



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

Professional Bridging Examination

December 2010 Session

Paper II
PBE Management Accounting and
Finance

Questions & Answers
Booklet

The suggested answers are longer than what candidates are expected to give in the examination. The purpose of the suggested answers is meant to help candidates in their revision and learning. The suggested answers may not contain all the correct points and candidates should note that credit will be awarded for valid answers which may not be fully covered in the suggested answers.

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Professional Bridging Examination

Paper II PBE Management Accounting and Finance

December 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

Happy Theme Park is a listed theme park company. It operates many theme parks in Europe and the United States.

Project Evaluation

It is now 31 Dec 2010. Happy Theme Park is considering to build a new theme park in Hong Kong. After consolidating data from the Marketing Department, they have the following projected number of visitors.

<u>Year</u>	
2011	7 million
2012	7.5 million
2013	8 million
2014	9 million
2015	10 million

After 2015, it is expected that the number of visitors will remain constant.

Revenue is generated from three sources: admission fees, souvenirs, and food and beverage. It is estimated that 65% of the visitors are adults and 35% are children. The current admission fees for adults and children are respectively \$300 and \$150. From past data, each adult visitor spends \$80 on food and beverage (F&B) and the corresponding spending for a child is \$40. Souvenirs are a good source of business and the related spending per adult and per child are respectively \$250 and \$50. Inflation is ignored in the analysis.

Operating costs are 70% of the revenue. Initial construction costs are \$30 billion and these costs are depreciated over 30 years of initial planning period. The tax rate is 16.5% and there is no borrowing.

Special Order

In the past, sales of souvenirs generated a good source of revenue for theme parks operated in other countries. Souvenirs include a variety of products such as caps, t-shirts, photo frames and candy. Some souvenirs are produced in-house through factories in China and some are purchased from outside manufacturers. On some occasions, factories may receive special orders from other companies. Several weeks ago, Happy Theme Park received a special order enquiry from ABC Company. ABC wants to produce caps similar to Happy's model no. 88 and has offered to purchase 3,500 units from factories owned by Happy Theme Park in Dongguan. Each cap involves direct materials of \$15; direct labour of \$10 (2 hours at \$5 per hour); and manufacturing overheads of \$20 (2 hours at \$10 per hour). The normal selling price of cap model no. 88 is \$60. ABC has offered Happy Theme Park a price of only \$40 because of the large quantity it is willing to purchase.

Happy Theme Park needs a modification in the design that will allow a \$4 reduction in direct material costs. Its production engineer notes that the company will incur \$10,000 in additional set-up costs and will have to purchase a \$5,000 special device to manufacture these caps. The device will be discarded after the completion of the special order. Total manufacturing overhead costs are applied to production at the rate of \$10 per labour hour. This figure is based on budgeted annual fixed overheads of \$96,000 and planned production activity of 24,000 labour hours. Happy Theme Park will allocate \$5,000 of existing fixed administrative costs to this special order.

Question 1 (25 marks – approximately 45 minutes)

You are the chief financial analyst of Happy Theme Park and you are asked by the Finance Director to lead the budgeting exercise for a period of 30 years from year 2011.

Required:

- (a) Write a memo to brief the Finance Director on the difference between the Discounting Method and the Non-Discounting Method in project evaluation by giving TWO examples in each category. (5 marks)
- (b) What is the first year revenue from admissions, sales of souvenirs and food and beverage respectively? Show the breakdowns for both adults and children. (2 marks)
- (c) What is the first year earnings before interest and tax (EBIT)? (2 marks)
- (d) In tabular format, calculate the cash profit (OCF) for the first five years (2011 – 2015) of operations. (5 marks)
- (e) If the management demands a required return of 5%, what is the net present value (NPV) of this project? (6 marks)
- (f) What is the general method used to determine the required rate of return in project evaluation? Explain by using a suitable formula. (5 marks)

Question 2 (15 marks – approximately 27 minutes)

Regarding the acceptance of the special order, the chief financial analyst wants to reject the special order because it is not viable financially.

Required:

(a) Do you agree with the chief financial analyst's conclusion that Happy Theme Park has spare capacity in its factory in Dongguan? Support your answer with calculations and qualitative considerations.

(12 marks)

(b) If the factory has no excess capacity, should the special order be rejected? Briefly explain.

(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)

You are in charge of the Treasury Department of a Multinational Corporation. One day, you read the Stock Exchange Journal and find the following table showing the yield rate of different maturity of US Treasury Bills.

Maturity	Yield (%)	Yesterday	Last Week	Last Month
3 Month	0.16	0.16	0.16	0.15
6 Month	0.25	0.25	0.26	0.32
2 Year	1.16	1.07	0.94	1.10
3 Year	1.68	1.63	1.47	1.60
5 Year	2.63	2.59	2.39	2.52
10 Year	3.66	3.68	3.54	3.48
30 Year	4.51	4.54	4.45	4.28

Required:

- (a) Sketch a yield curve according to the information given in the above table. (4 marks)
- (b) Based on the answer in (a), is it a normal yield curve? Explain the expected economic conditions of this curve. (3 marks)
- (c) Sketch an inverted yield curve. (2 marks)
- (d) Explain the “term structure of interest rate”. Is it static? (4 marks)
- (e) Explain the behaviour in borrowing terms when management observes a steeply upward sloping yield curve. (4 marks)
- (f) What are the main differences between Capital Market and Money Market? (3 marks)

Question 4 (20 marks – approximately 36 minutes)

Metro Auto manufactures and sells private cars. Its manufacturing plant is located in Japan. In recent years, country C constitutes 60% of its external sales of finished cars. Metro needs to convert the sales in country C to Japanese Yen regularly. During the manufacturing process, the majority of parts are sourced in country C. Due to expansion, Metro is constructing new manufacturing plant in other parts of Japan and a loan of ¥100 billion is outstanding.

Required

- (a) What are the two main financial risks faced by Metro as outlined above? (2 marks)
- (b) Describe one way to reduce risk brought about by receipt of currency in country C. (3 marks)
- (c) Describe one way to reduce risk brought about by the outstanding loan. (3 marks)
- (d) Suggest one strategic decision to the senior management of Metro in order to reduce the overall risk exposure of the business of Metro. (4 marks)
- (e) What are the meanings of arbitrage and hedging? (4 marks)
- (f) Explain how a low interest rate in one currency and a high interest rate in another currency can bring about arbitrage. (4 marks)

Question 5 (20 marks – approximately 36 minutes)

H1N1 Corp. is a listed toy manufacturing company in Hong Kong. It just paid a \$1.50 per share annual dividend. Analysts expected that the dividend will grow to \$2.00, \$2.50, \$3.00, and \$3.50 a share over the next four years, respectively. After that growing period, the dividend will grow continually at 3% per share.

Required:

- (a) What is the market price of this stock if the required return is 10%? (6 marks)
- (b) Write down a formula generally used to calculate the required return of stock. From the formula, what parameters are required in the calculation? (4 marks)
- (c) Interpret the meaning of the non-percentage parameter in (b) by dividing it into THREE categories. (6 marks)
- (d) “The higher the dividend growth, the higher the stock price”. Do you agree? Illustrate your reasoning by using a formula. (4 marks)

Question 6 (20 marks – approximately 36 minutes)

A company is exploring the construction of a new hotel in a resort area in Wuhan city in mainland China. The Financial Planning Department estimates that land and building costs are RMB80 and RMB150 per square foot. A hotel room has an average of 800 sq.ft. Besides these costs, the company needs to pay interest, tax and general overheads which are expected to be 35% of land and construction costs. Initial per-room expenditure for bedroom furnishings and decorations is RMB15,000, for room supplies is RMB2,000 and for marketing, it is RMB5,000.

To safeguard the estimation error, 10% estimation errors are added to the calculated costs. The construction period is 2 years. The room rate is set at RMB1 of RMB1,000 of the total cost i.e. 1/1000 of the total cost. Upon completion, comparable facilities are expected to charge RMB240 per day as reflected by the prevailing room rate in the market.

Required:

- (a) Calculate the total cost of a hotel room. (6 marks)
- (b) What is the planned hotel room rate? Compared with the market rate, is the planned hotel rate a competitive one? (4 marks)
- (c) Distinguish between cost plus pricing and target pricing. (3 marks)
- (d) Besides costs, what suggestions would you make to the management team in order to make the new hotel more attractive based on the balanced scorecard framework? Illustrate them with measurable examples. (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:

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

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

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

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

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 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
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	11.9760	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	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	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	5409338944300.8	42158299391998.1	324366716885585.0	2462580441213620.0

Answers

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

SECTION A (COMPULSORY) (Total: 40 marks)

Answer 1(a)

To: Finance Director
From: Chief Financial Analyst
Re: Discounting Method and Non-Discounting Method

This memo gives brief outlines on the difference between the discounting method and non-discounting method in project evaluation.

In the discounting method, present value is calculated during the evaluation process. Net present value (NPV) and internal rate of return (IRR) are two common discounting methods.

In the non-discounting method, present value is not used, instead other evaluation criteria. In the payback method, the project with the shortest payback is chosen. In the accounting rate of return, the project which gives the highest accounting return is selected.

We may discuss the difference further.

Regards,
XXX
Chief Financial Analyst

Style

Difference of DCF and Non-DCF

The major differences between discounted cash flow and non-discounted cash flow analysis are:

Discounted Cash Flow (DCF)	Non-discounted Cash Flow (Non-DCF)
<ul style="list-style-type: none">- Takes into account both timing of cash flows and total cash flow over project life- Comparatively more complicated to calculate with more finance knowledge- Comparatively more difficult to understand by users with non-finance background- More accurate for decision making	<ul style="list-style-type: none">- Only takes into account future cash flow without considering the time value- Comparatively less complicated to calculate and easy to be done by most people- Comparatively more easy to understand and does not require too much finance background- May lead to wrong decision making

Answer 1(b)

Year - 2011

Admission revenue from adult visitors = $7M \times 0.65 \times \$300 = \$1,365M$
Admission revenue from child visitors = $7M \times 0.35 \times \$150 = \$367.5M$
Total = $\$1,732.5M$

F&B revenue from adult visitors = $7M \times 0.65 \times \$80 = \$364M$
 F&B revenue from child visitors = $7M \times 0.35 \times \$40 = \$98M$
 Total = $\$462M$

Souvenir revenue from adult visitors = $7M \times 0.65 \times \$250 = \$1,137.5M$
 Souvenir revenue from child visitors = $7M \times 0.35 \times \$50 = \$122.5M$
 Total = $\$1,260M$

Answer 1(c)

Year - 2011

Total revenue = $\$1,732.5M + \$1,260M + \$462M = \$3,454.5M$
 Operating cost = $\$3,454.5M \times 0.7 = \$2,418.15$
 Depreciation = $\$1,000M^{(*)}$
 EBIT = $\$36.35M$

(*) Depreciation = $\$30 \text{ billion} / 30 \text{ years}$

Answer 1(d)

Year - 2011

OCF = EBIT + Depreciation - Tax
 Tax for first year = $\$36.35M \times 16.5\% = 6M$

<u>OCFs in \$M</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015-2030</u>
Total Revenue	3,454.50	3,701.25	3,948.00	4,441.50	4,935.00
Operating cost	2,418.15	2,590.88	2,763.60	3,109.05	3,454.50
Depreciation	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
EBIT	36.35	110.38	184.40	332.45	480.50
Tax (16.5%)	6.00	18.21	30.43	54.85	79.28
Profit after Tax	30.35	92.16	153.97	277.60	401.22
OCF per year	1,030.35	1,092.16	1,153.97	1,277.60	1,401.22

Answer 1(e)

$$NPV = NPV^1 + NPV^2 + NPV^3 + NPV^4 + \frac{\text{Ordinary annuity}}{(1.05)^4} - \text{Initial Investment}$$

$$NPV = \$1,030.35M / (1+5\%)^1 + \$1,092.16M / (1+5\%)^2 + 1,153.97M / (1+5\%)^3 + 1,277.6M / (1+5\%)^4 + \$1,402.22M \times [(1 - (1+5\%)^{-26}) / 5\%] / (1+5\%)^4 - \$30,000M = (\$9,408.66M)$$

Answer 1(f)

The discount rate used in project evaluation usually makes reference to the weighted average cost of capital (WACC). WACC consists of the cost of equity R_E and the cost of debt R_D . The rate is determined by the relative weight of equity (E/V) and debt (D/V) in the capital structure where $V = E + D$. For the cost of debt, the after-tax cost of debt is used.

$$WACC = (E/V) \times R_E + (D/V) \times R_D \times (1 - T_c)$$

Answer 2(a)

The conclusion made by the chief financial analyst is not correct as the special order is able to generate net contributions of \$9,500 for the Happy Theme Park. This is illustrated as follows:

	\$	\$
<u>Selling price</u>		40
<u>Variable costs</u>		
Direct material (\$15-\$4)	11	
Direct labour	10	
Manufacturing overhead (2 hours x \$6*)	12	33
Unit Contribution Margin		<u>7</u>
Total Contribution Margin (3,500 units x \$7)		24,500
Less: Additional set-up costs	10,000	
Special device	5,000	15,000
		<u>9,500</u>

* The fixed manufacturing overhead = \$96,000 / 24,000 labour hours = \$4 per hour.
Variable manufacturing overhead = \$10 - \$4 = \$6

However, a profit of \$9,500 is not significant to a listed company. The forecast may not be accurate and the acceptance of the special order may interrupt normal operations.

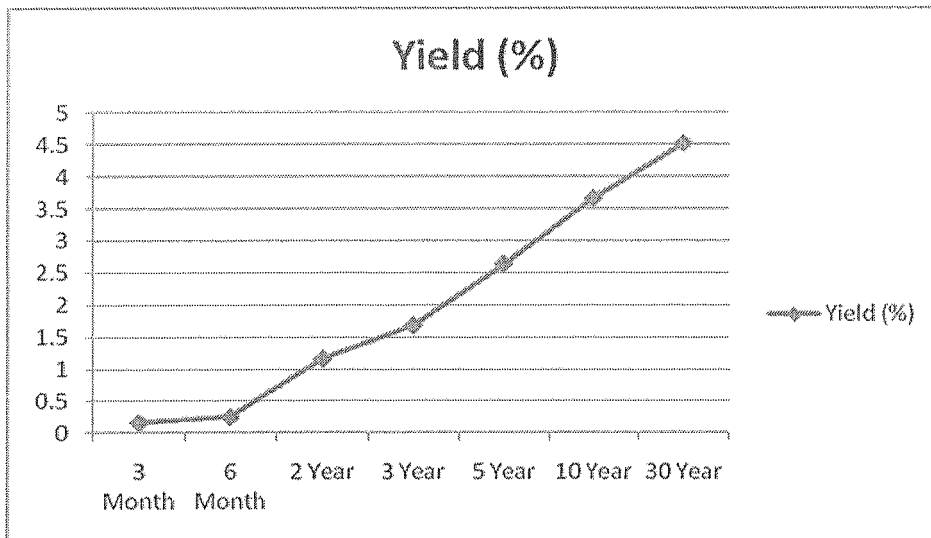
Answer 2(b)

If there is no excess capacity, the Happy Theme Park can sell each cap at \$60 instead of \$40. Its profitability will be affected if it takes up the special order. It should be rejected.

* * * END OF SECTION A * * *

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

Answer 3(a)



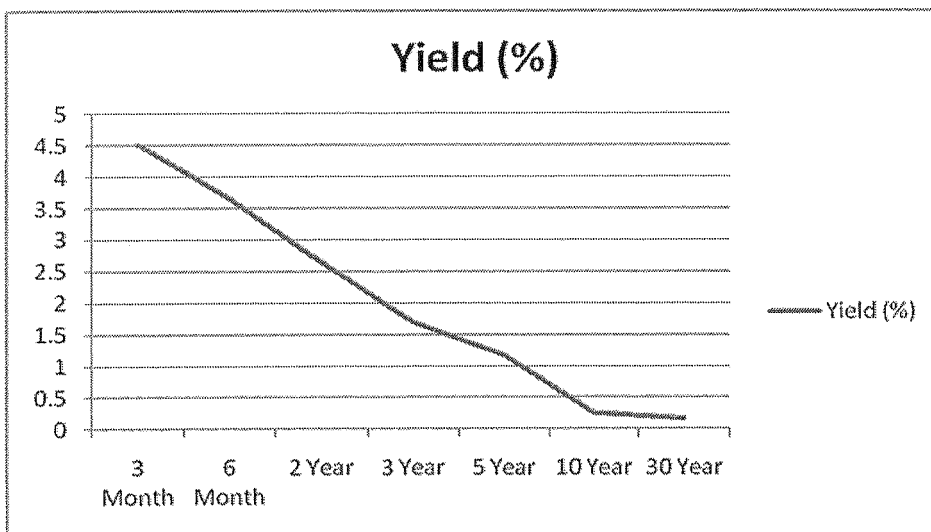
This is an upward sloping yield curve.

Answer 3(b)

This is a normal yield curve as the longer the maturity, the higher the yield rate. Investors demand and expect a higher interest rate when the maturity period is longer. It indicates an economic upturn and investors would demand a liquidity premium when they hold bonds for a longer period.

Answer 3(c)

An inverted yield curve



Answer 3(d)

The term structure of interest rate refers to the relationship between the long term interest rate and short term interest rate due to differences in inflation, maturity and interest rate risk. In drawing up the relationship, various premiums are added to reflect the risks involved. The term structure is not a static structure and it is changing all the time.

Answer 3(e)

When management observes a steeply upward sloping yield curve, it indicates an economic upturn. Interest rates and inflation are expected to rise significantly in the future and more borrowing is expected. Investors demand a higher liquidity premium as the longer the holding period, the higher the impact of inflation. To compensate, investors ask for a higher liquidity premium.

Answer 3(f)

Capital market refers to an investment market with an investment horizon longer than 1 year. Examples include stocks and bonds. Money market refers to an investment market with an investment horizon shorter than 1 year. Examples include short term notes and fixed deposits shorter than 1 year.

Answer 4(a)

Metro Auto is exposed to exchange rate risk and interest rate risk as it has foreign revenue generated from country C and has an outstanding loan in Japanese Yen subject to a fluctuating interest rate.

Answer 4(b)

To reduce the risk brought about by revenue generated from Country C, Metro may consider purchasing a currency forward agreement to hedge against the variation in currency of country C. By purchasing a currency forward agreement, Metro can better plan for the expected exchange rate in converting back the revenue into Japanese Yen.

Answer 4(c)

Metro may use an interest rate swap to reduce the risk brought about by the outstanding loan when the interest rate fluctuates. By using a swap, Metro can better plan for the expected interest rate exposed by the loan. An interest rate swap may involve a fixed rate to variable rate or vice versa, or a mixture of multiple swap transactions.

Answer 4(d)

Metro management may consider moving the manufacturing plant from Japan to country C as country C is its major market and source of raw materials. Metro can make use of the revenue received in country C to purchase raw materials there. Since all are in country C's

currency, this is a form of natural hedging. This could reduce transportation costs and exposure to exchange rate risk.

Answer 4(e)

Hedging

Hedging refers to a mechanism to reduce risk by some arrangement. For example, buying a put option of investment vehicle A could reduce loss from a fall in prices of that vehicle.

Financial markets offer participants the opportunity to reduce risk through hedging which involves taking out counterbalancing contracts to offset existing risks. For example, if a Hong Kong exporter is awaiting payment in euros from a French customer he is subject to the risk that the euro may decline in value over the credit period. To hedge this risk he could enter a counterbalancing contract and arrange to sell the euros forward (agree to exchange them for Hong Kong dollars at a fixed future date at a fixed exchange rate). In this way he has used the foreign exchange market to insure his future HK\$ receipt. Similar hedging possibilities are available on interest rates and on equity prices.

Arbitrage

Arbitrage refers to making a profit by buying in one market and selling in another market due to a price difference in the commodities or investment products concerned.

Arbitrage is the process of buying a security at a low price in one market and simultaneously selling in another market at a higher price to make a profit.

Although it is only the primary markets that raise new funds for deficit units, well-developed secondary markets are required to fulfil the above roles for lenders and borrowers. Without these opportunities more surplus units would be tempted to keep their funds 'under the bed' rather than putting them at the disposal of deficit units. However, the emergence of disintermediation (reduction in the use of intermediaries) and securitisation (conversion into marketable securities), where companies lend and borrow funds directly between themselves, has provided a further means of dealing with cash flow surpluses and deficits.

Answer 4(f)

Investors may gain from arbitrage by borrowing currency A in a low interest rate country such as Japan, converting it into currency B such as Australian dollars and earning a higher interest rate in another country. After maturity, convert currency B back to currency A provided that there is no exchange rate loss. This can be done by signing a forward agreement which enables management to better plan for the expected exchange rate from the transaction.

Answer 5(a)

$$P = \frac{D1}{(1+r)^1} + \frac{D2}{(1+r)^2} + \frac{D3}{(1+r)^3} + \frac{D4}{(1+r)^4} + \frac{\frac{D5}{r-g}}{(1+r)^4}$$

$$P = 2\$/((1+10\%)^1) + \$2.5/((1+10\%)^2) + \$3/((1+10\%)^3) + \$3.5/((1+10\%)^4) + \$3.5 \times (1+3\%)/((10\%-3\%)/((1+10\%)^4) = \$43.7$$

Answer 5(b)

$R = R_f + \text{Beta} \times (R_m - R_f)$ where R_f is the risk free rate and R_m is the market return. R_f can be found from the interest rate of the Treasury Bill or the rate of Exchange Fund Note in Hong Kong. R_m can be found by using the return from the Hang Seng Index. In getting the required return, Beta must be known. Beta can be found from a professional investment website and it is different for different stocks.

Answer 5(c)

Beta can be divided into three categories. When beta is less than 1, the stock concerned has relatively less variability than the market return. Examples include defensive stocks such as public utilities. When beta is more than 1, the stock concerned has more variability than the market return. When beta is equal to 1, the stock concerned has the same variability as the market return. Examples include stocks which have a very high weight in the reference index.

Answer 5(d)

From $P = D_0/(r-g)$ where "r" is the required return of the stock and "g" is the dividend growth rate. If "g" is higher, the denominator is smaller and the stock price is higher. This is expected when there is a higher dividend growth rate, and this may result from better sales and profits. Investors expect a better future of the company and profit sharing from dividends and thus a higher stock price.

Answer 6(a)

	<u>(RMB)</u>	<u>Area</u>	<u>Total (RMB)</u>
Land Cost	80	800	64,000
Building Cost	150	800	120,000
Interest, tax			64,400
Initial per-room expenditure			15,000
Room supplies			2,000
Marketing			5,000
Total			270,400
Error			27,040
Total with error			297,440

Answer 6(b)

According to 1 of 1,000 rule, the room rate is 1/1,000 of the total construction cost.
Room rate = $297,440 / 1,000 \times 1 = \text{RMB}297.44$. The market rate for comparable rooms is RMB240, and this is still competitive as this is a new hotel and customers are expected to pay a premium.

Answer 6(c)

In cost plus pricing, the price of a product is determined by the cost plus certain profit margin. Target costing determines the cost of a product or service according to the target price that a customer is willing to pay and it is an estimated long-run cost.

Answer 6(d)

In addition to financial aspects, it is suggested that management improve on customer services and operational efficiency. Some measures include reducing customers' queuing time at check-out, reducing waiting time when customers make phone calls, minimising the time required for cleaning up rooms, introducing new products and facilities, minimising the number of customer complaints, and increasing the number of customer compliments. Such attributes form part of the Balanced Scorecard System and are as essential as financial attributes.

* * * END OF EXAMINATION PAPER * * *

Examination Panelist's Report

Paper II
PBE Management
Accounting and Finance
(December 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, performance was not satisfactory as quite a number of candidates did not master the fundamental skills and concepts of management accounting and finance such as construction of budget, calculation of operating cash flow (OCF), applying Balanced Scorecard, distinguishing Arbitrage and Hedging, knowing the details of WACC. Though it has been mentioned in previous reports, it was still observed that some students did not have good answering techniques. For example, they answered different parts of a question out of sequence and split up and scattered the answer to a question across different pages. However, I did see some slight improvements.

Specific Comments

Section A – Compulsory Questions

Question 1 – 25 marks

Candidates could generally distinguish between the discounting method and non-discounting method in project evaluation. However, quite a number of students failed to correctly calculate the earnings before interest and tax due to wrongly calculating depreciation and hence incorrectly calculating the operating cash flow (OCF). 1 billion is equivalent to 1,000 million and some candidates made mistakes in the conversion. It was also suggested that candidates should use a tabular format in presenting their results for project evaluation for easy reference. Part (g) was disappointing as many candidates did not know that the required rate of return in project return was WACC (weighted average cost of capital) which consists of the cost of debt and cost of equity. Quite a number of candidates misinterpreted it as internal rate of return (IRR)

Question 2 – 15 marks

This question tested candidates' abilities in solving problems related to special orders with spare or limited capacity. The performance was not so satisfactory and candidates were weak in presenting the argument involving opportunity cost.

Section B – Optional Questions

Question 3 – 20 marks

This question tested candidates' knowledge on bond yield and its characteristics. The performance was satisfactory. Most candidates could distinguish between a normal yield curve and inverse yield curve. The part on "term structure of interest rate" and behavior in observing a steeply upward sloping yield curve were not answered satisfactorily. Some candidates still could not tell the difference between Capital Market and Money Market.

Question 4 – 20 marks

This question was not answered satisfactorily. Students did not understand the situation and pointed out the risks faced by the companies concerned, namely interest rate risk and currency risk, and hence the risk management strategy. Arbitrage and hedging are two fundamental topics in finance and candidates seemed to be unfamiliar with these two terms.

Question 5 – 20 marks

This question was not answered satisfactorily. It asked for the dividend growth model and the Capital Asset Pricing Model (CAPM). Most students could answer the part concerning the stock valuation formula in part (a) but failed to convert P4 to P0. For part (b) to (d), from the questions asked (three categories in the non-percentage parameter), it was not too difficult to infer that it was asking about CAPM, not the Dividend Growth Model.

Question 6 – 20 marks

This question tested candidates' skills in determining the price of hotel rooms. This question was answered mostly satisfactorily in this examination. In part (d), candidates were weak in applying the Balanced Scorecard concept to solve a real-life problem such as how to improve the hotel operational, learning and growth, and customer satisfaction. Some candidates even disregarded the requirement to present the answer under the Balanced Scorecard framework.

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

