INSTITUTE OF COST AND MANAGEMENT ACCOUNTANTS OF PAKISTAN

Spring (Summer) 2009 Examinations

Friday, the 22nd May 2009

MANAGEMENT ACCOUNTING – DECISION MAKING – (S-502)

Stage- 5

Time Allowed – 2 Hours 45 Minutes | Maximum Marks – 90

(i) Attempt all questions.

(ii) Answers must be neat, relevant and brief.

(iii) In marking the question paper, the examiners take into account clarity of exposition, logic of arguments, effective presentation, language and use of clear diagram/ chart, where appropriate.

(iv) Read the instructions printed on the top cover of answer script CAREFULLY before attempting the paper.

(v) Use of non-programmable scientific calculators of any model is allowed.

(vi) DO NOT write your Name, Reg. No. or Roll No. anywhere inside the answer script.

(vii) Question No.1 – "Multiple Choice Question" printed separately, is an integral part of this question paper.

Marks

Q. 2 **(a)** What is the difference between ordinary least-squares regression analysis and multiple regression analysis? 04

(b) Paragon Laboratories manufactures medicated drips that are sold to hospitals through a network of independent sales agents located at Karachi and Islamabad. These sales agents sell a variety of products to hospitals in addition to Paragon's medicated drips. The sales agents are currently paid 18% commission on sales, and this commission rate was used when Paragon's management prepared the following budgeted income statement for the coming year:

Paragon Corporation
Budgeted Income Statement

Particulars	**Rs.**	**Rs.**
Sales		150,000,000
Cost of goods sold:		
variable	87,000,000	
fixed	14,000,000	101,000,000
Gross profit		49,000,000
Selling and administrative expenses:		
commission	27,000,000	
fixed advertising expenses	4,000,000	
fixed administrative expenses	16,000,000	47,000,000
Net profit		2,000,000

Since the completion of the above statement, Paragon's management has learned that the independent sales agents are demanding an increase in the commission rate to 20% of sales for the coming year.

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Marks

This would be the third increase in commission demanded by the independent sales agents in five (5) years. As a result, Paragon's management has decided to investigate the possibility of hiring its own sales staff to replace the independent sales agents.

Paragon's CFO estimates that the company will have to hire eight sales persons to cover the current market, and the annual payroll cost of these prospective employees will be around Rs.3,500,000, including fringe benefits. The sales persons will also be paid commission of 10% of sales. Travelling and entertainment expenses are expected to be total of Rs.2,000,000 for the year. The company will also have to hire a sales manager and support staff, whose salaries and fringe benefits will come to Rs.1,000,000 per year. To make up for the promotions that the independent sales agents had been running on behalf of Paragon, management believes that the company's budget for fixed advertising expenses should be increased by Rs.2,500,000.

Required:

(i) Assuming sales of Rs.150,000,000 prepare income statement showing budgeted contribution for the coming year for each of the following alternatives: 06
(A) The independent sales agents' commission rate remains unchanged at 18%.
(B) The independent sales agents' commission rate increases to 20%.
(C) The company employs its own sales force.

(ii) Calculate Paragon Corporations break-even point in sales rupees, for the coming year assuming the following: 03
(A) The independent sales agents' commission rate remains unchanged at 18%.
(B) The independent sales agents' commission rate increases to 20%.
(C) The company employs its own sales force.

(iii) Refer to your answer to (i) B above. If the company employs its own sales force, what volume of sales would be necessary to generate the net income the company would realize if sales are Rs.150,000,000 and the company continues to sell through agents (at a 20% commission rate)? 02

(iv) Determine the volume of sales at which net income would be equal regardless of whether Paragon Corporation sells through agents (at a 20% commission rate) or employs its own sales force. 04

Q. 3 Al-Hamra Pharma Limited has its Head Office in Karachi with three factories situated at Karachi, Lahore and Islamabad. The operations of Lahore have been unprofitable for number of years. The lease hold of Lahore will also expire by the end of current year.
In view of the continued losses the management has decided to close down the said factory rather than renewal of lease. The factory's plant and machinery can be sold at a price higher than the written down value and the surplus funds will be sufficient to cover all termination costs. The projected profitability of the factories for the year is as under:

(Rupees in million)

Particulars	Karachi	Lahore	Islamabad	Total
Sales	2,000	500	1,500	4,000
Variable costs	1,100	375	975	2,450
Fixed costs:				
factory	400	150	200	750
selling and Admin.	150	25	75	250
Head Office expense (apportioned)	125	75	125	325
Profit / (Loss)	225	(125)	125	225

The company, however, would like to continue to serve the customers of Lahore if it could do so economically. Accordingly, the following proposals were put forward for consideration based on a selling price of Rs.12,500 per box.

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(i) Close down Lahore factory and expand the operations of the Islamabad factory for which capacity exist there. This proposal will involve the following changes:
(A) Sales revenue of Islamabad factory will increase by 25%.
(B) The fixed cost of Islamabad factory will increase by 10%.
(C) Fixed selling and administrative costs of the said factory will increase by 5%.
(D) Variable distribution costs of the additional output will increase by Rs.200 per box.

(ii) Close down Lahore factory and expand the operations of the Karachi factory subject to the following changes in case of the latter:
(A) Sales revenue will increase by Rs.400 million.
(B) Factory fixed costs will increase by 20%.
(C) Fixed selling and administrative costs will increase by 10%.
(D) Variable distribution costs in respect of the additional units will increase by Rs.250 per box.

(iii) Close down Lahore factory and enter into a long-term contract with an independent manufacturer to serve the customers of Lahore. The manufacturer will pay a royalty of Rs.250 per box to the company. In that event the sales of the area served by Lahore factory will fall by 25%.

(iv) Close down Lahore factory and discontinue serving the present customers of the area.

Required:

Evaluate each of these proposals and advise the management of the action to be taken in the best interest of the company ensuring improved profitability. 20

Q. 4 Karsaz Auto Parts Limited, an established vendor of precision parts to major automobiles manufactures. It has been offered the choice of making either Popular or Deluxe, for next period, but not both parts.

These parts use the same metal, which is a special alloy of which 13,000 Kgs are available, at Rs.625 per kg. The parts are made by two fully automatic computerized machines. Sony Tech and Toshiba Dell – whose capacities are limited.

Target prices have been set and the following data is available for the period:

Parts Details	**Popular**	**Deluxe**
Maximum demand (units)	7,000	9,000
Target price (Rs. per unit)	7,250	5,750
Alloy usage (Kgs).	1.60	1.60
Machine time:		
Sony Tech (hour)	0.60	0.25
Toshiba Dell (hour)	0.50	0.55
Machines Details	**Sony Tech**	**Toshiba Dell**
Hours available	4,000	4,500
Variable overhead per machine hour (Rs.)	4,000	5,000

Required:

(a) Determine the quantity of part that could be made during the next period to maximize contribution margin (calculate and compare contribution margin of both parts). 08

(b) Indicate whether the company will be able to meet the maximum demand. 02

(c) As an alternative to the target prices shown above, the automobile manufacturer has offered target prices less by 10% and Rs.3,000 per hour for each unused machine hour. State whether your recommendation in (i) above will be altered and if so, calculate the new contribution. 06

Marks

Q. 5 **(a)** What is the major criticism on the payback and simple rate of return methods of making capital budgeting decisions? Discuss. 04

(b) Zelin Limited has currently under examination of a project, which will yield the following returns over a period of time:

Year	Gross Yield (Rs.)
1	400,000
2	400,000
3	450,000
4	450,000
5	375,000

Cost of machinery to be installed amounts to Rs.1,000,000 and the machine is to be depreciated at 20% per annum on the basis of written down value (WDV). Income tax rate is 50%. The average cost of raising capital is 11%.

Required:

Give your recommendation whether the project would be accepted under the internal rate of return method? (Exact percentage of IRR is not required). 15

Q. 6 Getlong Limited considers life cycle costing for new investment decisions covering its engineering activities. The final side of this philosophy is now well established and its principles extended to all other areas of decision making.

The company is to replace a number of its machines and the Production Manager is torn between the German machine, a more expensive machine with a life of 12 years, and the Korean machine with an estimated life of 6 years. If the Korean machine is chosen it is likely that it would be replaced at the end of 6 years by another Korean machine. The pattern of maintenance and running costs differs between two types of machines which is shown below:

(Rupees)

Machines	German	Korean
Purchase price	950,000	650,000
Trade-in-value	150,000	150,000
Annual repair costs	100,000	130,000
Overhaul cost	200,000 (in 8th year)	100,000 (in 4th year)
Estimated financial cost averaged over machine life	10% p.a	10% p.a

Required:

(a) Recommend, with supporting figures, which machine is to be purchased, stating any assumptions made, if any. 12

(b) Describe life cycle costing and give the benefits that are likely to accrue from its use. Support your answer with examples of changes in practice that could occur from adopting this philosophy. 04

Present value factors						
Years	**10%**	**11%**	**12%**	**13%**	**14%**	**15%**
1	0.909	0.901	0.893	0.885	0.877	0.870
2	0.826	0.812	0.797	0.783	0.769	0.756
3	0.751	0.731	0.712	0.693	0.675	0.658
4	0.683	0.659	0.636	0.613	0.592	0.572
5	0.621	0.593	0.567	0.543	0.519	0.497
6	0.564	0.535	0.507	0.480	0.456	0.432
7	0.513	0.482	0.452	0.425	0.400	0.376
8	0.467	0.434	0.404	0.376	0.351	0.327
9	0.424	0.391	0.361	0.333	0.308	0.284
10	0.386	0.352	0.322	0.295	0.270	0.247
11	0.350	0.317	0.287	0.261	0.237	0.215
12	0.319	0.286	0.257	0.231	0.208	0.187

Cumulative Present value factors						
Years	**10%**	**11%**	**12%**	**13%**	**14%**	**15%**
1	0.909	0.901	0.893	0.885	0.877	0.870
2	1.736	1.713	1.690	1.668	1.647	1.626
3	2.487	2.444	2.402	2.361	2.322	2.283
4	3.170	3.102	3.037	2.974	2.914	2.855
5	3.791	3.696	3.605	3.517	3.433	3.352
6	4.355	4.231	4.111	3.998	3.889	3.784
7	4.868	4.712	4.564	4.423	4.288	4.160
8	5.335	5.146	4.968	4.799	4.639	4.487
9	5.759	5.537	5.328	5.132	4.946	4.772
10	6.145	5.889	5.650	5.426	5.216	5.019
11	6.495	6.207	5.938	5.687	5.453	5.234
12	6.814	6.492	6.194	5.918	5.660	5.421

THE END