Professional Level – Options Module

Advanced Performance Management

Friday 6 June 2008

Time allowed
Reading and planning: 15 minutes
Writing: 3 hours

This paper is divided into two sections:

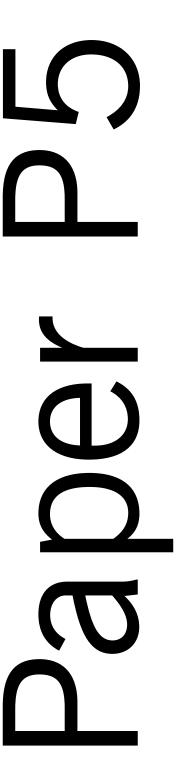Section A – BOTH questions are compulsory and MUST be attempted

Section B – TWO questions ONLY to be attempted

Do NOT open this paper until instructed by the supervisor.

During reading and planning time only the question paper may be annotated. You must NOT write in your answer booklet until instructed by the supervisor.

This question paper must not be removed from the examination hall.

ACCA

The Association of Chartered Certified Accountants

Section A – BOTH questions are compulsory and MUST be attempted

1   The Health and Fitness Group (HFG), which is privately owned, operates three centres in the country of Mayland. Each centre offers dietary plans and fitness programmes to clients under the supervision of dieticians and fitness trainers. Residential accommodation is also available at each centre. The centres are located in the towns of Ayetown, Beetown and Ceetown.

The following information is available:

(1)   Summary financial data for HFG in respect of the year ended 31 May 2008.

	Ayetown $000	Beetown $000	Ceetown $000	Total $000
Revenue:				
Fees received	1,800	2,100	4,500	8,400
Variable costs	(468)	(567)	(1,395)	(2,430)
Contribution	1,332	1,533	3,105	5,970
Fixed costs	(936)	(1,092)	(2,402)	(4,430)
Operating profit	396	441	703	1,540
Interest costs on long-term debt at 10%				(180)
Profit before tax				1,360
Income tax expense				(408)
Profit for the year				952
Average book values for 2008:				
Assets				
Non-current assets	1,000	2,500	3,300	6,800
Current assets	800	900	1,000	2,700
Total assets	1,800	3,400	4,300	9,500
Equity and liabilities:				
Share capital				2,500
Retained earnings				4,400
Total equity				6,900
Non-current liabilities				
Long-term borrowings				1,800
Total non-current liabilities				1,800
Current liabilities	80	240	480	800
Total current liabilities	80	240	480	800
Total liabilities				2,600
Total equity and liabilities				9,500

(2)   HFG defines Residual Income (RI) for each centre as operating profit minus a required rate of return of 12% of the total assets of each centre.

(3)   At present HFG does not allocate the long-term borrowings of the group to the three separate centres.

(4)   Each centre faces similar risks.

(5)   Tax is payable at a rate of 30%.

(6)   The market value of the equity capital of HFG is $9 million. The cost of equity of HFG is 15%.

(7) The market value of the long-term borrowings of HFG is equal to the book value.

(8) The directors are concerned about the return on investment (ROI) generated by the Beetown centre and they are considering using sensitivity analysis in order to show how a target ROI of 20% might be achieved.

(9) The marketing director stated at a recent board meeting that 'The Group's success depends on the quality of service provided to our clients. In my opinion, we need only to concern ourselves with the number of complaints received from clients during each period as this is the most important performance measure for our business. The number of complaints received from clients is a perfect performance measure. As long as the number of complaints received from clients is not increasing from period to period, then we can be confident about our future prospects'.

Required:

(a) The directors of HFG have asked you, as management accountant, to prepare a report providing them with explanations as to the following:

(i) Which of the three centres is the most 'successful'? Your report should include a commentary on return on investment (ROI), residual income (RI), and economic value added (EVA) as measures of financial performance. Detailed calculations regarding each of these three measures must be included as part of your report;

Note: a maximum of seven marks is available for detailed calculations. (14 marks)

(ii) The percentage change in revenue, total costs and net assets during the year ended 31 May 2008 that would have been required in order to have achieved a target ROI of 20% by the Beetown centre. Your answer should consider each of these three variables in isolation. State any assumptions that you make.
(6 marks)

(iii) Whether or not you agree with the statement of the marketing director in note (9) above. (5 marks)

Professional marks for appropriateness of format, style and structure of the report. (4 marks)

(b) The Superior Fitness Co (SFC), which is well established in Mayland, operates nine centres. Each of SFC's centres is similar in size to those of HFG. SFC also provides dietary plans and fitness programmes to its clients. The directors of HFG have decided that they wish to benchmark the performance of HFG with that of SFC.

Required:

Discuss the problems that the directors of HFG might experience in their wish to benchmark the performance of HFG with the performance of SFC, and recommend how such problems might be successfully addressed.
(7 marks)

(36 marks)

2 The Rubber Group (TRG) manufactures and sells a number of rubber-based products. Its strategic focus is channelled through profit centres which sell products transferred from production divisions that are operated as cost centres. The profit centres are the primary value-adding part of the business, where commercial profit centre managers are responsible for the generation of a contribution margin sufficient to earn the target return of TRG. The target return is calculated after allowing for the sum of the agreed budgeted cost of production at production divisions, plus the cost of marketing, selling and distribution costs and central services costs.

The Bettamould Division is part of TRG and manufactures moulded products that it transfers to profit centres at an agreed cost per tonne. The agreed cost per tonne is set following discussion between management of the Bettamould Division and senior management of TRG.

The following information relates to the agreed budget for the Bettamould Division for the year ending 30 June 2009:

(1) The budgeted output of moulded products to be transferred to profit centres is 100,000 tonnes. The budgeted transfer cost has been agreed on a two-part basis as follows:

    (i) A standard variable cost of $200 per tonne of moulded products;

    (ii) A lump sum annual charge of $50,000,000 in respect of fixed costs, which is charged to profit centres, at $500 per tonne of moulded products.

(2) Budgeted standard variable costs (as quoted in 1 above) have been set after incorporating each of the following:

    (i) A provision in respect of processing losses amounting to 15% of material inputs. Materials are sourced on a JIT basis from chosen suppliers who have been used for some years. It is felt that the 15% level of losses is necessary because the ageing of the machinery will lead to a reduction in the efficiency of output levels.

    (ii) A provision in respect of machine idle time amounting to 5%. This is incorporated into variable machine costs. The idle time allowance is held at the 5% level partly through elements of 'real-time' maintenance undertaken by the machine operating teams as part of their job specification.

(3) Quality checks are carried out on a daily basis on 25% of throughput tonnes of moulded products.

(4) All employees and management have contracts based on fixed annual salary agreements. In addition, a bonus of 5% of salary is payable as long as the budgeted output of 100,000 tonnes has been achieved;

(5) Additional information relating to the points in (2) above (but NOT included in the budget for the year ending 30 June 2009) is as follows:

    (i) There is evidence that materials of an equivalent specification could be sourced for 40% of the annual requirement at the Bettamould Division, from another division within TRG which has spare capacity.

    (ii) There is evidence that a move to machine maintenance being outsourced from a specialist company could help reduce machine idle time and hence allow the possibility of annual output in excess of 100,000 tonnes of moulded products.

    (iii) It is thought that the current level of quality checks (25% of throughput on a daily basis) is vital, although current evidence shows that some competitor companies are able to achieve consistent acceptable quality with a quality check level of only 10% of throughput on a daily basis.

The directors of TRG have decided to investigate claims relating to the use of budgeting within organisations which have featured in recent literature. A summary of relevant points from the literature is contained in the following statement:

'The use of budgets as part of a 'performance contract' between an organisation and its managers may be seen as a practice that causes management action which might lead to the following problems:

(a) Meeting only the lowest targets
(b) Using more resources than necessary
(c) Making the bonus – whatever it takes
(d) Competing against other divisions, business units and departments
(e) Ensuring that what is in the budget is spent
(f) Providing inaccurate forecasts
(g) Meeting the target, but not beating it
(h) Avoiding risks.'

Required:

(a) Explain the nature of any SIX of the eight problems listed above relating to the use of budgeting;

(12 marks)

(b) Illustrate EACH of the six problems chosen in (a) using the data from the Bettamould division/TRG scenario; and

(6 marks)

(c) Suggest ways in which each of the six problems chosen in (a) above may be overcome.

(6 marks)

(24 marks)

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Question 3 begins on page 7.

Section B – TWO questions ONLY to be attempted

3 The Global Hotel Group (GHG) operates hotels in most of the developed countries throughout the world. The directors of GHG are committed to a policy of achieving 'growth' in terms of geographical coverage and are now considering building and operating another hotel in Tomorrowland. Tomorrowland is a developing country which is situated 3,000 kilometres from the country in which GHG's nearest hotel is located.

The managing director of GHG recently attended a seminar on 'the use of strategic and economic information in planning organisational performance'.

He has called a board meeting to discuss the strategic and economic factors which should be considered before a decision is made to build the hotel in Tomorrowland.

Required:

(a) Discuss the strategic and economic factors which should be considered before a decision is made to build the hotel. (14 marks)

(b) GHG has always used local labour to build and subsequently operate hotels. The directors of GHG are again considering employing a local workforce not only to build the hotel but also to operate it on a daily basis.

Required:

Explain TWO ways in which the possibility of cultural differences might impact on the performance of a local workforce in building and operating a hotel in Tomorrowland. (6 marks)

(20 marks)

4 The Childrens Toy Company (CTC) manufactures electrically-operated toy versions of animals. The activities of CTC are confined to the country of Stableland, which has a zero-inflation economy. The government of Stableland has granted tax-exempt status to CTC since it provides goods or services exclusively for children. However, no tax allowances are available on investments made by CTC.

CTC has a total production capacity of 400,000 units which cannot be exceeded. The products to be manufactured together with forecast sales volumes are as follows:

Product	Forecast sales units ('000)			
	2008	2009	2010	2011
Bruno the Bear	180	120	100	60
Kong the Ape	150	48	24	0
Leo the Lion	60	72	76	30

Other relevant information relating to the products is as follows:

1. Selling prices per unit and contribution to sales ratios (%) for 2008 and 2009:

	Selling price per unit ($)	Contribution to sales ratio (%)
Product:		
Bruno	40	70
Kong	50	65
Leo	60	60

2. Product-specific fixed overheads:

Year	2008	2009
	$000	$000
Bruno	3,800	2,400
Kong	2,400	1,340
Leo	2,040	2,100

3. The company's other fixed overheads are estimated at $1·65 million per annum.

Required:

(a) (i) Prepare a statement of product profitability for each of years 2008 and 2009 which also shows the net profit or loss of CTC. (4 marks)

(ii) Comment on the figures in the statement prepared in (a)(i) above. (4 marks)

(b) The marketing director of CTC has suggested the introduction of a new toy 'Nellie the Elephant' for which the following estimated information is available:

1. Sales volumes and selling prices per unit

Year ending, 31 May	2009	2010	2011
Sales units (000)	80	180	100
Selling price per unit ($)	50	50	50

2. Nellie will generate a contribution to sales ratio of 50% throughout the three year period.

3. Product specific fixed overheads during the year ending 31 May 2009 are estimated to be $1·6 million. It is anticipated that these fixed overheads would decrease by 10% per annum during each of the years ending 31 May 2010 and 31 May 2011.

4. Capital investment amounting to $3·9 million would be required in June 2008. The investment would have no residual value at 31 May 2011.

5. Additional working capital of $500,000 would be required in June 2008. A further $200,000 would be required on 31 May 2009. These amounts would be recovered in full at the end of the three year period.

6. The cost of capital is expected to be 12% per annum.

Assume all cash flows (other than where stated) arise at the end of the year.

Required:

(i) **Determine whether the new product is viable purely on financial grounds.** (4 marks)

(ii) **Calculate the minimum target contribution to sales ratio (%) at which 'Nellie the Elephant' will be financially viable, assuming that all other data remain unchanged.** (4 marks)

(iii) **Identify and discuss an alternative strategy that may assist in improving the performance of CTC with effect from 1 May 2009 (where only the products in (a) and (b) above are available for manufacture).** (4 marks)

(20 marks)

5 Telecoms At Work (TAW) manufactures and markets office communications systems. During the year ended 31 May 2008 TAW made an operating profit of $30 million on sales of $360 million. However, the directors are concerned that products do not conform to the required level of quality and TAW is therefore not fulfilling its full potential in terms of turnover and profits achieved.

The following information is available in respect of the year ended 31 May 2008:

(1) Production data:

Units manufactured and sold	18,000
Units requiring rework	2,100
Units requiring warranty repair service	2,700
Design engineering hours	48,000
Process engineering hours	54,000
Inspection hours (manufacturing)	288,000

(2) Cost data:

	$
Design engineering per hour	96
Process engineering per hour	70
Inspection per hour (manufacturing)	50
Rework per communication system reworked (manufacturing)	4,800
Customer support per repaired unit (marketing)	240
Transportation costs per repaired unit (distribution)	280
Warranty repairs per repaired unit (customer service)	4,600

(3) Staff training costs amounted to $180,000 and additional product testing costs of $72,000.

(4) The marketing director has estimated that sales of 1,800 units were lost as a result of public knowledge of poor quality at TAW. The average contribution per communication system is estimated at $7,200.

Required:

(a) Prepare a cost analysis which shows actual prevention costs, appraisal costs, internal failure costs, and external failure costs for the year ended 31 May 2008. Your statement should show each cost heading as a % of turnover and clearly show the total cost of quality. Comment briefly on the inclusion of opportunity costs in such an analysis. (11 marks)

(b) A detailed analysis has revealed that the casings in which the communications systems are housed are often subject to mishandling in transit to TAW's manufacturing premises. The directors are considering two alternative solutions proposed by the design engineering team which are aimed at reducing the quality problems that are currently being experienced. These are as follows:

Option 1 – Increase the number of immediate physical inspections of the casings when they are received from the supplier. This will require an additional 10,000 inspection hours.

Option 2 – Redesign and strengthen the casings and the containers used to transport them to better withstand mishandling during transportation. Redesign will require an additional 2,000 hours of design engineering and an additional 5,000 hours of process engineering.

Internal failure costs of rework for each reworked communication system are as follows:

		$
Variable costs	(including direct materials, direct labour rework and supplies)	1,920
Allocated fixed costs	(equipment, space and allocated overhead)	2,880
Total costs (as per note 2 on cost data)		4,800

The directors of TAW believe that, even if it is able to achieve improvements in quality, it will be unable to save any of the fixed costs of internal and external failure.

If TAW chooses to inspect the casings more carefully, it expects to eliminate re-work on 720 communication systems whereas if it redesigns the casings it expects to eliminate rework on 960 communication systems.

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If incoming casings are inspected more carefully, TAW estimates that 600 fewer communication systems will require warranty repair and that it will be able to sell an additional 300 communication systems. If the casing is redesigned, the directors estimate that 840 fewer communication systems will require warranty repair and that an additional 360 communication systems will be sold.

External failure costs of repair for each repaired communication system are as follows:

	Variable costs	Fixed costs	Total costs
	$	$	$
Customer support costs	96	144	240
Transportation costs	210	70	280
Warranty repair costs	1,700	2,900	4,600

Required:

Prepare an estimate of the financial consequences of each option and advise the directors of TAW which option should be chosen. (9 marks)

(20 marks)

Present Value Table

Present value of 1 i.e. $(1 + r)^{-n}$

Where   r = discount rate

          n = number of periods until payment

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	0·980	0·961	0·943	0·925	0·907	0·890	0·873	0·857	0·842	0·826	2
3	0·971	0·942	0·915	0·889	0·864	0·840	0·816	0·794	0·772	0·751	3
4	0·961	0·924	0·888	0·855	0·823	0·792	0·763	0·735	0·708	0·683	4
5	0·951	0·906	0·863	0·822	0·784	0·747	0·713	0·681	0·650	0·621	5
6	0·942	0·888	0·837	0·790	0·746	0·705	0·666	0·630	0·596	0·564	6
7	0·933	0·871	0·813	0·760	0·711	0·665	0·623	0·583	0·547	0·513	7
8	0·923	0·853	0·789	0·731	0·677	0·627	0·582	0·540	0·502	0·467	8
9	0·914	0·837	0·766	0·703	0·645	0·592	0·544	0·500	0·460	0·424	9
10	0·905	0·820	0·744	0·676	0·614	0·558	0·508	0·463	0·422	0·386	10
11	0·896	0·804	0·722	0·650	0·585	0·527	0·475	0·429	0·388	0·350	11
12	0·887	0·788	0·701	0·625	0·557	0·497	0·444	0·397	0·356	0·319	12
13	0·879	0·773	0·681	0·601	0·530	0·469	0·415	0·368	0·326	0·290	13
14	0·870	0·758	0·661	0·577	0·505	0·442	0·388	0·340	0·299	0·263	14
15	0·861	0·743	0·642	0·555	0·481	0·417	0·362	0·315	0·275	0·239	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	0·812	0·797	0·783	0·769	0·756	0·743	0·731	0·718	0·706	0·694	2
3	0·731	0·712	0·693	0·675	0·658	0·641	0·624	0·609	0·593	0·579	3
4	0·659	0·636	0·613	0·592	0·572	0·552	0·534	0·516	0·499	0·482	4
5	0·593	0·567	0·543	0·519	0·497	0·476	0·456	0·437	0·419	0·402	5
6	0·535	0·507	0·480	0·456	0·432	0·410	0·390	0·370	0·352	0·335	6
7	0·482	0·452	0·425	0·400	0·376	0·354	0·333	0·314	0·296	0·279	7
8	0·434	0·404	0·376	0·351	0·327	0·305	0·285	0·266	0·249	0·233	8
9	0·391	0·361	0·333	0·308	0·284	0·263	0·243	0·225	0·209	0·194	9
10	0·352	0·322	0·295	0·270	0·247	0·227	0·208	0·191	0·176	0·162	10
11	0·317	0·287	0·261	0·237	0·215	0·195	0·178	0·162	0·148	0·135	11
12	0·286	0·257	0·231	0·208	0·187	0·168	0·152	0·137	0·124	0·112	12
13	0·258	0·229	0·204	0·182	0·163	0·145	0·130	0·116	0·104	0·093	13
14	0·232	0·205	0·181	0·160	0·141	0·125	0·111	0·099	0·088	0·078	14
15	0·209	0·183	0·160	0·140	0·123	0·108	0·095	0·084	0·074	0·065	15

Annuity Table

Present value of an annuity of 1 i.e. $\dfrac{1-(1+r)^{-n}}{r}$

Where   r = discount rate
           n = number of periods

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	1·970	1·942	1·913	1·886	1·859	1·833	1·808	1·783	1·759	1·736	2
3	2·941	2·884	2·829	2·775	2·723	2·673	2·624	2·577	2·531	2·487	3
4	3·902	3·808	3·717	3·630	3·546	3·465	3·387	3·312	3·240	3·170	4
5	4·853	4·713	4·580	4·452	4·329	4·212	4·100	3·993	3·890	3·791	5
6	5·795	5·601	5·417	5·242	5·076	4·917	4·767	4·623	4·486	4·355	6
7	6·728	6·472	6·230	6·002	5·786	5·582	5·389	5·206	5·033	4·868	7
8	7·652	7·325	7·020	6·733	6·463	6·210	5·971	5·747	5·535	5·335	8
9	8·566	8·162	7·786	7·435	7·108	6·802	6·515	6·247	5·995	5·759	9
10	9·471	8·983	8·530	8·111	7·722	7·360	7·024	6·710	6·418	6·145	10
11	10·37	9·787	9·253	8·760	8·306	7·887	7·499	7·139	6·805	6·495	11
12	11·26	10·58	9·954	9·385	8·863	8·384	7·943	7·536	7·161	6·814	12
13	12·13	11·35	10·63	9·986	9·394	8·853	8·358	7·904	7·487	7·103	13
14	13·00	12·11	11·30	10·56	9·899	9·295	8·745	8·244	7·786	7·367	14
15	13·87	12·85	11·94	11·12	10·38	9·712	9·108	8·559	8·061	7·606	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	1·713	1·690	1·668	1·647	1·626	1·605	1·585	1·566	1·547	1·528	2
3	2·444	2·402	2·361	2·322	2·283	2·246	2·210	2·174	2·140	2·106	3
4	3·102	3·037	2·974	2·914	2·855	2·798	2·743	2·690	2·639	2·589	4
5	3·696	3·605	3·517	3·433	3·352	3·274	3·199	3·127	3·058	2·991	5
6	4·231	4·111	3·998	3·889	3·784	3·685	3·589	3·498	3·410	3·326	6
7	4·712	4·564	4·423	4·288	4·160	4·039	3·922	3·812	3·706	3·605	7
8	5·146	4·968	4·799	4·639	4·487	4·344	4·207	4·078	3·954	3·837	8
9	5·537	5·328	5·132	4·946	4·772	4·607	4·451	4·303	4·163	4·031	9
10	5·889	5·650	5·426	5·216	5·019	4·833	4·659	4·494	4·339	4·192	10
11	6·207	5·938	5·687	5·453	5·234	5·029	4·836	4·656	4·486	4·327	11
12	6·492	6·194	5·918	5·660	5·421	5·197	4·988	4·793	4·611	4·439	12
13	6·750	6·424	6·122	5·842	5·583	5·342	5·118	4·910	4·715	4·533	13
14	6·982	6·628	6·302	6·002	5·724	5·468	5·229	5·008	4·802	4·611	14
15	7·191	6·811	6·462	6·142	5·847	5·575	5·324	5·092	4·876	4·675	15

End of Question Paper