April to June (all in units)**

	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>Total</u>
Material Usage	26,000	46,000	29,000	101,000
add: ending material	4,600	2,900	2,300	2,300
less: beginning material	(2,600)	(4,600)	(2,900)	(2,600)
Material purchase (kg)	28,000	44,300	28,400	100,700

**Answer 1(d)**

**Cash Disbursement Budget - April to June (all in \$)**

	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>Total</u>
Credit Purchase	1,120,000	1,772,000	1,136,000	4,028,000
<u>Cash disbursement</u>				
Paid in the month of purchase	560,000	886,000	568,000	2,014,000
Paid in the month following purchase	120,000	560,000	886,000	1,566,000
Total (\$)	680,000	1,446,000	1,454,000	3,580,000

**Answer 1(e)**

Divisional management has different behaviour when they prepare budgets and this may not be in line with the target set by the top management. Apparently when management prepares a budget, they try to reduce expenses in order to produce better profits. In the case of Cost Centre, the more future expense is budgeted, the more resources they have. In the case of Profit Centre, inflated but achievable revenue also implies more resources, thus management may try to inflate figures when they prepare a budget.

**Answer 1(f)**

Accounts receivable at the end of June is the amount of revenue not yet collected in June = \$3,750,000 [ $\$15,000,000 \times 25\%$ ].

**Answer 1(g)**

Accounts payable at the end of June is the amount of purchase not yet paid in June = \$568,000 [ $28,400 \times 40\text{kg} \times 50\%$ ].

**Answer 2(a)**

Initial outlay	=	\$5,000,000	
Working capital requirement	=	<u>\$500,000</u>	(will be released at the end of year 20)
Total initial cash requirement	=	<u>\$5,500,000</u>	

Cash profit = \$1,000,000 (\$3,000,000 - \$2,000,000)

Annuity factor = 7.4694 (n=20, r = 12%)

NPV =  $(\$5,500,000) + 7.4694 * \$1,000,000 + \$500,000 / (1+12\%)^{20} = \$2,021,233$

**Answer 2(b)**

In NPV analyses, all cash flows are projected cash flows which may lead to a high degree of variation and subjectivity. On the other hand, the discount rate being used is also an estimate. Different discount rates will lead to different results.

**Answer 2(c)**

The Payback method has the merit of simplicity when compared with NPV as it does not involve the process of discounting. However, it is argued that payback does not consider the time value of money or cash flow after payback and sometimes investment decisions are quite arbitrary.

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



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

**Answer 3(a)**

$$EOQ = \sqrt{\frac{2 \times \text{Ordering Cost} \times \text{Annual Demand}}{\text{Inventory Cost}}}$$

**Answer 3(b)**

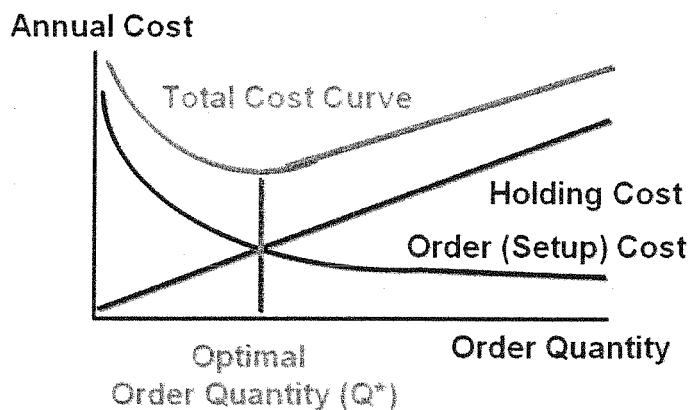
The inventory carrying cost is 30% of the unit cost of \$5,000. Hence, the inventory carrying cost is  $30\% \times \$5,000 = \$1,500$

$$EOQ = \sqrt{\frac{2 \times 250 \times 7,200}{\$1,500}} = 48.99 \text{ kg} = 49 \text{ kg (use whole figure)}$$

**Answer 3(c)**

EOQ allows a business to reduce the total cost of holding and ordering inventory. This in turn reduces overall cost and increases profit.

**Answer 3(d)**



**Answer 3(e)**

Total = Carrying Cost + Ordering Cost

$$\text{Current cost} = 100 \text{ kg}/2 \times \$1,500 + 7,200 \text{ kg}/100 \text{ kg} \times \$250 = \$93,000$$

$$\text{New cost} = 49 \text{ kg}/2 \times \$1,500 + 7,200 \text{ kg}/49 \text{ kg} \times \$250 = \$73,484.7$$

$$\text{Cost saving} = \$19,515 \text{ (rounded)}$$

**Answer 3(f)**

Average daily demand =  $7,200 \text{ kg}/365 = 19.7 \text{ kg}$

For 2-day shelf life, total weight =  $39.4 \text{ kg}$  ( $19.7 \times 2$ ). As EOQ is  $49 \text{ kg}$ , about  $10 \text{ kg}$  of stock has to be scrapped and this is not acceptable.

**Answer 3(g)**

Major assumptions under the EOQ model are as follows:

1. The demand and lead time are constant and known so that the number of orders placed is known.
2. Purchase price is constant. The model does not include EOQ calculation under variable price.
3. There is no buffer inventory held. That is, all inventory will be used up.
4. There are no quantity discounts offered by the supplier.

**Answer 4(a)**

Placing is the issuance of shares to private investors but not to the general public. It is best used for smaller issues of shares and is unlikely be used for larger issues of shares.

**Answer 4(b)**

No matter what method a company uses to raise capital, its ultimate goal is to generate cash for its business. Placing is a source of finance. When the share prices are high, through the placing process of issuing shares to investors, a company is able to get more cash when compared with issuing shares when the share prices are low. This is in line with observations that the number of stock issuances are highest when the stock market (share prices) is booming.

**Answer 4(c)**

A rights issue is an offer to the existing shareholders to subscribe for more shares in proportion to their existing holding.

#### **Answer 4(d)**

Rights issues are not popular among investors as after the rights issue more shares are being traded in the market, earnings per share will drop and the share price will be affected. If investors do not subscribe to the rights, their ownership will be diluted and less dividend will be received. If investors subscribe to the rights, they need to buy them out of their own pockets. The return of this additional investment depends on the prospects of the company concerned.

#### **Answer 4(e)**

Current market value of Obama (20,000,000 x \$30)	\$60,000,000
New market value of Obama	\$63,000,000
Number of shares after the rights issue	2,400,000
Share price after the rights issue	\$26.25 per share

The value of one right =  $\$30 - \$26.25 = \$3.75$

#### **Answer 4(f)**

When facing a rights issue, investors may take the following actions:

1. Take up the rights and buy additional shares
2. Renounce their rights and sell them in the market. This is equivalent to 'take no action'.
3. Renounce part of their rights and sell the rest
4. Sell some shares and use the proceeds to exercise the rights.

#### **Answer 5(a)**

From the question, number of common stock outstanding = 250,000  
Market value of common stock =  $\$40 \times 250,000 = \$10,000,000$

#### **Answer 5(b)**

From the question, number of bonds outstanding = 10,000  
Market value of the bond =  $102\% \times 10,000 \times \$1,000 = \$10,200,000$

Note: the bond is sold at a premium and thus 102% is required

#### **Answer 5(c)**

There are two ways to calculate the cost of equity. One is the CAPM model and the other is the dividend growth model. In this question, the Beta coefficient of the stock is not given and thus it is not applicable.

By using the dividend growth model,

$$P_0 = D_1 / (r - g)$$

Where  $P_0$  is the current stock price,  $D_1$  is the coming dividend and  $g$  is the dividend growth rate.

$$\text{Hence } r = D_1 / P_0 + g = \$2 / \$40 + 3\% = 8\%$$

The cost of equity is 8%.

#### **Answer 5(d)**

This is a bit tricky but straightforward to those who are familiar with bond valuation. The before-tax cost of debt is the yield rate of similar types of bond, which is 5.5%.

#### **Answer 5(e)**

The weight average cost of capital (WACC) is given by the following formula

$$\text{WACC} = D/V \times R_d \times (1 - \text{tax rate}) + E/V \times R_e$$

$$R_d = 5.5\%$$

$$R_e = 8\%$$

$$\text{Market value of common stock} = \$10\text{M}$$

$$\text{Market value of bond} = \$10.2\text{M}$$

$$\text{Total market value of the firm} = \$20.2\text{M}$$

$$\text{WACC} = \$10.2\text{M} / \$20.2\text{M} \times 5.5\% \times (1 - 15\%) + \$10\text{M} / \$20.2\text{M} \times 8\% = 6.32\%$$

#### **Answer 5(f)**

In market practice, a premium is usually added to the theoretical WACC calculated. This can reduce the estimation error made in calculating the cost of equity and cost of debt. In addition, different projects have different risks, additional return is required to reflect the risk level involved in investment in the projects.

#### **Answer 6(a)**

PEST refers to four forces or influences on the strategy of an organization. These are Political, Economic, Social and Technological forces.

Political forces concern pressures and attitudes from political parties and government policies. Economic forces originate from inflation rate, foreign exchange rate, employment rate etc. Social forces arise from within the society itself such as amount of paid holiday and social attitudes to smoking. Technological force arises from advancement in technology such as introduction of robots and digital equipment.

**Answer 6(b)**

A Revenue centre is a centre devoted to generating revenue with no responsibility for production. A Profit centre is a part of a business accountable for costs and revenue. It is also called a business unit. A Cost centre is a production or service location whose cost may be attributed to cost units. Managers are evaluated on the extent of cost control. Investment centre is a profit centre whose performance is measured by its return on capital employed or similar parameters.

A government funded hospital organization is likely to be regarded as a cost centre because it provides services to patients and the costs could be attributed to cost units such as operation theatres or out-patient services. In addition, a government funded hospital is unlikely used to generate a profit and thus cannot be regarded as a profit centre.

**Answer 6(c)**

Responsibility Accounting is a system under which management is given decision-making authority from top management and has responsibility for each activity, including costs, revenues and profits within a specific area of the company, such as a division or a business unit. That is, managers are accountable to what they have control. The rationale behind responsibility accounting is that each manager's performance should be judged by how well he or she manages those items under his or her control, as assigned by top management.

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

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# Examination Panelist's Report

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Paper II  
PBE Management  
Accounting and Finance  
(June 2009 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 much better than the last diet under the old syllabus. However, it was observed that students did not have good knowledge of basic finance and management accounting terms such as rights issue, placing, revenue centre, cost centre and responsibility accounting. Again, quite a lot of students did not demonstrate good answering techniques. For example, they presented different parts of a question out of sequence and scattered their answers to a question across different pages. This gives rise to the risk of an error in the calculation of marks and is not encouraged. Students are advised to practise the past papers, to read related articles published by HKIAAT and to read the study text carefully. In addition, besides the calculation, students are encouraged to apply their knowledge in solving real life problems.

## **Specific Comments**

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

#### **Question 1 – 20 marks**

This is a straightforward question and it was expected candidates would be able to get high marks. It was a bit disappointing therefore that candidates failed to give reasons other than inflation with regards to inflated figures in both revenue and expense in a budget.

#### **Question 2 – 20 marks**

This is again a standard NPV problem and it was expected students would be able to get a pass mark. However, it was surprising that quite a number of candidates used the manual method to create 20 rows in calculating the NPV of the project rather than using the annuity formula or the table provided.

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

#### **Question 3 – 20 marks**

This question tested candidates' knowledge of Economic Order Quantity (EOQ). The performance was poorer than expected. Candidates failed to give the correct formula and did not draw the correct graph showing the relationship between Holding Cost, Order Cost and Total Cost. It appeared that students did not have a good understanding of the ultimate goal of using EOQ.

#### **Question 4 – 20 marks**

This question tested the candidates' ability in understanding various ways to raise capital from the financial market. Candidates failed to distinguish between placing and rights issue

though there was plenty of coverage on these topics at the beginning of this year. Candidates performed satisfactorily in calculating the ex-rights price but failed to give the correct answer for the value of a right.

Question 5 – 20 marks

This is a standard question on WACC but the performance was not satisfactory. In particular, candidates failed to understand the meaning of the yield rate of a bond which was the same as the before-tax cost of debt. The question had already divided into different parts to guide students in getting the cost of equity, the cost of debt, and their respective market values but candidates failed to observe this structure.

Question 6 – 20 marks

This question was comparatively poorly answered compared to the others. Candidates could name correct titles regarding PEST but failed to give a detailed elaboration. It was very disappointing that some candidates failed to explain the meaning of cost centre, revenue centre, profit centre and investment centre. Some candidates even regarded responsibility accounting as responsibility of accounting. The former is concerned with accountability and control but the latter may be concerned with reporting and other issues with a wider scope.

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