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The Institute of Chartered Accountants of Pakistan

Cost Accounting

Intermediate Examination	9 March 2012
Spring 2012	100 marks - 3 hours
Module D	Additional reading time - 15 minutes

Q.1 Ore Limited (OL) is a manufacturer of sports bicycles. The company buys tyres from a local vendor. Following data, relating to a pair of tyres, has been extracted from OL's records:

	Rupees
Cost	1,000
Storage cost based on average inventory	80
Insurance cost based on average inventory	60
Store keeper's salary (included in absorbed overheads)	8
Cost incurred on final quality check at the time of delivery	10

Other relevant details are as under:

(i) The cost of inventory comprises of purchase price and absorbed overhead expenses of Rs. 100 per pair.
(ii) The annual demand for tyres is 200,000 pairs.
(iii) The ordering cost per order is Rs. 8,000.
(iv) The delivery cost per order is Rs. 3,000.
(v) OL's rate of return on investment in inventory is 15%.
(vi) Recently the vendor has offered a quantity discount of 3% on orders of a minimum of 5,000 pairs.

Required:
Evaluate whether OL should avail the quantity discount from the vendor. ***(10 marks)***

Q.2 Nitrate Limited (NL), producing industrial chemicals, has three production and two service departments. The annual overheads are as follows:

	Rupees in '000
Production departments:	
A	56,000
B	50,000
C	38,000
Service departments:	
X	16,500
Y	10,600

The service departments' costs are apportioned as follows:

	Production departments			**Service departments**	
	A	B	C	X	Y
Service department X	20%	40%	30%	-	10%
Service department Y	40%	20%	20%	20%	-

Required:
Apportion costs of service departments using simultaneous equation method. ***(10 marks)***

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Q.3 Magnesium Limited (ML) produces and markets a single product. The management is concerned about the increasing rate of labour turnover in their factory and wants to assess the losses suffered by ML due to high labour turnover.

Following information is available from ML's records for the year ended 31 December 2011:

Sales price per unit	Rs. 200
Direct material per unit	0.5 kg at Rs. 96 per kg
Direct labour hours paid	480,000 hours
Labour rate per hour	Rs. 55
Actual hours per unit of product	1.5 hours
Variable overhead rate per labour hour	Rs. 20
Fixed overheads	Rs. 6,000,000

The direct labour hours include 9,000 hours spent on training and replacement, only 50% of which were productive. Moreover, 12,000 hours of potential work could not be availed because of delayed replacement. The cost incurred on appointments amounted to Rs. 200,000. ML has no beginning or ending inventory.

Required:
Prepare a comparative statement showing net profit for the year and profit foregone as a result of labour turnover; assuming the potential production loss could have been sold in the market at prevailing prices. ***(15 marks)***

Q.4 Chrome Limited (CL) manufactures two products **A** and **B** in small and large packs. Following information has been extracted from CL's business plan for the period ending 31 December 2012:

	A	B
	Large pack	**Large pack**
Contribution margin per unit **(Rs.)**	120	150
Ratio of quantities **(small pack : large pack)**	3:5	2:3
Annual production and sales **(units)**	250,000	225,000

Following information is also available:

(i) Product-**A**:
- The variable cost of the large pack of product-**A** is 75% of its selling price.
- The variable cost of the small pack of product-**A** is 67.5% of the variable cost of large pack.
- The ratio of the selling price of both the packs of product-**A** are same as the ratio of their quantities.
- The annual sales of the small pack of product-**A** is estimated at 150,000 units.

(ii) Product-**B**:
- The ratio of contribution margin to variable cost for the large pack of product-**B** is 2:3.
- The selling price of the small pack of product-**B** is 64% of the price of its large pack.

(iii) Fixed overheads are estimated at Rs. 7,600,000 per month.

Required:
Assuming CL is able to sell the budgeted quantities of both packs of product-**A** and large pack of product-**B**:

(a) How many units of the small pack of product-**B** should be sold to achieve break-even? ***(10 marks)***

(b) How many units of the small pack of product-**B** should be sold to earn a net income of Rs. 10,530,000? Applicable tax rate for the company is **25%**. ***(05 marks)***

(c) Based on the results of (b) above, prepare a product wise and consolidated income statement for the period ending 31 December 2012. ***(05 marks)***

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Q.5 Bauxite Limited (BL) is engaged in the manufacture and sale of three products viz. Pentagon, Hexagon and Octagon. Following information is available from BL's records for the month of February 2012:

	Pentagon	Hexagon	Octagon
Sales price per unit **(Rs.)**	2,300	1,550	2,000
Material cost per Kg. **(Rs.)**	250	250	250
Labour time per unit **(Minutes)**	20	30	45
Machine time per unit **(Hours)**	4	2.5	3
Net weight per unit of finished product **(Kg.)**	6	4	5
Yield **(%)**	90	95	92
Estimated demand **(Units)**	10,000	20,000	9,000

Each worker is paid monthly wages of Rs. 15,000 and works a total of 200 hours per month. BL's total overheads are estimated at 20% of the material cost.

Fixed overheads are estimated at Rs. 5 million per month and are allocated to each product on the basis of machine hours. 100,000 machine hours are estimated to be available in February 2012.

Required:
Based on optimum product mix, compute BL's net profit for the month of February 2012.

(15 marks)

Q.6 Zinc Limited (ZL) is engaged in trading business. Following data has been extracted from ZL's business plan for the year ended 30 September 2012:

Sales	Rs. '000
Actual:	
January 2012	85,000
February 2012	95,000
Forecast:	
March 2012	55,000
April 2012	60,000
May 2012	65,000
June 2012	75,000

Following information is also available:

(i) Cash sale is 20% of the total sales. ZL earns a gross profit of 25% of sales and uniformly maintains stocks at 80% of the projected sale of the following month.
(ii) 60% of the debtors are collected in the first month subsequent to sale whereas the remaining debtors are collected in the second month following sales.
(iii) 80% of the customers deduct income tax @ 3.5% at the time of payment.
(iv) In January 2012, ZL paid Rs. 2 million as 25% advance against purchase of packing machinery. The machinery was delivered and installed in February 2012 and was to be operated on test run for two months. 50% of the purchase price was agreed to be paid in the month following installation and the remaining amount at the end of test run.
(v) Creditors are paid one month after purchases.
(vi) Administrative and selling expenses are estimated at 16% and 24% of the sales respectively and are paid in the month in which they are incurred. ZL had cash and bank balances of Rs. 100 million as at 29 February 2012.

Required:
Prepare a month-wise cash budget for the quarter ending 31 May 2012. ***(10 marks)***

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Q.7 (a) Platinum Limited (PL) manufactures two joint products Alpha and Beta and a by-product Zeta from a single production process. Following information is available from PL's records for the month of February 2012:

Direct material	25,000 kg. @ Rs. 25 per kg.
Direct labour @ Rs. 15 per hour	Rs. 432,000
Normal process loss	20% of the material consumed

Overheads are allocated to the products at the rate of Rs. 10 per direct labour hour. The normal loss is sold as scrap at the rate of Rs. 8 per kg.

Following data relates to the output from the process:

Product	**Output ratio**	**Selling price per kg. (Rs.)**
Alpha	75%	95.0
Beta	15%	175.0
Zeta	10%	52.5

Alpha is further processed at a cost of Rs. 30 per unit, before being sold in the market. Joint costs are allocated on the basis of net realisable value.

Required:
Compute the total manufacturing costs for February 2012. Also calculate the profit per kg. for Alpha and Beta. ***(10 marks)***

(b) Silver Limited (SL) produces and markets a single product. Following budgeted information is available from SL's records for the month of March 2012:

Volumes:	
Sales	100,000 units
Production	120,000 units
Standard costs:	
Direct materials per unit	0.8 kg at Rs. 60 per kg
Labour per unit	27 minutes at Rs. 80 per hour
Variable production overheads	Rs. 40 per labour hour
Variable selling expenses	Rs. 15 per unit
Fixed selling expenses	Rs. 800,000

Fixed production overheads, at a normal output level of 105,000 units per month, are estimated at Rs. 2,100,000. The estimated selling price is Rs. 180 per unit.

Required:
Assuming there are no opening stocks, prepare SL's budgeted profit and loss statement for the month of March 2012 using absorption costing. ***(05 marks)***

Q.8 Explain briefly what is meant by the term inventory control. Describe, giving reasons, the method of stock valuation which should be used in times of fluctuating prices. ***(05 marks)***

(THE END)

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