Professional Level – Options Module

Advanced Performance Management

Friday 5 June 2009

Paper P5

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

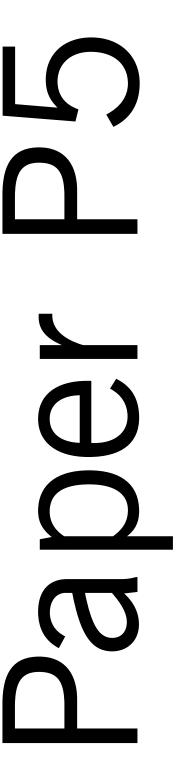Section B – TWO questions ONLY to be attempted

Present Value and Annuity Tables are on pages 10 and 11.

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 Royal Laurel Hospital (RLH) and The King Hardy Hospital (KHH) are government funded institutions which are managed by the Glasburgh Trust. The following information is available for the year ended 31 May 2009.

	RLH Actual	RLH Budget	KHH Actual
Total inpatients	37,000	36,500	40,000
Number of inpatients waiting >5 weeks for admission	3,330	365	320
Number of inpatients waiting >11weeks for admission	740	0	0
Total outpatients	44,000	43,800	44,000
Number of outpatients waiting >5 weeks for treatment	4,400	2,190	352
Number of outpatients waiting >11 weeks for treatment	1,320	438	220
Number of outpatients waiting >13 weeks for treatment	220	0	0
Achievement (%) of target maximum waiting time of 2 weeks for admission to Rapid Access Chest Pains Clinic	70	98	100
Number of emergency admissions	300	400	300
Number of 12 hour 'trolley' waits for emergency admissions	4	0	0
Achievement (%) of target of 4 hours or less time spent in accident and Emergency ward	96	98	100
Number of complaints received	1,620	803	420
Number of complaints responded to within 25 days	1,539	803	416
Number of deaths (all inpatients)	600	730	800
Infection control – number of instances of infections reported	2	6	0
Number of drug administration errors	80	100	20
Number of staff shortages	80	60	20
Staff productivity measure (number of patient days per staff member)	8·4	7·4	9·2
Number of times of Government or agency staff usage	80	60	20
Bed occupancy (number of inpatient bed days)	138,750	146,000	134,320
Theatre utilisation (%)	?	?	?
% of inpatients requiring a single operation	80%	80%	80%
Number of operations performed	29,008	?	31,840
Revenue from clinical and non-clinical activities ($m)	54·2	55·2	60·2
Medical staff costs ($m)	22·3	22·2	19·6
Other staff costs ($m)	5·5	5·5	4·0
Income and expenditure surplus margin	(1·0)	0·0	4·0
Number of days cash in hand	31	30	35

Additional information:

(1) Both hospitals were in operation for 365 days during the year

(2) Each hospital has 42 wards, each of which accommodates 10 beds

(3) RLH budgeted that each inpatient would require a stay of four days and nights in hospital.

(4) Each hospital has ten operating theatres in each of which an average of nine operations per day were undertaken.

(5) No outpatient required an operation during the year.

(6) The management of the trust uses a 'balanced scorecard' approach in order to assess the performance of each hospital. Their balanced scorecard has four dimensions which are as follows:

(i) Access to services
(ii) Clinical
(iii) Efficiency
(iv) Financial management.

Required:

Prepare a report to the management of the Glasburgh Trust which:

(a) Critically assesses, on the basis of the above information, the performance of both hospitals for the year ended 31 May 2009. You should use the four dimensions to perform your assessement as per note (6) above;

(20 marks)

(b) Evaluates the balanced scorecard used by the Glasburgh Trust and provides recommendations which would improve its usefulness as a performance measurement tool.

(11 marks)

4 professional marks will be awarded in question 1 for the appropriateness of the format and presentation of the report and the quality of its content.

(4 marks)

(35 marks)

2 Franchising For You Ltd (F4U) markets a range of franchises which it makes available to its customers, the franchisees. F4U supplies the franchisee with information of the mode of operation, detailed operation schedules and back-up advice (by telephone, internet) and undertakes national advertising. Each franchisee must arrange for its own premises, equipment and undertake local marketing.

F4U is considering the introduction of a Dance and Drama franchise which would have an expected life of six years. From this project, the only income F4U will receive from franchisees comes from the initial franchise fee.

The following estimates have been made relating to the cash outflows and inflows for F4U in order that F4U can evaluate the financial viability of the Dance and Drama franchise proposal:

1. Initial investment of $6m. This will include a substantial element relating to the 'intellectual capital' requirement of the proposal.

2. Development/improvement costs of $1m per year at the end of each of years two and three.

3. 300 franchises will be sold each year at a fee of $20,000 per franchisee.

4. Variable costs, payable in full on the issue of each franchise, are estimated at $6,000 per franchise.

5. Directly attributable fixed costs of $0·6m per year in each of years one to six. No further fixed costs will be payable by F4U after this period.

6. Corporation tax at the rate of 30%, payable in the year in which cash flow occurs. Tax allowances are not available on the initial investment or development/improvement costs payable by F4U.

7. All cash flows are stated in current prices and with the exception of the initial investment will occur at the end of each year.

8. The money cost of capital is 15·44%. Annual inflation during the period is estimated at 4%.

Required:

(a) Calculate the net present value (NPV) of the Dance and Drama franchise proposal and recommend whether it should be undertaken by F4U. (6 marks)

(b) Discuss the elements to be considered as 'intellectual capital' and issues associated with its valuation for inclusion in the initial investment of $6m. (6 marks)

(c) Discuss ways in which reliance solely on financial performance measures can detract from the effectiveness of the performance management system within an organisation. (6 marks)

F4U has identified key variables as follows:

1. The number of franchises taken up each year. It is estimated that a flexible pricing policy will result in the following outcomes:

Fee per franchise $	Number of franchises sold each year
22,000	270
20,000	300
18,000	355

2. The variable cost per franchise may be $7,000, $6,000 or $5,000.

The NINE possible outcomes of a spreadsheet model used in calculating the NPV and incorporating the variables 1 and 2 above, have been identified as follows:

Payoff Matrix: NPV values
Fee per franchise ($000)

		18	20	22
variable cost	5	4,348,226	4,007,630	4,274,183
per franchise	6	3,296,822	3,119,120	3,474,524
($000)	7	2,245,419	2,230,610	2,674,865

Required:

(d) State the franchise fee pricing strategy ($ per franchise) which will result from the operation of each of the following decision rules:

  (i) Maximax;
  (ii) Maximin;
  (iii) Minimax regret.

Your answer should explain the basis of operation of each of the three decision rules.   (7 marks)

(25 marks)

Section B – TWO questions ONLY to be attempted

3 **(a)** The senior management of Universal University (UU) intend to develop both quantitative and qualitative measures of performance in relation to lecturing staff.

As part of UU's mission to provide 'quality education' to its students, lecturers are encouraged to apply their skill and judgement in the creation, delivery and assessment aspects of the learning process.

Academic staff are organised on a departmental basis. Each department is expected to achieve and improve on targets in the achievement of its role. As part of their development both personally and as departmental members, staff are encouraged to participate fully in research publication, new course design and innovation in teaching and learning methods.

Academic staff have differing views on whether action on their part in pursuing aspects of such goals is compatible with their personal goals.

Required:

Using the above scenario, discuss in relation to the lecturing staff within (UU) each of the following:

(i) The application of Agency Theory to staff, in their role as agents and provide examples of the observability of their role in relation to *outcomes* and *effort*;

(ii) The application of Expectancy Theory with specific reference to the relationship between:

– **strength of motivation to do (X);**
– **strength of preference for outcome (Y);**
– **expectation that doing (X) will result in (Y).** (12 marks)

(b) 'Hard Accountability' is deemed to apply to lecturing staff in each of three specific areas as follows:

(i) accounting for the numbers;
(ii) ensuring the numbers are accounted for;
(iii) being held accountable for events and circumstances leading to the numbers.

Required:

Describe how each of the areas (b)(i) to (iii) may be applied at UU and critically evaluate this approach to performance measurement in the context of the scenario described above. (8 marks)

(20 marks)

4 The McIntyre Resort (MR), which is privately owned, is a world famous luxury hotel and golf complex. It has been chosen as the venue to stage 'The Robyn Cup', a golf tournament which is contested by teams of golfers from across the globe, which is scheduled to take place during July 2009. MR will offer accommodation for each of the five nights on which guests would require accommodation.

The following information is available regarding the period of the tournament:

(1) Hotel data:

Total rooms	2,400
Room mix:	
Double rooms	75%
Single rooms	15%
Family rooms	10%
Fee per room per night ($):	
Double rooms	400
Single rooms	300
Family rooms	600
Number of guests per room:	
Double rooms	2
Single rooms	1
Family rooms	4

When occupied, all rooms will contain the number of guests as above.

Costs:	
Variable cost per guest per night	$100
Attributable fixed costs for the five-day period:	
Double rooms	$516,000
Single and family rooms (total)	$300,000

(2) Accommodation for guests is provided on an all-inclusive basis (meals, drinks, entertainment etc).

(3) The objective of the hotel management is to maximise profit.

(4) The hotel management expect all single and family rooms to be 'sold out' for each of the five nights of the tournament. However, they are unsure whether the fee in respect of double rooms should be increased or decreased. At a price of $400 per room per night they expect an occupancy rate of 80% of available double rooms. For each $10 increase/decrease they expect the number of rooms to decrease/increase by 40.

Required:

(a) (i) Calculate the profit-maximising fee per double room that MR should charge per night during the tournament; (6 marks)

(ii) Calculate how much profit would be earned from staging the tournament as a consequence of charging that fee. (4 marks)

(b) The management of the hotel are concerned by the level of variable costs per guest night to be incurred in respect of the tournament. A recent review of proposed operational activities has concluded that variable cost per guest per night in **all rooms** in the hotel would be reduced by 20% if proposed changes in operational activities were made. However, this would result in additional attributable fixed costs amounting to $200,000 in respect of the five day period.

Required:

Advise management whether, on purely financial grounds, they should make the proposed changes in operational activities. (6 marks)

(c) Discuss TWO initiatives that management might consider in order to further improve the profit from staging the golf tournament. (4 marks)

(20 marks)

5 The There 4 U Company (T4UC) commenced trading on 1 January 2006. It was founded by Ken Matthews, who is the managing director of T4UC.

The initial aim of T4UC was to provide 'good quality' repairs and servicing to customers with domestic central heating systems and domestic 'white goods' (white goods are items such as washing machines, tumble dryers, dishwashers, refrigerators and freezers).

T4UC provides contract services on an annual basis to individual customers who require insurance covering the repair and servicing of their central heating systems and domestic white goods. T4UC charge an annual contract fee and undertake all client repair and servicing requirements without further charge.

Ken, who has a very strong background in sales and marketing, recruited engineers who came from a variety of engineering backgrounds.

Initial growth was prolific with Ken being very successful in establishing a good sized customer base within the first two years of the business. Ken believes that staff utilisation is the key driver of profitability within T4UC.

T4UC set up a website where clients could access product manuals and other diagnostic data as well as being able to book an appointment with a service engineer.

The following data is available:

Year	2006	2007	2008
Number of contracted clients	13,000	15,000	14,800
Number of visits to contracted clients	23,400	30,000	32,000
Number of clients gained via recommendation	200	100	5
Number of telephone calls for product support received	52,500	62,000	59,500
Number of telephone calls for product support answered	52,000	60,000	58,000
Number of product support issues resolved by telephone	46,800	51,000	46,400

At the end of 2008 Ken became anxious regarding the fact that the growth in the customer base had stopped and that a number of clients had chosen not to renew their contracts with T4UC. In view of these facts, Ken undertook an extensive survey of the customers who had entered into contracts with T4UC since it commenced trading.

Ken received the following comments which were representative of all other comments that he received.

'T4UC ought to adopt a 'right first time' mentality.'

'I booked an engineer for last Monday who never arrived but two engineers turned up on Tuesday!'

'You send me a different engineer each time to inspect my central heating system. Some are here for an hour and yet others are here for the whole day and some of those even have to come back the next day.'

'Your people never seem to have the required parts with them and have to come back the next day!'

'An engineer arrived at my home to repair my washing machine but the required parts which were shipped to my home direct from the manufacturer arrived three days later! I've heard that 'Appliances R Us' is the best organisation in your service sector and that they provide a much more efficient service than T4UC and unlike T4UC is always contactable on a twenty-four hours basis during every day of the year! When I have tried to contact you on Saturdays and Sundays I have often given up out of sheer frustration!'

Ken also obtained the following data from the 'Centre for Inter-Firm Comparison'.

	T4UC	Appliances R Us	Industry average
Customer satisfaction rating (%)	65	92	75
Remedial visits (%) of client visits	8	1	4
Cost per client per visit ($)	150	75	100
Client to staff ratio	250:1	200:1	225:1

Ken undertook further investigations which revealed remedial visits were frequently due to staff servicing appliances with which they were not completely familiar.

Required:

(a) Describe the Six-Sigma methodology for the improvement of an existing process. (8 marks)

(b) Explain how the above-mentioned problems at T4UC could be analysed and addressed using the Six Sigma methodology. Your answer should include suggestions regarding additional activities that should be undertaken in order to improve the performance of T4UC. (12 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	0·941	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	0·305	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