



June 5, 2007

MANAGEMENT ACCOUNTING

(MARKS 100)

(3 hours)

- Q. 1 One of the machines belonging to Aladin and Company was damaged due to fire. All of the company's assets are insured at cost which in this case was Rs 840,000. The accounting written down value of the machine is Rs 640,000.

The replacement cost of similar machines is Rs 0.8 million. Annual saving of Rs 10,000 is expected if the new machine is purchased. A new and improved model of the machine is also available for Rs 1.0 million. In case of purchase of the new model, annual savings are estimated at Rs 35,000.

The company's technical manager has prepared the following estimate for repairing the existing machine:

	Rupees
Material at cost plus sales tax	690,000
Labour: Department A 400 man hours @ Rs 60	24,000
Department B 600 man hours @ Rs 50	30,000
50% salary of the supervisor	20,000
Factory overheads – 60% of direct labour	32,400
Total	<u>796,400</u>

The following information is also available:

Notes:

- (1) The repair material is also available in stores. Its cost in the company's records maintained on weighted average basis is Rs 580,000. The company will need the material for one of its future orders after three months. The supplier of the product increases its prices annually @ 10%. The increase is due after 30 days.
- (2) Department A is very busy producing goods which make contribution of Rs 10.0 per Re. 1 of labour. However, there is sufficient idle time in Department B.
- (3) 40% of all factory overheads are variable.
- (4) The cost of dismantling the machine is Rs 30,000 whereas the cost of installing the new machine is Rs 100,000.
- (5) Company's cost of borrowing is 10% per annum.
- (6) In each of the above case, the machine will be scrapped after five years. The salvage value is estimated at 10% of the cost.
- (7) The discounting factors are 0.909, 0.826, 0.751, 0.683 and 0.621 for years 1 to 5 respectively.

Required:

Make necessary calculations and determine whether the company should repair the machine or purchase one of the two new machines. Give appropriate explanations wherever necessary.

(10)

- Q.2 MZ Limited is engaged in the production of three products X, Y and Z. Till now the business was being carried out on an adhoc basis. However, after facing certain difficulties the management has appointed a Management Accountant who has been entrusted to prepare a comprehensive budget.

The company's records are not in a good shape and after working for many days, only the following information could be extracted:

- (i) Total sales of the company in the year 2006 were Rs 115,200,000. The company charges different prices from each customer. Product wise sale is not available but average prices of the three products and ratio of sales has been estimated as under:

Product	X	Y	Z
Average price (Rs)	40,000	48,000	60,000
Ratio of quantities sold	6	2	4

The company has increased the prices of its products by 10% in 2007 but the sales quantity is expected to remain the same.

- (ii) Three components are used in each of the products as shown below:

Product	Components		
	A	B	C
X	2	3	5
Y	3	3	2
Z	4	6	3
Purchase price (Rs)	1,500	2,000	2,400

The suppliers have informed the company that they will increase the prices of the components by 20% w.e.f. September 1, 2007.

- (iii) All the products are routed through two departments i.e. P & Q. Ten labour hours are used for each product in department P, and fifteen hours in department Q. Salaries are paid on the last day of the month. Labour hour rate is Rs 30 per hour.
- (iv) Total factory overheads equal 60% of direct labour. 40% of the factory overheads are fixed. 50% of all overheads are paid in the same month and the remaining in the next month. Factory overheads in June 2007 are estimated to be Rs 85,000.
- (v) The closing stocks on June 30, 2007 are estimated as under:

Products			Components		
X	Y	Z	A	B	C
120	70	100	400	300	500

Total purchases in June 2007 are estimated at Rs 6.0 million.

The management was not following any specific policy about stock holdings. But from July onward it has decided to maintain stock equal to one month requirements.

- (vi) 80% of the sales are on credit. The company allows 60 days credit.
- (vii) All purchases are on 30 days credit.

Required:

- (a) Prepare a statement showing projected gross margin in respect of each product for the year 2007.
- (b) Prepare a cash budget for the 3rd quarter of the year 2007. (Monthly figures are not required)

- Q.3 Wilson Industries Limited had been using a single overhead rate, based on machine hours for determining the costs of its four products. The company has recently reviewed its marketing strategy and has appointed a separate Product Manager for each of the products. Two of the Product Managers are not satisfied with the method of costing and have asked the Management Accountant to devise a more appropriate method.

The following data is available for the month of May 2007:

	W	X	Y	Z
<u>Cost per unit:</u>				
Direct material (Rs)	348	256	425	490
Direct labour @ Rs 22 per hour	286	308	220	440
Factory overhead	240	400	360	300
Total cost	874	964	1,005	1,230
<u>Other data:</u>				
Output	2,000	1,500	1,000	1,800
Batch size	80	50	50	60
Inspection time per batch - hours	20	30	30	20
No. of purchase orders raised	10	6	8	8

A total of 3,300 machine hours were used during the month. Details of actual factory overheads incurred during the month are as under:

	Rupees
Indirect labour	600,000
Indirect material	363,000
Purchase department costs	144,000
Inspection department costs	312,000
Set up costs	210,000
Electricity and Gas	200,000
Others	151,000
	<u>1,980,000</u>

Break-up of indirect labour is as follows:

Salaries of supervisors and foremen	60%
Salaries of time keeping department	20%
Salaries of cleaners and maintenance staff	20%
	<u>100%</u>

Required:

Calculate the cost per unit under ABC costing method.

(15)

- Q.4 HSB & Co. purchases 1.0 million units of a product 'ABYZ' per annum from CHK & Co. The cost of each unit is Rs 300. The annual costs associated with purchasing department were Rs 1,800,000 last year. 85% of the costs are variable and the costs are expected to increase by 10% during the current year. It has been estimated that 15% of the variable costs relate to purchasing of 'ABYZ' from CHK & Co.

The annual stock holding costs other than financial costs are Rs 30 per unit of which 60% are variable costs. Storage costs will not increase during the year. Over the years, HSB has followed a policy of purchasing 50,000 units at a time. The marginal cost of borrowing for HSB is 10%.

Required:

- (a) Calculate the number of units that HSB should order to reduce the relevant costs to the minimum.

(4)

- (b) CHK has offered a discount of 1% if the quantity ordered is 100,000 units or more. Should HSB accept the offer?
- (c) Compute the ordering and holding cost if HSB wants to maintain a safety stock of 20,000 units. (15)

Q.5 A company produces two products A and B. Each of the products passes through two departments Y and Z having monthly capacity of 240 and 270 hours respectively. The number of hours required to produce each unit is given below:

	Y	Z
A	4	3
B	2	4

Each unit of product A contributes Rs 300 whereas each unit of product B contributes Rs 200 towards the profit of the company

Required:

- (a) Construct the set of constraints in the form of inequalities for the given situation. (02)
- (b) Plot the inequalities constructed in part (a) on a graph and identify the feasible region. (04)
- (c) Using the co-ordinates of the corner points of the feasible region; determine the maximum profit that the company can earn and the number of units that will be produced, if the profit is to be maximized. (04)

Q. 6 Gujranwala Furnitures Limited (GFL) manufactures standardized furniture for supply to factories and offices. The company is a family concern and some young members of the family have recently been inducted into the management. They are confident that the profitability of the company can be improved substantially. In order to achieve this goal, they have planned to introduce a quality management program (QMP). The details of the plan and the related estimates are given below:

- (i) Bulk of the company's sales comprises of two types of special units i.e. A and B which are produced in bulk quantities. Annual sales are estimated at 80,000 and 120,000 units of product A and B respectively. Approximately 3% of the units are returned by the customers due to defects beyond repairs. Such units are required to be replaced and the returned units are sold as scrap for Rs 400 and Rs 600 per unit of A and B respectively.
- (ii) The company maintains a safety stock of 15,000 units of each product and 2,000 cubic feet of wood. Annual stockholding cost of each unit is approximately 5% of the cost per annum.
- (iii) Cost of wood is Rs 4,000 per cubic foot. Approximately 0.3 and 0.5 cubic foot of wood is required to manufacture product A and B respectively. Cost of other material is approximately 2% of the cost of wood, which being immaterial may be ignored. During storage 2% of the wood loses its essential characteristics and is returned to the respective suppliers but only 75% of the cost is refunded by them. The cost of transportation to the suppliers' godown has to be borne by the company and amounts to approximately Rs 50 per cubic foot.

The management intends to introduce a Just in Time (JIT) purchasing and inventory management system. It has made arrangements with three leading suppliers who have assured immediate and quality supplies. As a result, the returns are expected to be reduced to 0.25% and cost of inspections amounting to Rs 1.2 million will also be saved. However, the cost of wood will increase to Rs 4,600 per cubic foot.

- (iv) Wood is issued to the processing department. Most of the workers in the department have been in the employment of the company for a very long time. The management plans to offer suitable training which will improve the standard of manufacturing. Some of the very old employees would be replaced. However, they will be accommodated in other areas, although presently there are no vacancies. The cost of training will be Rs 6.0 million. The total salaries of the department will be increased by Rs 500,000 per month, which include Rs 200,000 payable to the redundant staff.

As a result of the above, the quality will improve and it is estimated that the returns from customers will reduce to 0.25%. Moreover, the wastage which currently stands at 5.0% is also expected to be reduced to 2.0%.

- (v) New machines will be installed in the finishing department, which will reduce the overall cost per unit by 12%. Presently, the costs are Rs 400 and Rs 500 for product A and B respectively.
- (vi) The proposed process improvements will reduce the stock holding requirement. Safety stock will be reduced to 500 cubic feet of wood and 200 units of each finished product.
- (vii) For implementing the program, the company will appoint a consultant who will charge Rs 6.0 million for supervising the whole process.
- (vii) As a result of improved quality of the product the company expects to increase the price by 8%. However, some of its customers may not be willing to pay the higher price and the sales may drop by 5%. The present selling prices of the products A and B are Rs 2,500 and Rs 4,000 respectively.

Required:

Calculate the net increase / decrease in profit that the company is expected to earn after the above changes have been made.

(25)

(THE END)