THE INSTITUTE OF CHARTERED ACCOUNTANTS OF PAKISTAN

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Professional Examination   Summer 2003

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MANAGEMENT ACCOUNTING **(MARKS 100)**
PE-2 Paper - I **(3 hours)**

Q.1 Al-Abid Limited uses a dyeing and waterproofing process for its fabrics which are later made up into tents and other outdoor pursuit items, or sold to other manufacturers. Each roll of fabric is subject to the same process, with dyeing and waterproofing materials being added at specific times in the process. The direct labour costs are incurred uniformly throughout the process. Inspection of the fabric for spoilage can take place only at the end of the process when it can be determined whether or not there has been any spoilage. Amounts of up to 10% of good output are acceptable as normal spoilage. Any abnormal spoilage is treated as a period loss. Some spoiled fabric can be reworked and it is saved up until a batch of 500 rolls can be reprocessed.

The reworking costs are charged to process overheads, and any reworked goods will not usually need the full cost of conversion spent on them. The work in progress is valued using the FIFO method.

At the beginning of the month of December 2002 the work in progress in the dyeing and waterproofing department were 1000 rolls which were valued at Rs.120,000 direct materials and Rs. 46,200 direct labour. The work in progress has had all the direct material added, but was only 60% complete as far as the direct labour was concerned. During the month 5,650 rolls were started from new, and 500 rolls were reworked. The rolls being reworked require 60% of direct materials and 50% of direct labour to bring them up to standard. By the end of the month 550 rolls had been found to be spoiled. The work in progress at the end of the month amounted to 800 rolls of which 80% were completed for direct materials and 40% were completed for direct labour. All other rolls were completed satisfactorily and transferred to stores for further processing. The costs for December 2002 were direct materials Rs. 720,850, direct labour Rs. 117,180. The departmental overhead recovered was Rs. 3.5 for every Re 1 direct labour, whilst actual overhead expenditure amount to Rs. 341,100 for the month (excluding the reworking costs).

Required:

(a) Prepare a schedule showing the actual equivalent units processed for each cost element in the processing department for the month of December 2002 and the costs per roll for the direct material used and the direct labour and applied overheads. **(05)**

(b) Prepare a schedule showing the allocation of the costs of production to the various cost headings for the month of December 2002, including the value of closing work in progress using FIFO method. **(05)**

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Q.2 You are the management accountant of publishing and printing company ... been asked to quote for the production of a programme for the local town ... work would be carried out in addition to the normal work of the company. Beca... existing commitments, some weekend working would be required to complete ... printing of the programme. A trainee accountant has produced the following co... estimates based upon the resources required as specified by the production manager:

	Rs.
Direct materials	
- paper (book value)	5,000
- inks (purchase price)	2,400
Direct labour	
- skilled 250 hours @ Rs 4.00	1,000
- unskilled 100 hours @ Rs 3.50	350
Variable overhead 350 hours @ Rs 4.00	1,400
Printing press depreciation 200 hours @ Rs 2.50	500
Fixed production costs 350 hours @ Rs 6.00	2,100
Estimating department costs	400
Total costs	13,150

You are aware that considerable publicity could be obtained for the company if you are able to win this order and the price quoted must be very competitive. The following notes are relevant to the cost estimated above:

(a) The paper to be used is currently in stock at a value of Rs 5,000. It is of an unusual colour, which has not been used for some time. The replacement price of the paper is Rs 8,000, whilst the scrap value of that in stock is Rs 2,500. The production manager does not foresee any alternative use for the paper if it is not used for the town fair programme.

(b) The inks required are not held in stock. They would have to be purchased in bulk at a cost of Rs 3,000. 80% of the ink purchased would be used in printing the programmes. No other use is foreseen for the remainder.

(c) Skilled direct labour is in short supply and to accommodate the printing of the programmes, 50% of the time required would be worked at weekends for which a premium of 25% above the normal hourly rate is paid. The normal hourly rate is Rs 4.00 per hour.

(d) Unskilled labours are presently under-utilised and at present 200 hours per week are recorded as idle time. If the printing work were carried out at a weekend, 25 unskilled hours would have to occur at this time, both the employees concerned would be given two hours time off (for which they would be paid) in lieu of each hour worked.

(e) Variable overhead represents the cost of operating the printing press and binding machines.

(f) When not being used by the company, the printing press is hired to outside companies for Rs 6.00 per hour. This earns a contribution of Rs 3.00 per hour. There is unlimited demand for this facility.

(g) Fixed production costs are absorbed into production, using an hourly rate based on budgeted activity.

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(h) The cost of Estimating Department represents time spent in discussi[...] the town fair committee concerning the printing of its programme.

Required:

Prepare a revised cost estimate using the opportunity cost approach, showing clearly the minimum price that the company should accept for the order. Give reasons for each resource valuation in your cost estimate. **(08)**

Q.3 The management of Forgings & Castings Limited is considering the proposal to discontinue the manufacture of Product X out of the list of its Products – X, Y and Z – the details of which are given below:

	X	Y	Z
Production capacity level	20%	40%	40%
Units manufactured	4,000	10,000	12,000
Cost per unit:	Rs.	Rs.	Rs.
Materials	25	20	40
Labour	15	10	20
Fixed overheads	4	4	5
Variable overheads	4	3	5
Total cost	48	37	70
Profit/(loss) per unit	(4)	13	10
Selling price per unit	44	50	80

Product X having persistently shown a loss for a number of years due to the saturation of demand and the future prospects of the other two products being bright as a result their having been accepted as components by newly established machine – building complex in the vicinity, the production capacity released by the discontinuance of Product X is sought to be transferred equally to Product Y and Z.

Moreover, the nature of Product X has been such that the transfer of production capacity engaged therein to the other two Products would bring about an accretion of 30% and 50% more in the number of units to be manufactured of Products Y and Z respectively than those involved in the capacity transferred to them under the proposal without, of course, involving any change in total fixed costs from those when all the three Products were manufactured.

The anticipated increases in the structure of costs and the selling price are as under:

	Y	Z
Materials	5%	5%
Labour	10%	10%
Selling price	10%	5%

Required:

Prepare a statement of projected profitability and advise management as to whether the proposal may be accepted for implementation. **(12)**

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Q.4 (a) PDR Ltd manufactures four products using the same machinery. The following details relate to its products.

	Product A Rs. per unit	Product B Rs. per unit	Product C Rs. per unit	Product D Rs. per unit
Selling Price	280	300	450	420
Direct material	50	60	80	60
Direct labour	40	40	80	80
Variable overhead	30	30	60	60
Fixed overhead*	80	80	160	160
Profit	80	90	70	60
Labour hours	1	1	2	2
Machine hours	4	3	4	5

	Units	Units	Units	Units
Maximum demand per week	200	180	250	100

*Absorbed based on budgeted labour hours of 1,000 per week.

There is a maximum of 2,000 machine hours available per week.

Required:

Determine the production plan which will maximize the weekly profit of PDR Ltd and prepare a profit statement showing the profit the proposed plan will yield. **(08)**

(b) The marketing director of PDR Ltd is concerned at the company's inability to meet the quantity demanded by its customers.

Two alternative strategies are being considered to overcome this:

(i) Increase the number of hours worked using the existing machinery by working overtime. Such overtime would be paid at a premium of 50% above normal labour rates, and variable overhead costs would be expected to increase by 50%.

(ii) Buy product B from an overseas supplier at a cost of Rs. 190 per unit including carriage. This would need to be re-packaged at a cost of Rs. 10 per unit before it could be sold.

Required:

Evaluate each of the alternative strategies and, as management accountants, prepare a report to the marketing director, stating your reasons (quantitative and qualitative) as to which, if either, should be adopted. **(12)**

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Q.5 (a) New Vision Limited has estimated the following demand level of its prod

Sales volume(units)	*Probability*
10,000	0.10
12,000	0.15
14,000	0.25
16,000	0.30
18,000	0.20

It has assumed that the sales price will be Rs 6 per unit, marginal cost Rs 3.50 per unit and fixed cost Rs 34,000.
What is the probability that:
i) the company will be break-even in the period?
ii) the company will make a profit of at least Rs 10,000. **(05)**

(b) Toys Limited manufactures high-quality toys for children, which are sold by mail order and through departmental stores.
Kiddy Products is prepared to sell the design and manufacturing rights for three products. However, it will only sell the rights to one product, not two or three. The costs of the rights are:

	Rs.
Pussy Cat	62,500
Teddy Bear	75,000
Jack in Box	52,500

Toys Limited feel that any of these products would make an attractive addition to its range though the products would have a sales life of only one year and wish to select the best of the three products. The following information has been made available:

	Pussy Cat	*Teddy Bear*	*Jack in Box*
	- Rs. -		
Selling price per unit	199	140	115
Variable cost per unit	98	75	65
Fixed production costs	70,000	95,000	60,000
Advertising	55,000	40,000	20,000

These figures have been worked out with great care and circumspection. But when it comes to sales volumes, the Sales Manager could provide only the following analysis of possibilities:

Pussy Cat		*Teddy Bear*		*Jack in Box*	
Volume (units)	*Probability*	*Volume (units)*	*Probability*	*Volume (units)*	*Probability*
2,000	0.7	Nil	0.1	2,500	0.1
3,000	0.2	3,000	0.4	3,000	0.3
4,000	0.1	6,000	0.5	4,000	0.4
Nil	nil	Nil	nil	5,000	0.2

Required:

You are required to advise the company of the best course of action based on the above

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Q.6 The Eastern Commercial Bank was established in 1950 to provide general banki to organisations and individuals. The bank has been successful and profitable since t although the overall impression given is of a slow-moving institution, which has not ke to-date with recent changes in technology.

The bank has a website to promote its services, but on-line banking using the internet is not yet available to its customers. The board of Eastern Commercial Bank recognises that internet banking must be provided in the near future if the bank is to remain competitive.

You have been appointed as a special project accountant with specific responsibility to oversee the upgrade of the bank's internet strategy.

Required:

Advise the Board of the bank on how to develop and implement the bank's strategy in this field. **(15)**

Q.7 Alpha Ltd. intend to acquire Beta Ltd. The directors of Alpha Ltd. have made a takeover bid, to be paid by a share exchange, offering two ordinary shares in Alpha Ltd. for every three ordinary shares in Beta Ltd.

The directors of Alpha Ltd. wish to justify the proposed acquisition to their own shareholders, without antagonizing the directors and shareholders of Beta Ltd. To this end, they made the claim that the acquisition would bring immediate financial benefits to the shareholders of both companies. The following financial data have been in support of their claim.

	Alpha Ltd. **Rs. '000**	**Beta Ltd** **Rs. '000**
Operating profit	151,810	71,500
Less interest payable	54,190	27,100
Profit before tax	97,620	44,400
Less tax	34,170	15,540
Earnings available to ordinary shareholders	63,450	28,860
	=====	=====
Earnings per share (pre-acquisition)	2.115	1.924
Market price per share (pre-acquisition)	22	14.80
Estimated market price, post-acquisition	24	
Estimated equivalent market value, post-acquisition, of one old Beta shares		16

Required:

(a) Show how you think the directors of Alpha reached their estimates of the post-acquisition values of Alpha shares and old Beta shares. State clearly any assumptions that you make and show all calculations.

If you disagree with their estimates, explain why, and show what you would consider to be a more appropriate estimate. Again, state your assumptions and show all calculations. **(12)**

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(b) Suppose that the directors of Beta resist the takeover bid from Alpha. Alpha m to raise its offer for the bid to success. Accepting the estimate that the directors made of the post-acquisition Alpha share price, show by how much Alpha could ra its offer for Beta Ltd. without reducing the value of share for Alpha shareholders. **(04)**

(c) Assuming no increase in post-acquisition earnings, explain whether you consider the takeover of Beta by Alpha would be likely to have any effect on the market value of the debt capital of Alpha. **(04)**

(THE END)

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