The Institute of Chartered Accountants of Pakistan

Management Accounting

Final Examination | 5 June 2012
Summer 2012 | 100 marks – 3 hours
Module F | Additional reading time – 15 minutes

Q.1 Himalaya Chemicals Limited (HCL) manufactures an industrial chemical AXE. It has two processing departments A and B. The operating capacity of each department is 42,000 labour hours per annum. The budgeted operating costs of the departments are as under:

	Department A	Department B
	------------Rupees------------	
Direct wages per hour	120	90
Factory overhead rate per labour hour	145	105
Annual fixed overheads	1,356,600	1,117,200

Direct wages are paid on a monthly basis irrespective of the production. Factory overhead rates have been worked out to absorb all budgeted variable and fixed overheads based on 95% operating capacity utilisation.

HCL expects a decrease in demand for AXE as a result of which operating capacity utilisation is estimated to reduce to 70%. Therefore, HCL is considering to introduce a new product WYE. According to a market research carried out by the company the annual demand for WYE would vary according to its price as shown below:

Selling price per unit (Rs.)	190	200	210
Demand in units	18,000	15,000	12,000

Direct material cost of WYE is estimated at Rs. 30 per unit and direct labour hours are estimated at 0.75 and 0.50 per unit for department A and B respectively.

HCL has also received an offer from a third party who wants to acquire all the spare operating facilities on rent at an hourly rate of Rs. 140 and Rs. 100 for departments A and B respectively. Third party would bring its own raw material but would use HCL's labour for which no additional amount would be paid.

Required:
(a) Determine which of the two options would be financially beneficial for HCL. ***(13 marks)***
(b) Briefly describe other matters which you would consider in deciding between the two options. ***(03 marks)***

Q.2 Quality Appliances Limited (QAL) produces two products HX and HY. Budgeted data for these products is as under:

	HX	HY
	Rupees per unit	
Selling price	6,000	5,500
Direct material cost at Rs. 400 per kg	2,000	2,000
Labour cost at Rs. 200 per labour hour	960	650
Machine operating cost at Rs. 500 per machine hour	1,000	1,500
Overheads (including 20% fixed overheads)	625	375

To meet the demand of some of its important customers, QAL needs to produce a minimum of 100 units of each of the two products. The supply of raw material is limited to 2,700 kg. The available labour hours and machine hours are 2,000 and 1,340 respectively.

Required:
Draw the relevant constraints on a graph and determine the production mix which would maximize the monthly contribution. ***(15 marks)***

Q.3 Spicy Foods Limited (SFL) offers three types of spices BX, BY and BZ. The profitability of SFL is declining and it has incurred a loss during the year ended 31 March 2012. The product wise results are as under:

	BX	BY	BZ
No of units sold	400,000	600,000	300,000
	------Rupees in million------		
Sales	140	180	126
Cost of sales	(105)	(135)	(120)
Operating cost	(30)	(49)	(13)
Net profit / (loss)	5	(4)	(7)

Other relevant information is as under:

(i) Cost of sales includes fixed costs of Rs. 135 million. Fixed costs have been allocated to the products on the basis of labour hours. BX, BY and BZ require 1.50, 1.75, and 2.00 labour hours per unit respectively.

(ii) Variable operating costs of BX, BY, and BZ are Rs. 45, Rs. 49, and Rs. 26 per unit respectively.

(iii) In order to increase sales and improve operating results, SFL is considering a proposal to introduce a 'Jumbo economy pack'. The details of the proposal are as under:

- The Jumbo pack would consist of one packet of each of the three types of spices. It would be sold at a price equivalent to 90% of the total price of the three packs. It has been projected that on introduction of the Jumbo pack, the sale of the individual packets would reduce by 20%.
- The existing packing machine would need to be replaced. The new machine would reduce the variable costs of production by 2%. However, annual fixed costs would increase by Rs. 3 million.
- To market the Jumbo pack, SFL plans to launch a sale campaign at a cost of Rs. 4 million.

Required:

Calculate the number of Jumbo packs that should be sold during the year to achieve a net profit of Rs. 5 million. ***(14 marks)***

Q.4 Sky Limited (SL) manufactures a product Alpha. Its demand is highly elastic and is expected to vary with the selling price as under:

Selling price per unit (Rs.)	650	700	750
Annual demand (Units in '000)	200	160	120

To utilize available spare capacity and keeping in view the increasing market competition faced by Alpha, SL is working on a feasibility for introducing a new product Gamma. To produce Gamma, a component Beta would have to be produced using the existing facility. A new facility would have to be established for further processing of Beta to convert it into Gamma. The existing facility has a capacity of 440,000 machine hours while the new facility would have a capacity of 144,000 machine hours.

The data available for the products is as under:

	Existing facility		New facility
	Alpha	Beta	Gamma
Machine hours per unit	2.00	3.50	2.40
Total cost per unit (Rs.)	590.00	735.00	300.00

The annual demand for Gamma is projected at 100,000 units at a price of Rs. 970 per unit. Fixed overheads for the existing facility amount to Rs. 23.1 million per annum whereas annual fixed overheads for the new facility are estimated at Rs. 12 million. Fixed overheads are allocated on the basis of machine hours.

Required:
(a) Determine the product mix that could optimize profit of Sky Limited. *(17 marks)*
(b) Determine minimum transfer price of the component Beta. *(03 marks)*

Q.5 Super Autos (SA) manufactures components for auto industries. It started its business in 1960 in a small workshop which has now developed into a fully automated factory with latest computerized machines.

For allocating overheads, SA has been using single plant-wide factory overhead absorption rate based on direct labour hours. In view of strong competition, the company's management is reviewing its pricing strategies and wants to introduce a more accurate method of product costing.

The pertinent information is as under:

(i) Actual expenses for the quarter ended 31 March 2012 were as under:

	Rupees
Direct wages (30,000 labour hours)	3,000,000
Machines operating expenses (50,000 machine hours)	2,500,000
Maintenance expenses	1,500,000
Technical staff expenses	2,000,000
Expenses of procurement	1,000,000
Expenses of finished goods stores and dispatch	1,600,000
Administration and selling expenses	5,000,000
Total	**16,600,000**

(ii) During the quarter:
- 60 purchase orders were processed and received.
- 120 sales orders were acquired and delivered.
- 150 batches were set for production.

(iii) Maintenance expenses pertain to:

Production	70%
Procurement	5%
Finished goods stores and dispatch	15%
Quality control	10%

(iv) It is estimated that Technical staff devotes 50% of its time to maintenance, 30% to production, 8% to quality control and 12% to procurement.
(v) Quality inspection is carried out at the commencement and completion of each batch.
(vi) SA produces a number of components. Information related to two major products of the company, for the quarter ended 31 March 2012 is as under:

	LV	**MV**
No. of units produced and sold	10,000	12,000
Batch size (no. of units)	400	500
Machine hours per batch	200	150
Direct labour hours worked	1,000	1,500
Direct material costs (Rs.)	850,000	900,000
Average size of a purchase order (Rs.)	170,000	150,000
No. of sales orders delivered	8	10

Required:
Compute the unit cost of components LV and MV using:
- Activity Based Costing; and
- A single factory overhead rate based on direct labour hours. *(20 marks)*

Q.6 Zen Trading Limited (ZTL) is facing working capital constraints due to slow collection of trade debts. Since the management anticipates that any change in the collection policy will have adverse effect on sales, it is negotiating with a factoring company. The terms and conditions proposed by the factoring company are as follows:

- Credit invoices would be submitted to the factor on a daily basis. The factor would make the payment in fifteen days.
- The factor would charge a fee of 5% of the invoice amount which would be deducted at the time of payment to ZTL.
- The factor would be responsible for bad debts, if any.

For evaluating the proposal, the following information is available:

(i) Monthly average cash and credit sales are Rs. 20 million and Rs.100 million respectively.
(ii) ZTL allows a discount of 1% on the invoices which are settled in one month.
(iii) 26% customers avail the discount, 34% pay in two months and 30% pay in three months.
(iv) 5% of the amount is recovered after intense follow-up which takes an average of five months and requires an expenditure of 10% of the invoice amount.
(v) 1% of the amount comprises of small balances and is written off.
(vi) Remaining customers are referred to a legal firm. The legal proceedings take an average of six months and 80% debts are recovered. The legal firm charges a monthly retention fee of Rs. 0.025 million plus 20% of the amount recovered.
(vii) ZTL maintains a Credit Control Department at a cost of Rs. 1.2 million per annum.
(viii) ZTL has a running finance facility of Rs. 150 million at an interest rate of 16% per annum. 5% of the facility is unutilized.

Required:
(a) Determine whether it would be feasible for ZTL to accept the factoring proposal. ***(12 marks)***
(b) Do you anticipate any difficulties which ZTL may have to encounter after accepting the above arrangement and how can these be resolved. ***(03 marks)***

(THE END)