



December 4, 2007

**MANAGEMENT ACCOUNTING**

(MARKS 100)

(3 hours)

Q.1 MTS Limited manufactures chemicals A, B and C. The manufacturing is carried out in two processes. The first process involves processing of raw material DDM. In the first process, the three products are produced in a raw form. All these products are processed further to bring them into saleable condition.

The following budgeted information is available in respect of the manufacturing process:

	Product A	Product B	Product C
Budgeted production – kgs	9,000	17,000	1,920
Joint costs	264,000	207,000	9,000
Separate processing costs	80,000	120,000	10,000
Fixed costs	16,000	24,000	1,000
Evaporation loss in the second process	10%	15%	4%
Selling price per kg	60	25	10

Joint costs are allocated in the ratio of sales value of the final output. 75% of the joint costs represent the cost of raw material DDM. Normal loss in the first process is 20% of the input.

The research department has informed the CEO that another raw material FFS is now available in the market at a price which is 33.33% higher than the price of DDM. If FFS is used instead of DDM, the company can derive the following benefits:

- The ratio of output after the first process will change to 7:8:1 for A, B and C respectively.
- Evaporation loss in the second process will reduce by 20%.

**Required:**

- (a) Assuming that the total input in the first process will remain the same, compute whether MTS Limited should start using FFS in place of DDM. (11)
- (b) Describe any other matters which may be relevant in making the above decision. (02)

Q.2 Muneer Technology Limited (MTL) produces two products i.e. X and Z. The production is carried out in two departments A & B. Following are the details:

	X	Z
Contribution margin per unit – Rs.	160	360
Production hours per unit		
Department A	20	32
Department B	10	24

Total hours available in department A & B are 14,000 and 9,000 respectively.

**Required:**

Calculate shadow or opportunity price per hour of capacity if 2,000 hours are added in the capacity of department A. (16)

Q.3 Sikandar Enterprises Limited is organized into many autonomous divisions. The head of each division is a General Manager who is responsible for all aspects of the divisional operations including financial management with very little interference from the Head Office.

The Chief Operating Officer (COO) of the company will retire in next year and the Board of Directors is looking for a replacement. After considering various candidates, the Board has short listed the GMs of division C and E.

GM of division C had been managing the division for the last seven years. GM of division E had served as GM of division B for two years before taking over division E which was formed in 2005. The financial results of their performance in the past three years are reported below:

	Division C			Division E		
	2005	2006	2007	2005	2006	2007
	-----Rupees in thousands-----					
Estimated industry sales	14,000	17,000	18,000	8,000	10,000	11,000
Divisional sales	1,200	1,300	1,400	550	700	900
Variable costs	550	580	620	260	300	350
Fixed direct costs	480	500	520	200	230	260
Allocated head office costs	125	175	200	70	140	185
Total costs	1,155	1,255	1,340	530	670	795
Net income	45	45	60	20	30	105
Assets employed	400	420	440	230	370	800
Liabilities	120	125	135	60	120	200
Net investment	280	295	305	170	250	600

**Required:**

- Calculate the accounting ratios which in your opinion are best suited for measuring the performance of the General Managers, in the above situation. **(05)**
- What additional measures may be relevant for evaluating the divisional performance? **(03)**
- Which GM would you recommend for the position of Chief Operating Officer? Give reasons to support your recommendation. **(04)**

Q.4 Pure Chemicals Limited (PCL) are involved in importing a chemical HCC in bulk quantities for use in their factory. Presently they place their orders in quantities of 60 tons each with a manufacturer in Germany. It takes about 5 days to process the order and opening of a sight LC. Once the order is faxed, the consignment is received within 40 days. Payment is made to the supplier as soon as the LC documents are negotiated, which is usually 15 days from the opening of LC. The lead time usage is 45 tons and PCL has a policy of keeping a buffer stock of 30 tons. The cost of import is Rs. 27,600 per ton which includes C & F, customs duty of 20% of C & F and sales tax of 15% of C & F plus customs duty which is subsequently claimed as input tax. The holding costs are Rs. 2,400 per ton per annum excluding the financial costs. Ordering costs are Rs. 5,000 per order.

Recently the procurement department of the company has explored an opportunity of import of the same chemical from a supplier in Singapore. The supplier is offering a price which will result in a cost of import of Rs. 25,300 per ton inclusive of sales tax and customs duty. However, it has informed PCL that it will be supplying a quantity of 120 tons in each order. As a result of the change, the delivery time is expected to be reduced to 30 days from the date the processing of order is commenced. The payment time is expected to remain the same that is 15 days before the receipt of goods.

(3)

It has been estimated that as a result of decrease in delivery time the company will be able to reduce the buffer stock to 20 tons. The company's incremental cost of borrowing is 12% per annum.

Assume that one year consists of 360 days.

**Required:**

Considering all relevant costs, determine whether the company should decide to import from Singapore. (14)

Q.5 Shahbaz Industries Limited (SIL) is engaged in the production of industrial components for various medium sized industries. Over the past many years, it has built up a reputation of being a highly organized company. Its customers rely on it for timely supply of quality products.

It has recently accepted an order for supply of 52,000 units of a product 'SSU' at the rate of Rs. 85,000 per unit. The supply will continue for a period of one year at the rate of 1,000 units per week.

SSU consists of three components X, Y and Z. The production capacity of the company is limited and it can not allocate more than 22,500 machine hours per week for this order. The company can sub-contract the work but in that case, further testing will have to be carried out and the testing cost will increase from Rs. 200 to Rs. 300 per component.

The relevant information is given in the table below:

	Components		
	X	Y	Z
Components per unit	2	5	6
Material cost per component Rs.	1,200	2,000	2,500
Machine hour per component	1	2	3
Sub-contracting charges (Rs. per unit)	7,000	28,000	45,000

Following other information is also available:

Direct labour per machine hour	Rs. 1,000
Variable production overheads ( <i>inclusive of testing cost</i> )	50% of direct labour
Fixed overheads per week	Rs. 800,000

SIL is considering two different options as given below:

- **Option A** – Produce as many components as possible and sub-contract the remaining.
- **Option B** – Produce maximum possible completed units and sub-contract the remaining.

**Required:**

Determine the optimal production plan by calculating weekly profits in case of option A and B as stated above. (21)

(4)

Q.6 Chaman Corporation manufactures a single product ANJ. During the month of November 2007, it sold 5,120 kgs of the product @ Rs. 40 per kg. The budgeted sales were 5,000 kgs @ 42 per kg.

150 batches of the product were manufactured during the month. The costs incurred during the month are as follows:

	<b>Materials</b>	<b>Kg</b>	<b>Price per Kg Rs.</b>	<b>Total Rs.</b>
	A	2400	7.70	18,480
	B	2000	25.60	51,200
	C	1150	62.40	71,760
		<u>5550</u>		<u>141,440</u>
<b>Labour:</b>		<b>Hours</b>	<b>Rate per hour Rs.</b>	
Department X		500	52	26,000
Department Y		360	40	14,400
				<u>40,400</u>

Standard costs per batch as determined by the Technical Department are given below:

	<b>Materials</b>	<b>Kg</b>	<b>Price per Kg (Rs.)</b>	<b>Total (Rs.)</b>
	A	17.0	6	102
	B	11.5	26	299
	C	8.5	60	510
		<u>37</u>		<u>911</u>
Less: Standard loss		1		
Standard yield		<u>36</u>		
<b>Labour:</b>		<b>Hours</b>	<b>Rate per hour (Rs.)</b>	<b>Total (Rs.)</b>
Department X		4	50	200
Department Y		2	36	72
				<u>272</u>

There was no opening or closing stocks.

**Required:**

- Calculate the following material variances:
  - price
  - usage
  - mix
  - yield
- Calculate the following labour variances for each of the production departments:
  - Cost
  - Efficiency
  - rate
- Calculate the sales margin variances.

(24)

(THE END)