

MANAGEMENT ACCOUNTING-DECISION MAKING - STAGE 5

- Q.2 (a)** Before finding out the profit for 2010, it is necessary to work out the contribution per Kg for various products: Marks

	PRODUCTS				
	Washing	Detergent	Bleaching	Rust	
	Powder	Powder	Powder	Remover	
Selling price	<u>Rs.65.25</u>	<u>Rs.110.25</u>	<u>Rs.132.75</u>	<u>Rs.192.00</u>	
Less: Variable costs					
Direct materials	18.00	40.50	31.50	72.00	
Direct labour	22.50	30.00	54.00	72.00	
Variable overheads	6.75	15.00	18.00	19.50	
	<u>47.25</u>	<u>85.50</u>	<u>103.50</u>	<u>163.50</u>	
Contribution (1 – 2)	18.00	24.75	29.25	28.50	2

Existing spare capacity of 10,000 Kg has to be utilized by increasing production of Bleaching Powder to 35,000 Kg (due to highest contribution).

	Products					
	Washing Powder	Detergent Powder	Bleaching Powder	Rust Remover	Total	
Revised production (Kg)	<u>20,000</u>	<u>5,000</u>	<u>35,000</u>	<u>15,000</u>		1
Contribution per Kg	18.00	24.75	29.25	28.50		
Total contribution	360,000	123,750	1,023,750	427,500	1,935,000	2
Fixed overheads	225,000	75,000	675,000	540,000	(1,515,000)	
Profit	135,000	48,750	348,750	(112,500)	420,000	2

- (b)** Statement showing the profitability of the products during 2011

	Washing	Detergent	Bleaching	Rust	Total	
	Powder	Powder	Powder	Remover		
Production (Kg)	<u>20,000</u>	<u>30,000</u>	<u>35,000</u>	<u>15,000</u>		
Contributions per Kg	18.00	24.75	29.25	28.50		
Less: 10% increase in DM cost	1.80	4.05	3.15	7.20		
Revised contribution per Kg	16.20	20.70	26.10	21.30		1
Total contribution (1 x 4)	324,000	621,000	913,500	319,500	2,178,000	1
Fixed overheads	225,000	180,000	675,000	540,000	1,620,000	
Profit (5 – 6)	99,000	441,000	238,500	(220,500)	558,000	2

- (c)** Desired contribution:

	Rs.	
Fixed cost	1,620,000	
Desired profit	420,000	
	<u>2,040,000</u>	1
Less: Contribution from Washing power, Bleaching powder & Rust remover	1,557,000	1
Contribution desired from Detergent powder	<u>483,000</u>	
Quantity of Detergent powder to be sold (Rs.483,000/ Rs.20.70*)	23,333	1

* Contribution per Kg from Detergent powder

DISCLAIMER

The suggested answers provided on and made available through the Institute's website may only be referred, relied upon or treated as a guide and substitute for professional advice. The Institute does not take any responsibility about the accuracy, completeness or currency of the information provided in the suggested answers. Therefore, the Institute is not liable to attend or receive any comments, observations or critics related to the suggested answers.

MANAGEMENT ACCOUNTING-DECISION MAKING - STAGE 5

Q. 3 (a)	Gross quantity of input material required to be procured		Marks
	Total output	4,800 tonnes	
	Add _ Scrap		
	Moulding Dept. – 5%	240 tonnes	
	Machining Dept. – 10%	<u>480 tonnes</u>	
		<u>5,520 tonnes</u>	2

(b) Selection of sources of supplier and price, at which the inputs are to be procured

Comparative cost of procurement

Sources	Korea	China	Taiwan	
Quantity to be supplied (tonnes)	3,600	4,000	5,520 (entire qty.)	
Price (Rs. Million/ tonne)	0.30	0.275	0.32500	
Less discount 5%	—	—	0.01625	
Net price	0.30	0.275	0.30875	
Add: Transport	0.01	0.015	—	
Landed cost	0.31	0.29	0.30875	
	1	+	1	= 3

The material accordingly will be procured as under:

	Rs/ Million	
From China – 4,000 @ Rs.0.29 million/ tonne	1160.00	1
From Korea – 1,520 tonne @ Rs.0.31 million/ tonne	471.20	1
Total	1631.20	1

Average cost/ tonne being Rs.0.2955 million. Therefore Taiwan is costliest source, so it is ignored.

(c) Computation of annual profitability

	Total 4,800/ tonne Rs./ million	Per tonne Rs.	
Material cost @ 0.2955/ tonne	1418.40	295,500	
Add: Scrap @ 15%	212.76	44,325	
	1631.16	33,825	
Less: Realizable value of scrap			
Moulding dept: (4.800 x 0.05) tonne @ Rs.75,000/tonne	(18.00)	(3,750)	
Machine dept: (4.800 x 0.10) tonne @ Rs.100,000/ tonne	(48.00)	(10,000)	
Net material cost	1565.16	326,075	2
Labour:			
Moulding department	8.00	1,667	
Machining department	24.00	5,000	
	32.00	6,667	2
Overhead:			
Moulding department	32.00	6,667	
Machining department	72.00	15,000	
	104.00	21,667	
Total cost of production	1701.16	354,409	2
Distribution cost (15% of production cost)	255.174	53,161	1
Total cost	1,956.334	407,570	1
Sales realization			
Northern Zone: 3,000 tonne @ Rs.750,000/ tonne	2,250.000	—	
Southern Zone: 1,800 tonne @ Rs.1,000,000/ tonne	1,800.000	—	
	4,050.000	843,750	2
Profit	2,093.666	436,180	2
Profit as % of sales.		51.70%	

DISCLAIMER

The suggested answers provided on and made available through the Institute's website may only be referred, relied upon or treated as a guide and substitute for professional advice. The Institute does not take any responsibility about the accuracy, completeness or currency of the information provided in the suggested answers. Therefore, the Institute is not liable to attend or receive any comments, observations or critics related to the suggested answers.

- Q.4 (a)** Supply Chain is a series of customer – supplier links through which goods and services pass to a final customer. The primary focus is on the materials flow which is distinct from the processes carried out on them. Supply Chain Management (SCM) *is concerned with the co-ordination of all the processes that enable products and services to be brought to final customer at the right time, right cost and right quantity.* Supply Chains are usually mapped out in terms of links between organizations. Marks

The functions covered by SCM are:

Purchasing	Information system
Logistics	Marketing
Engineering	Materials
Distribution	Warehousing
Operations	Production
Procurement	Stores
Transportation	

It has lot of benefits; one may have control and monitoring of supply, quantity, scheduled quantity and all other issues pertaining to products. This approach also helps in shifting to JIT system. It also reduces the cycle time. As Japanese companies have achieved faster cycle times and higher quantity at lower cost through having closer relations with their suppliers. It also helps in raising capital turnover ratio which ultimately helps in raising profits. On concentration on this system the company can reduce its vendors and supplier which will not improve the quality but also give price advantage. 8

(b) Contribution per unit		<u>ALPHA</u>	<u>BETA</u>	<u>GAMA</u>	
Total contribution (FC + Profit)	Rs.	498,000	504,000	510,000	1
No. of units sold		10,000	14,000	17,000	
Contribution per unit	Rs.	49.80	36.00	30.00	3

Expected production (units):

Alpha = $14,000 \times 0.6 + 12,000 \times 0.1 + 11,000 \times 0.3 = 12,900$ 1

Beta = $18,000 \times 0.4 + 16,000 \times 0.2 + 15,000 \times 0.4 = 16,400$ 1

Gama = $13,000 \times 0.1 + 18,000 \times 0.7 + 16,000 \times 0.2 = 17,100$ 1

Contribution on expected production:

Alpha = $12,900 \text{ units} \times \text{Rs.}49.80 = \text{Rs.}642,420$ 1

Beta = $16,400 \text{ units} \times \text{Rs.}36.00 = \text{Rs.}590,400$ 1

Gama = $17,100 \text{ units} \times \text{Rs.}30.00 = \text{Rs.}513,000$ 1

Rs.1,745,820

Fixed Cost (Rs.1,350,000)

Net Profit Rs.395,820

Product Alpha gives the maximum total contribution.

DISCLAIMER

The suggested answers provided on and made available through the Institute's website may only be referred, relied upon or treated as a guide and substitute for professional advice. The Institute does not take any responsibility about the accuracy, completeness or currency of the information provided in the suggested answers. Therefore, the Institute is not liable to attend or receive any comments, observations or critics related to the suggested answers.

Q. 5 (i)

	Profitability Statement		Marks
	Semi Automatic Machine Rs.	Fully Automatic Machine Rs.	
Estimated savings in scrap	80,000	120,000	2
Estimated savings in direct wages:			
Semi-Automatic Machine Employees not required 150 @ Rs.4,800	720,000		1
Ful-Automatic Machine Employees not required 200 @ Rs.4,800		960,000	1
	800,000	1,080,000	
Less: Additional cost:			
Cost of indirect materials	48,000	64,000	
Additional cost of Maintenance	152,000	216,000	1+1
Additional profit before tax	600,000	800,000	1+1
Less: 50% Tax	300,000	400,000	
Profit after tax	300,000	400,000	1+1

Presentation 1

- (ii) Payback period:
- | | | | |
|-----------------|-----------|-----------|-----|
| Cost of machine | 1,200,000 | 2,000,000 | |
| Profit/ year | 300,000 | 400,000 | |
| Payback period | = 4 years | = 5 years | 1+1 |
- (iii) Semi-Automatic Machine has the shorter pay-back period of 4 years, so it is more profitable and is recommended to be purchased. 1

DISCLAIMER

The suggested answers provided on and made available through the Institute's website may only be referred, relied upon or treated as a guide and substitute for professional advice. The Institute does not take any responsibility about the accuracy, completeness or currency of the information provided in the suggested answers. Therefore, the Institute is not liable to attend or receive any comments, observations or critics related to the suggested answers.

- Q. 6** Before evaluation of the proposal, it is necessary to compute cash out flows and cash inflows, depreciation, income tax and net cash flow: Marks

	Rs.	
Cash out flow		
Cost of new machinery	10,000,000	
Payment on account of cancellation of lease	125,000	
Working capital	562,500	
Total cash outflow	10,687,500	2
Expenditures towards market research	1,250,000	
Less: tax saving @ 50%	625,000	
Net cash flow (first year only)	625,000	1
Opportunity cost (Factory rent foregone due to cancelation of lease)	125,000	
Less Tax savings	62,500	
Net cash flow (to be considered each year for 5 years)	62,500	1

Computation of depreciation @ 15% WDV, Income Tax, and net cash flow from operations

Year	Book Value	Depreciation @ 15% WDV	Cash flows from operations	50% tax on (col4-col3)	Net cash flows (before depreciation but after income tax) (col4 – col5)	
1	2	3	4	5	6	
1	10,000,000	1,500,000	5,000,000	1,750,000	3,250,000	1
2	8,500,000	1,275,000	6,250,000	2,487,500	3,762,500	1
3	7,225,000	1,083,750	8,125,000	3,520,625	4,604,375	1
4	6,141,250	921,200	7,500,000	3,289,400	4,210,600	1
5	5,220,050	783,000	3,750,000	1,483,500	2,266,500	1

Note: Depreciation will not affect the cash flows. Therefore, net cash flows from operations have been taken before depreciation.

Sale of machinery

	Rs.	
Book value at the end of 5 th year	5,220,050	
Less: Depreciation	783,000	
	4,437,050	
Less: Salvage value	3,937,500	
Loss on sale of machinery	499,550	2
Tax saving (50% of 499,550)	249,775	1

Cash flow in the 5 year due to sale of machinery will be Rs. 3,937,500 + 249,775 = 4,187,275

It is given that addition to current assets will require Rs. 562,500 at the commencement of the amount is fully recoverable at the end of year 5, it will be shown as cash inflow.

DISCLAIMER

The suggested answers provided on and made available through the Institute's website may only be referred, relied upon or treated as a guide and substitute for professional advice. The Institute does not take any responsibility about the accuracy, completeness or currency of the information provided in the suggested answers. Therefore, the Institute is not liable to attend or receive any comments, observations or critics related to the suggested answers.

The company's required rate of return after tax is 10%. It means net cash flows will be reduced to present value by applying 10% of P.V. Factor.

Computation of Net Present Value of the proposal

Year	Cash outflows	Cash inflows	Net cash flows	10% PV factor	Net present	
0	(10,687,500)	–	(10,687,500)	1.000	(10,687,500)	1
1	(625,000)					
	(62,500)	3,250,000	2,562,500	0.909	2,329,313	2
2	(62,500)	3,762,500	3,700,000	0.826	3,056,200	1
3	(62,500)	4,604,375	4,541,875	0.751	3,410,948	1
4	(62,500)	4,210,600	4,148,100	0.683	2,833,152	1
		2,266,500				
5	(62,500)	*4,187,275	6,953,775	0.621	4,318,294	3
		562,500				
	Net present value				5,260,407	1

It is recommended that the new product should be introduced in the market as the NPV of the proposal is positive.

* 3,937,500 + 249,775

THE END

DISCLAIMER

The suggested answers provided on and made available through the Institute's website may only be referred, relied upon or treated as a guide and substitute for professional advice. The Institute does not take any responsibility about the accuracy, completeness or currency of the information provided in the suggested answers. Therefore, the Institute is not liable to attend or receive any comments, observations or critics related to the suggested answers.