

Cost Audit & Management Audit

ICWAI - Stage IV

Question: 1

The table gives the Cost of Production of Product X:

Particulars	Production 13,600 units	
	Total Rs. Lakhs	Cost Rs./Unit
(i) Raw Materials	679.47	4,996
(ii) Wages and Salaries	15.96	117
(iii) Stores and Chemicals	20.20	149
(iv) Services and Utilities	87.64	644
(v) Depreciation	0.80	6
(vi) Other Overheads	4.41	32
(vii) Administration Overheads	6.40	47
(viii) Stock Adjustment	Nil	Nil
Total	814.88	5,991
(ix) Selling Overheads	18.75	138
Total	833.63	6,129
(x) Interest	42.60	314
(xi) Total Cost of Sales	876.23	6,443
(xii) Sales Realization (Inclusive of Excise Duty)	1294.00	9,515
(xiii) Margin of Profit	417.77	3,072

You are required to arrive at the following Ratios for the purpose of Para 24 of the Annexure to the Cost Audit Report for the product only :

- Profit as a percentage of Capital Employed.
- Profit as a percentage to Sales Turnover.

Note :

- Working Capital is assessed as 3 months cost of Sales (of relevant elements of cost only) as separate data relating to Current Assets and Current Liabilities for the product is not available.
- Ratio of Net Block to depreciation is 10 : 1. The Value of Gross Block is Rs 75 lakhs and Capital Work-in-progress is Rs. 20 lakh.
- Excise Duty is 40% of the Selling Price.

Answer

Net Block = Rs. 80,000 × 10 = Rs. 8 lakh

Working capital = Cost of sales - (Interest + Depreciation)
= Rs. 876.23 lakh - (42.60 + 0.80 lakh) = Rs. 832.83

Working Capital @ 3 months cost of sales = 832.83 / 4 = Rs. 208.20 lakh

Capital employed = Net block + Working capital = Rs. 8 lakh + Rs. 208.2 lakh = Rs. 216.2 lakh

Excise Duty = 1294 × 40 / 140 = Rs. 369.71 lakh

Profit (Excluding Excise Duty) = Rs. (417.77 - 369.71) lakh = Rs. 48.06 lakh

Profit before Interest and Liabilities = Rs. (48.06 + 42.6) lakh = Rs. 90.66 lakh

Net turnover = Rs. (1294 - 369.71) lakh = Rs. 924.29 lakh

(a) Ratio of profit to capital employed = 90.66 / 216.20 × 100 = 41.93 %

(b) Ratio of profit to sales turnover = 90.66 / 924.29 × 100 = 9.81 %

Question: 2

ABC Ltd. has received an enquiry for the supply of 2,00,000 numbers of Special Type of Machine Parts. Capacity exists for the manufacture of the machine parts, but a fixed investment of Rs. 80,000 and Working capital to the extent of 25% of Sales Value will be required if the job is undertaken.

The Costs are estimated as follows :

Raw Materials - 20,000 kgs @ Rs. 2.50 per kg.

Labour Hours - 9,000 of which 1,000 would be overtime hours payable at double the labour rate.

Labour Rate - Rs. 2 per hour.

Factory Overhead - Rs. 2 per direct labour hours.

Selling and Distribution Expenses - Rs. 23,000

Material Recovered at the end of the operation will be Rs. 6,000 (estimated).

The Company expects a Net Return of 25% on Capital Employed.

You are the Management Accountant of the Company. The Managing Director requests you to prepare a Cost and Price Statement indicating the price which should be quoted to the Customer.

Answer

Statement of Cost and Price Quotation

Product Machine Parts (Special Type)	Quantity = 2,00,000 units	
	Rs.	Rs.
Materials (20,000 kgs @ Rs. 2.50)	50,000	
Less: Scrap value	6,000	44,000
Labour -		
8,000 hours @ Rs. 2	16,000	
1,000 (OT) hours @ Rs. 4	4,000	20,000
Prime Cost		64,000
Factory overhead (9,000 hrs. @ Rs. 2)		18,000
Factory Cost		82,000
Selling and Distribution Expenses		23,000
Total Cost		1,05,000
Profit (Expected)		28,333
Sales		1,33,333

Selling Price / unit = 1,33,333 ÷ 2,00,000 = Rs. 0.67

Working Notes :

Calculation of sales

Suppose.

Sales = S = Total cost + 25% of capital employed = 1,05,000 + 25/100 (80,000 + S/4)

= 1,05,000 + 20,000 + S/16

or, 16S = 16,80,000 + 3,20,000 + S

or, 15S = 20,00,000

i.e., S = 1,33,333.33

Sales = Rs. 1,33,333

Profit = Sales - Cost = 1,33,333 - 1,05,000 = Rs. 28,333

Working Capital = 1/4th of Sales = 1,33,333 × 1/4 = Rs. 33,333

Question: 3

Following data is available for a company relating to the Cost of Production of a product subjected to Cost Audit.

Prepare the Export Profitability Statement to be included in the Annexure to the Cost Audit Report.

Production	10,000 Units	Rs.
Sales (Local)	9,000 units	2,02,500
Sales (Export)	1,000 units	20,000
Materials consumed	20 Tonnes @ Rs. 5 kg.	1,00,000
Imported Component @ Rs. 3 / unit		30,000 (One unit/unit of production)
Direct Labour		10,000
Factory Overhead		15,000
Administrative Overhead		5,000
Freight & Packing (Local Sales)		4,500
Packing for Export		2,000
Handling at Port		500
Opening Work-in-progress		10,000
Closing Work-in-progress		5,000

Additional Information :

- Export incentive of 10 % on F.O.B. is receivables.
- Draw Back-on-Duty paid on Raw Materials and Components available on exports is Rs. 2,500.

Answer

Taking into consideration, the requirements of provisions under Cost Audit (Report) Rules, like showing separately Local Sales and Export Sales, with details like Quantity, Net Realisation Price/Unit, Packing Charges, etc. Profitability Statements have been prepared as below :

Statement of Cost of Production

Production	Total	10,000 units Per unit
	Rs.	Rs.
Direct Materials (20,000 kgs @ Rs. 5 per kg)	1,00,000	10.00
Imported components (10,000 units @ Rs. 3 / unit)	30,000	3.00
Direct Labour	10,000	1.00
Prime cost	1,40,000	14.00
Factory overhead	15,000	1.50
Opening W.I.P.	10,000	1.00
	1,65,000	16.50
Less: Closing W.I.P.	5,000	0.50
Works Cost	1,60,000	16.00
Administrative overhead	5,000	0.50
Cost of Production	1,65,000	16.50

Statement of Cost and Profit of Export Sales

	Export Sales 1,000 units Total (Rs.)	Per unit (Rs.)
Cost of production	16,500	16.50
Export Packing	2,000	2.00
Handling at port	500	0.50
(A) Cost of sales	19,000	19.00
Export sales realisation	20,000	20.00
Cash incentive @ 10% of F.O.B.	2,000	2.00
Duty Drawback on components	2,500	2.50
(B) Total realisation	24,500	24.50
Profit on Export (B) - (A)	5,500	5.50

Question: 4

The following data are extracted from the accounts of a factory manufacturing industrial alcohol for pollution control:

	Rs.
(a) Undertaking environment impact studies	2,45,000
(b) Depreciation of Bio-gas Plant installed during the year	6,75,000
(c) Other materials purchased for manufacture of Compost manure	5,40,000
(d) Salaries Wages for Bio-gas and Compost manure plant	1,20,000
(e) Sale proceeds of manure sold	3,40,000

How you will treat the above items in the Cost Accounting Records taking into account the social responsibility of the company for preventing pollution ?

Answer

Most of the Cost Accounting Records Rules provide for showing the expenditure incurred for effluent treatment or pollution control as a separate element of cost.

Industrial Alcohol Plants are one of the most polluting industries and unless the effluents are properly treated and disposed of, they will contaminate the environment and pollute the ground-water in the neighbourhood. The company manufacturing the product has a social responsibility to prevent such pollution, and hence the expenditure incurred for that purpose is a legitimate cost in the manufacturing process.

The cost of effluent treatment in the pollution will be worked out as follows :

	Rs.
(a) Cost of environment impact studies	2,45,000
(b) Depreciation on Biogas Plant	6,75,000
(c) Material cost for Biogas manure	5,40,000
(d) Salaries and wages	1,20,000
	15,80,000
Less: Sale proceeds of organic manure	3,40,000
Net cost of Effluent Treatment	12,40,000

Question : 5

The following is the Profit & Loss Account of Pygmy Industries Ltd., a single product company :
(Rs. in lakhs)

Income :	
Gross Sales	3802.42
Other income	
Dividend received	2.01
Interest received	20.16
Profit on sale of Investments	1.37
Sale of scrap	4.87
Total Income	3830.83
Expenses :	
Materials consumed	2648.94
Increase in stock	(31.79)
Stores and spares consumed	80.61
Power and fuel	98.78
Repairs and maintenance	12.52

Labour, processing and machine hire charges	11.29
Total employee costs	44.11*
Samples, sales promotion and advertisement	3.72
Brokerage, discount and commission	32.85
Warehousing and distribution expenses	38.84
Additional Sales Tax/Turnover Tax (not recoverable)	17.20
Provision for bad debts	5.80
Insurance, rates & taxes and other administrative expenses	58.37
Central Excise Duty paid	358.28
Interest and finance charges	121.60
Depreciation	156.51
Loss on sale of assets	<u>2.80</u>
	<u>3660.43</u>

* This includes employee costs of selling and distribution Rs. 2.32 lakh

Closing Stock as on 31.3.2002 :

	(Rs. lakhs)
Raw materials	37.85
Stores of spares	72.01
Works-in-process	17.77
Finished goods	102.34

Work out the following ratios as indicated in the Annexure to the Cost Audit Report :

- Interest as a percentage of Sales.
- Selling and distribution costs as a percentage of sales
- Finished goods stock in terms of number of months cash cost of sales.

Answer

	Rs.(lakhs)		Rs.(lakhs)
Sales	3802.42	Interest & Fin. charges	121.60
Less: ED	<u>158.28</u>	Less: Interest received	<u>20.16</u>
Net sales	3444.14	Net Interest	101.44

Interest as a % on sales = $101.44/3444.14 = 2.95\%$

- Selling and Distribution Expenses.

	Rs. (lakhs)
Employee costs	2.32
Samples, sales promotion and advt.	3.72
Brokerage etc.	32.85
Warehousing & Distrn	38.84
Addl. S.T.	17.20
Prov. for bad debts	<u>5.80</u>
	<u>100.73</u>

Selling & Distribution Expenses as a % on sales $100.73/3444.14 = 2.92\%$.

- Cost of Sales

	Rs.(lakhs)
Total expenses	3660.43
Less: Excise duty	358.28
Interest received	20.16
Loss on sale of F.A.	2.80
Sale of scrap	<u>4.87</u>
	<u>386.11</u>

Cost of sales 3274.32

	Rs. (lakhs)
Cost of sales	3274.32
Less: Depreciation	<u>156.51</u>
Cash cost of sales for the year	<u>3117.81</u>

Per month $3117.81/12 = 259.82$

Stock of finished goods 102.34

Stock of finished goods in terms of number of months

Cash cost of sales = $102.34 / 259.82 = 0.39$ months.

Question : 6

The following is the abridged Balance Sheet of Powerpack Batteries Ltd:

	31.3.2003	31.3.2002	(Rs. in lakhs)
Liabilities			
Share Capital	300	300	
Debenture Redemption Reserve	25	30	
Capital subsidy from State Government	30	30	
Revaluation Reserve	125	140	
General Reserve	160	120	
Balance in Profit & Loss A/c.	48	32	
Secured Loans	275	295	
Unsecured Loans	<u>123</u>	<u>117</u>	
	<u>1086</u>	<u>1064</u>	
Assets:			
Gross Block	725	680	
Accumulated Depreciation	(315)	(290)	
Capital Work-in-Progress	43	37	
Investments	15	15	
Current Assets:			
Inventories	417	441	
Sundry Debtors	182	195	
Advances for Capital Equipment	24	17	
Other Loans & Advances	144	137	
Cash & Bank Balances	21	19	
Current Liabilities:			
Sundry Creditors			
For Capital Expenses	(17)	(21)	
For Others	(185)	(197)	
Provision for Taxes	(64)	(71)	
Miscellaneous Expenses	<u>98</u>	<u>102</u>	
Total	<u>1086</u>	<u>1064</u>	

Notes :

- (a) Fixed Assets include Goodwill and Patents Rs. 122 lakhs (Previous year Rs. 137 lakhs).
(b) Term Loans due for repayment within 12 months are Rs. 96 lakhs (Previous year Rs. 84 lakhs).

Calculate the following for the company as a whole:

- (a) Capital Employed for the year ended 31.3.2003.
(b) Net Worth as on 31.3.2003 & 31.3.2002.
(c) Debt-Equity Ratio as on 31.3.2003.

Answer

- (a) Capital Employed :

	31.3.2003	31.3.2002
Gross Block	725	680
Less: Depreciation	315	290
Net Block	410	390
Less: Intangible Assets	122	137
Net Fixed Assets	288	253
Current Assets:	31.3.2003	31.3.2002
Inventories	417	441
Sundry Debtors	182	195
Loans and Advances	144	137
Cash and Bank	21	19
	<u>764</u>	<u>792</u>
Current Liabilities:		
Creditors- others	185	197
Provn. for taxes	64	71
Loans due in 12 months	96	84
	<u>345</u>	<u>352</u>
Working capital	419	440
CAPITAL EMPLOYED	707	693

Average capital employed $(707+693)/2 = 700$ Lakhs

- (b) Net worth :

	(Rs. Lakhs) 31.3.2003	(Rs. Lakhs) 31.3.2002
Share capital	300	300
Debenture Redemption Reserve	25	30
Capital Subsidy	30	30
General Reserve	160	120
Balance in P&L A/c	48	32
Equity	563	512
Less: Intangible Assets	122	137
Misc. Expenditure	96	102
Net Worth	345	273

- (c) Debt-Equity Ratio :

Debt : Secured & Unsecured Loans	398	412
Less : due in 12 months	96	84
Long term debt	302	328
Equity as in above	563	512
Debt Equity Ratio	0.54:1	0.64:1

Question 7

Following are the data available from a company which has both domestic & export sales. The company is subject to Cost Audit. Prepare a statement of export profitability.

Production	10,000 units
Sales	
Domestic	9,000 units @ Rs.22 per unit
Export	1,000 units @ Rs.17 per unit
Raw Materials Consumed	Rs. 90,000
Imported component used only for Export quality	Rs. 3,000
Direct Labour	Rs. 10,000
Factory Overhead	Rs. 15,000
Administrative Overhead	Rs. 5,000
Export Packing	Rs. 3,000
Freight and Packing for Domestic Sales	Rs. 4,500
Handling at Port	Rs. 500
Opening W.L.P.	Rs. 10,000
Closing W.L.P.	Rs. 5,000

For export an imported component is to be used at a cost of Rs. 3/- per unit. The indigenously produced component that is used for domestic sales and included in raw material consumption is Rs. 4/- per unit.

Drawback on the 1,000 units exported is Rs. 1,000.

Answer

Statement of Cost

Output: 10,000 units

	Rs.
Raw Materials	90,000
Less: Cost of components used for domestic sales (9000×4)	36,000
	54,000
Direct labour	10,000
Prime Cost	64,000
Factory overhead	15,000
	79,000
Add: Opening WIP	10,000
	89,000
Less: Closing WIP	5,000
Factory Cost	84,000
Administrative overhead	5,000
Cost of Production	89,000

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Cost/unit = Rs. 89,000/10,000 = Rs. 8.90

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Statement of Export Profitability

	Rs.
Cost of Export Sales (1000 units @ Rs. 8.90)	8,900
Cost of Import component used 91000 @ Rs. 3)	3,000
Export packing	3,000
Cost of handling at Port	500
Cost of Exports	15,400
Sales (1000 units @ Rs. 17)	17,000
Profit	1,600
Add: Duty Drawback on Export	1,000
Export Profit after adjustment	2,600

Question 8

The following transactions are extracted from Stores Bin Card relating to a component during the year 2002-03 :

Date	Receipt (units)	Issues (units)	Balance (units)
1.4.2002	200	-	200
18.4.2002	-	100	100
10.1.2003	-	50	50
16.3.2003	200	-	250
23.3.2003	-	250	-
Total consumption		400	

Calculate the Inventory Turnover Ratio.

Answer

Inventory turnover ratio = Average Consumption / Average Stock

Stock (units)	No. of days	Product
(a)	(b)	(c) = (a) × (b)
200	17	3400
100	267	26700
50	63	3250
250	15	3750
0	1	0
	365	37100

Average stock = 37100/365 = 101.64 units

Inventory turnover ratio = Average consumption / Average stock = 400/101.64 = 3.94.

Question : 9

In a factory producing industrial alcohol, biogas is generated from the waste wash. The biogas is used as a fuel in generating steam along with conventional fuel oil. The high pressure steam is first sent to the steam turbine and the exhaust steam is used in the process of manufacturing alcohol. The fall in the enthalpic value of the steam is 10%. From the following data, prepare separate cost sheets for Steam and Power.

	Boiler	Steam Turbine
	Rs.	Rs.
Cost of Water	209635	-
Fuel Oil	18377090	-
Biogas Plant Expenses	5160326	-
Stores & Chemicals	51415	13139
Salaries & Wages	591650	146565
Repairs & Maintenance	1312831	51524
Depreciation	344948	129905
Other Expenses	798714	24132
High Pressure Steam generated	33739 M.T.	
Power generated		1965990 K.W.H.

Answer

Cost of Steam

Quantity produced : 33739 T

	Total amount	Cost/MT of Steam
	Rs.	Rs.
Water	209635	6.21
Fuel oil	18377090	544.68
Biogas plant exps.	5160326	152.95
Stores and chemicals	51415	1.52
Salaries and wages	591650	17.53
Repairs and maintenance	1312831	38.91
Depreciation	344948	10.22
Other expenses	798714	23.67
	26846609	795.69

Cost of Power generated by Steam Turbine

Power generated 1965990 kwh

	Total amount	Cost/kwh
	Rs.	Rs.
Steam	26846609	13.66
Stores and Chemicals	13139	0.01
Salaries and wages	146565	0.07
Repair and Maintenance	51524	0.03
Depreciation	129905	0.06
Other expenses	24132	0.01
	27211874	13.84
Less: credit for exhaust steam	24161948	12.29
Cost of power used in Alcohol manufacture	3049946	1.55

Question : 10

The following figures are taken from the records of a company subject to Cost Audit. Calculate the Value Addition, its ratio as a percentage of sales and also show the distribution of the Value Added as required in Para 23 of the Annexure to Cost Audit Report:

	Rs. lakhs
Gross Sales (including E.D. of Rs. 2280 lakhs)	37400
Increase in closing stock of WIP & FG	114
Raw Materials, Packing Materials and Stores & Spares consumed	14520
Salaries & Wages and other employee benefits	6225
MD's Remuneration	62
Power & Fuel	5234
Rates & Taxes	174
Additional Sale Tax (not Recoverable)	748
Depreciation	1849
Interest	2120
Income from Investments	74
Profit on Sale of Assets	150
Other manufacturing, selling and distribution overheads (Purchased items)	1440
Provision for Taxes	175
Dividend Proposed	570

Answer

Para 23 : Value Addition and Distribution of Earnings

A. Value Addition	Rs. Lakhs	
1. Gross sales	37400	
2. Less: Excise Duty	2280	
3. Net sales	35120	
4. Adjustment in stocks (+)	114	
	35234	
5. Less : cost of bought out materials and services	21194	see details below
6. Value added	14040	
7. Income from other sources	224	
8. Earnings for distribution	14264	
B Distribution of Earnings		
1. Employees as salaries, wages and all benefits (including M.D.'s remuneration)	6287	
2. Shareholders' as dividend	570	
3. Retained Funds- (Depm. & Profits)	2341	See details below
	1849	
4. Government as Taxes		
a) Income-tax provision	175	
b) Rates and taxes	174	
c) Additional sales tax	748	1097
5. Others - Interest		2120
Total		14264
Bought out goods and services :		
Raw materials, packaging materials, stores & spares	14520	
Power and fuel	5234	
Other manufacturing expenses	1440	
Profits :		
Sales	35120	
Increase in stocks	114	
	35234	
Bought out goods and services	21194	
Employee costs	6287	
Depreciation	1849	
Taxes	1097	
Interest	2120	
	32547	
Profit	2687	
Other income	224	
	2911	
Less: Proposed dividend	570	
Retained profits	2341	

Value addition as % on sales = $14040/35120 = 40\%$.

Question : 11

The following is the Profit & Loss Account of Pygmy Industries Ltd., a single product company :
(Rs. in lakhs)

Income :	3802.42
Gross Sales	
Other income	2.01
Dividend received	20.16
Interest received	1.37
Profit on sale of investments	4.82
Sale of scrap	28.41
Total Income	3830.83
Expenses :	
Materials consumed	2648.94
Increase in stock	(31.79)
Stores and spares consumed	80.61
Power and fuel	98.78
Repairs and maintenance	12.52
Labour, processing and machine hire charges	11.29
Total employee costs	44.11*
Samples, sales promotion and advertisement	3.72
Brokerage, discount and commission	32.85
Warehousing and distribution expenses	38.84
Additional Sales Tax/Turnover Tax (not recoverable)	17.20
Provision for bad debts	5.80
Insurance, rates & taxes and other administrative expenses	58.37
Central Excise Duty paid	358.28

Interest and finance charges	121.60
Depreciation	156.51
Loss on sale of assets	<u>2.80</u>
	3660.43

* This includes employee costs of selling and distribution Rs. 2.32 lakh

Closing Stock as on 31.3.2002 :

	(Rs. lakhs)
Raw materials	37.85
Stores of spares	72.01
Works-in-process	17.77
Finished goods	<u>102.34</u>

Work out the following ratios as indicated in the Annexure to the Cost Audit Report :

- Interest as a percentage of Sales.
- Selling and distribution costs as a percentage of sales
- Finished goods stock in terms of number of months cash cost of sales.

Answer

(a)	Rs.(lakhs)		Rs.(lakhs)
Sales	3802.42	Interest & Fin. charges	121.60
Less: BD	<u>358.28</u>	Less: Interest received	<u>20.16</u>
Net sales	3444.14	Net interest	101.44

Interest as a % on sales = $101.44/3444.14 = 2.95\%$

- Selling and Distribution Expenses.

	Rs. (lakhs)
Employee costs	2.32
Samples, sales promotion and advt.	3.72
Brokerage etc.	32.85
Warehousing & DISTR	38.84
Addl. S.T.	17.20
Prov. for bad debts	<u>5.80</u>
	100.73

Selling & Distribution Expenses as a % on sales $100.73/3444.14 = 2.92\%$.

- Cost of Sales

	Rs.(lakhs)
Total expenses	3660.43
Less : Excise duty	<u>358.28</u>
Interest received	20.16
Loss on sale of F.A.	<u>2.80</u>
Sale of scrap	<u>4.87</u>
	386.11

Cost of sales 3274.32

	Rs. (lakhs)
Cost of sales	3274.32
Less : Depreciation	<u>156.51</u>
Cash cost of sales for the year	3117.81

Question : 12

A single product industry procures its principal raw material from four different sources, taking into account the quality differences in the supplies from each source, the company has adopted the following norms of yield in budgeting :

Material from source A	95 % yield
Material from source B	90 % yield
Material from source C	85 % yield
Material from source D	80 % yield

During the year 2002-03 the company used the following mix of raw materials from the four sources :

A : 50 %, B : 10 %, C : 15 %, D : 25 %

The total input weight of raw material was 42,500 tonnes and the output obtained was 37,400 tonnes.

How will you present the above data in the Cost Audit Reporting comparing the actual consumption with the norms ?

Answer

Weighted Average norm of consumption:

Source	% in mix	Std. yield %	Weighted yield
A	50	95	47.50
B	10	90	9.00
C	15	85	12.75
D	25	80	<u>20.00</u>
	<u>100</u>		89.25

For every tonne of output for the actual mix the normal usage was $100 / 89.25 = 1.1204$ (T)

Actual consumption per tonne of output is $42500/37400 = 1.1364$ T

This data will be reported in Para 5 (B) by Cost Auditor as follows :

Particulars	Unit	Standard Usage	Current Year	Actual Usage
				Last Year Year Before
Material	Tonne	1.1204	1.1365	To be obtained and given

Question : 13

A cluster of textile dyeing companies located in the outskirts of a city have been charged with the offence of polluting the ground water. The companies were asked to put up effluent treatment plants and simultaneously arrange for supply of potable water to about 1000 residents affected. The dyeing units jointly formed a cooperative society to put up a common effluent treatment plant and also for supplying drinking water. The company's Cost Auditor takes the stand that the company's investment in the cooperative society is an investment outside the business. Is this stand correct ? If not, how will the investment and the running expenses of the society be treated ?

Answer

Effluent treatment cost is one of the normal cost of production. Forming a corporate society is only one of the alternatives available to take care of this function. Running effluent treatment activity through a society has two costs - one the capital expenditure in plant (CETO) and the other is the cost of operation which again has two components - one effluent treatment cost and the other is cost of supplying water to the affected people. The capital cost is by subscribing to the share capital of the society. The ETP operation cost and cost of water supply will be recurring revenue. The share capital investment is very much a part of the company's capital employed - (to the extent of the value of the shares subscribed) and the operating costs payable to the cooperative society based on the quantum of effluent treated is a cost. The investment cannot be considered as investment outside the company's business.

Question 14

- (a) Following data is available for a company relating to the cost of production of a product subjected to Cost Audit.

Prepare the Export Profitability Statement to be included in the Annexure to the Cost Production 10,000 Units

		Rs.
Sales (Local)	9,000 units.	2,02,500
Sales (Export)	1,000 units.	20,000
Material consumed	20 Tonnes @ Rs. 5 Kg.	1,00,000
Imported Component @ Rs. 3/unit		30,000
Direct Labour		10,000
Factory Overhead		15,000
Administrative Overhead		5,000
Freight & Packing (Local Sales)		4,500
Packing for Export		2,000
Handling a Port		500
Opening Work-in-progress		10,000
Closing Work-in-progress		5,000

Additional Information:

- (i) Export incentive of 10% on F.O.B. is receivables,
(ii) Draw Back-on-Duty paid on Raw Materials and Components available on export is Rs. 2,500.
- (b)
- (i) Why is Cost Audit Report not made public? Whether the member of Parliament have access to the Cost Audit Report?
- (ii) A company, manufacturing Cotton Textile, wrote off in the same year, the expenditure in replacement of Copper Rollers used for Printing Fabrics and Stainless steel frames used for Dying Yarn whose life are more than one year. State whether the Cost Auditor can qualify the report for these?
- (iii) A person has been appointed as Cost Auditor for twenty products manufactured in seven companies. He is again proposed for appointment as a Cost Auditor for three more products manufactured by two other companies. Will this appointment be 'in order'?
- (iv) A person is doing Internal Audit on one of the factories manufacturing 'Cement' in a company. He was proposed for appointment as Cost Auditor in another factory of the same company manufacturing cement for the same period. Is this appointment as Cost Auditor 'in order'?

Answer

Taking into consideration, the requirements under provisions under Cost Audit (Report) Rules, like showing separately Local Sales and Export Sales, with details like, Quality, Net Realization Price/Unit, Packing Charges etc., Profitability Statements have been prepared as below:

Statement of Cost of Production

Production: 10,000 Units.

	Total Rs.	Per unit Rs.
Direct Materials (20,000 Kgs @ Rs. 5 per Kg)	1,00,000	10.00
Imported components (10,000 units @Rs.3/unit)	30,000	3.00
Direct Labour	10,000	1.00
Prime Cost:	1,40,000	14.00
Factory overhead	15,000	1.50
Opening W.I.P.	10,000	1.00
	1,65,000	16.50
Less: Closing W.I.P.	50,000	0.50
Works Cost:	1,60,000	16.00
Administrative Overhead	5,000	0.50
Cost of production	1,65,000	16.50

Statement of Cost and Profit of Export Sales

Export Sales: 1,000 units

	Total per unit (Rs.)	unit (Rs.)
Cost of Production	16,500	16.50
Export Packing	2,000	2.00
Handling at port	500	0.50
(A) Cost of Sales 19,000 19.00		
Export Sales realization	20,000	20.00
Export incentive @ 10% of F.O.B.	2,000	2.00
Duty Drawback on components	2,500	2.50
(B) Total realization	24,500	24.50
Profit on Export (B)-(A)	5,500	5.50

Question : 15

The following figures are extracted from the Annual Report of Eastern Industries Ltd.

	31.3.2006 (Rs. in lakhs)	31.3.2005 (Rs. in lakhs)
SOURCES: Share Capital	2,400	2,400
Reserves and Surplus:		
General Reserves	21,000	22,200
Debenture Redemption Reserve	11,300	5,700
Revaluation Reserve	6,200	7,400
Profit & Loss Account	200	2,200
Secured Loans:	38,700	37,500
Debentures	48,000	22,000
Term Loans	5,300	14,100
Cash Credit	7,800	7,150
Unsecured Loans:	61,100	43,250
Fixed Deposits	2,000	2,250
Interest Free Sales Tax Loan	9,000	7,250
TOTAL	1,13,200	92,650
APPLICATION OF FUNDS:		
Net Block	86,650	72,350
Capital Work-in-Progress	3,250	1,800
Investments	5,050	5,600
Current Assets, Loans & Advances	24,900	21,850
Current Liabilities & Provisions	11,800	9,050
Miscellaneous Expenditure	150	100
TOTAL	1,13,200	92,650

Notes:

1. Debentures are redeemable as follows:-

Rs.120 Crores at the end of the 5th, 6th and 7th years in equal installments. The earliest date of redemption is 30.09.2006.

Rs.100 Crores in five semi-annual installments from 30.06.2006.

Rs.260 Crores in five semi-annual installments of Rs.40 Crores and one final installment of Rs.60 Crores commencing from 30.06.2010.

2. Term Loans and Fixed Deposits payable before 31.3.2007: Rs.1150 lakhs (previous year: Rs.4050 lakhs).

3. Rs.3000 lakhs of Interest Free Sales Tax Loan is repayable on 30.11.2006.

4. Net Block includes Value of Brand Equity (brands purchased) Rs.1250 lakhs (previous year Rs.1450 lakhs)

You are required to Calculate:

- a) Capital employed as defined in the Annexure to the Cost Audit Report.
b) Debt-equity Ratio as on 31.03.2006.

Answer to question (a)

Capital Employed:

	31.03.2006 (Rs. in lakh)	31.03.2005 (Rs. in lakh)
SOURCES:		
Net Block	86,550	72,350
Less: Revaluation Reserve	6,200	7,400
Less: Intangible Assets (Brand Equity)	1,250	1,450
Net Current Assets	13,100	12,800
Less: Debt due within 12 months		
Debentures	8,000	-
Term Loans/Fixed Deposits	1,150	4,050
Interest Free Sales Tax Loans	3,000	950
Capital Employed	80,150	72,250

$$\text{Average Capital Employed} = \frac{80,150 + 72,250}{2} = 76,200$$

Answer to question (b)

Debt-Equity Ratio:

Debt:	Debentures	48,000	
	Term Loans	6,300	
	Fixed Deposits	2,000	
	Interest Free Sale Tax Loan	9,000	
	Less: Due within 12 months	12,150	52,150
Equity:	Share Capital	2,400	
	Reserves excluding Revaluation Reserve	32,500	34,900

$$\text{Debt-Equity Ratio} = 52150 : 34900 = 1.49 : 1$$

Question 16

A company manufacturing a single product has an installed capacity of 2.5 lakhs M.T. During the year 2003-04 capacity utilization was 100% and the cost details were as under:

Unit variable costs were Rs.915 per M.T. as detailed below:

	Rs./T
Raw materials	600
Labour	150
Power (Variable)	65
Consumable	20
Packing	80
	915

Fixed costs for the year were:

	Rs.lakhs
Overheads	120
Depreciation	100
Power (MD Charges)	3.375

During the year 2004-05 the production was only 125000 MT due to lower demand in the market. During this year the variable costs escalated by 7% but there was no change in the total Fixed Costs.

Calculate the Total Cost per MT of the Product in 2004-05. What will be the abnormal costs and how would this be reported in the Cost Audit Report?

Answer

Statement for total Cost per MT for 2003-04 :

	Rs./MT	
Raw Material	600	
Labour	150	
Power	65	
Consumable	20	
Packing	80	
Variable Cost/MT	915	
Fixed Over Head	48	120/2.5
Depreciation	40	100/2.5
Power	1.35	3.375/2.5
	1004.35	

Total Cost per MT for 2004-05

Production MT	125,000	
	Rs./MT	
Raw Material	642	escalated 7%
Labour	160.5	"
Power	69.55	"
Consumables	21.4	"
Packing	85.6	"
Variable Cost	979.05	(A)

Fixed Over Head	Rs. Lakhs
Depreciation	120
Power (MD Charges)	100
	3.375

223.375

- 50% of Total Fixed Costs $111.6875/1.25$ lakhs = 89.35 Fixed cost (B)
(i) Total Cost per MT (A)+(B) = 1068.4
(ii) 50% of the Fixed Costs will be considered as Abnormal.
This will be Rs. 111.6875 lakhs. This will be reported under Para 17.

Alternative Answer:

Calculation of total cost per MT:

Production	250,000		125,000	
Particulars	Per MT	Total Amount	Per MT	Total Amount
	Rs.	Rs.	Rs.	Rs.
Raw Materials	600	15,00,00,000	642.00	8,02,50,000
Labour	150	3,75,00,000	160.50	2,00,62,500
Power (Variable)	65	1,62,50,000	69.55	86,93,750
Consumables	20	50,00,000	21.40	26,75,000
Packing	80	2,00,00,000	85.60	1,07,00,000
	915	22,87,50,000	979.50	12,23,81,250
Fixed Cost:				
Overheads	48	1,20,00,000	48.00	60,00,000
Depreciation	40	1,00,00,000	40.00	50,00,000
Power(MD charges)	1.35	3,37,500	1.35	1,68,750

Fixed Expenses:

Overheads	1,20,00,000
Depreciation	1,00,00,000
Power(MD Charges)	3,37,500

Total 2,23,37,500

50% of Fixed expenses = 111,68,750 will be shown /considered as abnormal. This will be reported in Para 17.

Question 17

From the following data extracted from the Cost Accounting Records of a ministeel plant, prepare a report to the management analysing the reasons for the variance in profit from the Budget. (Ignore increase/decrease in opening and closing stocks):

	Budget		Actual	
	Quantity	Value Rs. Lakhs	Quantity	Value Rs. Lakhs
Production/Sales	33000 T		30500 T	
Sale Value		5280		4897
Raw Material Consumed	37500 T	3000	35880 T	3050
Power Consumed	198 (Lakhs KWH)	841	195.2 (Lakhs KWH)	869
Other Variable Costs		949		686
Contribution		490		92
Fixed Expenses		300		260
Profit/Loss before Taxes		190		188

Answer

Variances Worksheet:

- Sale Price:** Budgeted price/unit=5280 lakhs/33000=Rs.16000
Actual= 4897 lakhs/30500=Rs.16400
Sale price variance Rs.183 lakhs (A)
- Raw Material Price:** Budgeted price=3000 lakhs/37500=Rs.8000
Actual price=3050 lakhs/35880=Rs.8500
Raw material price variance=Rs.179 lakhs (A)
- Raw Material Yield:** 33000/37500=88% Budget
30500/35882=85% Actual
Yield variance (30500/.88) - 30500/.85) x 8000=Rs.97 lakhs (A)
- Power Rate:** Budgeted Rate=841/198=4.25/KWH
Actual Rate=869/195.2=4.45/KWH
Power rate variance = 195.2 X .2=Rs.39 lakhs (Adv)
- Power Consumption:** Budgeted price=198 lakhs/33000=600 KWH/tonne
Actual price=195.2 lakhs/30500=640 KWH/tonne
Power usage variance=30500 X 40 X 4.45=Rs.54 lakhs (Adv)
- Other Variable Cost:** Budgeted price=94900000/33000=Rs.2875/tonne
Actual price=68600000/30500=Rs.2250/tonne
Other variable cost variance=30500 x 625=Rs.191 lakhs (Fav)
- Volume Budgeted Contribution:** 490 lakhs/33000=Rs.1485
Volume variance : 2500 tonne x 1485= Rs.37 lakhs (A)
- Fixed Overhead Variance** = 300-260=40 lakhs (F)

Reason for drop in profit

	Rs.in lakhs	
	Favourable	Adverse
1. Contribution Fall because of Production		37
2. Sale price		183
3. Raw Material Price		179
4. Raw Material Yield		97
5. Power Rate Variance		39
6. Power Consumption		54
7. Other Variable Costs Saving	191	
8. Fixed Over Head Variances	40	
	231	589
Net drop in profit		(358)

Question 18

Alpha Pharma Ltd. uses two ingredients P and Q for production of a formulation X in the ratio of 2:3

P is procured entirely from indigenous sources, whereas 50% of Q is imported. The ratio of imports and indigenous sources is maintained throughout the year. The input/output ratio of raw materials to finished goods is 1:0.9. During the year 2005 - 06, the company produced 270 tonnes of finished product of X and the consumption of raw materials was as follows:

P - 1,21,500 kgs @ Rs.360 per kg

Q - 1,78,400 kgs at an average cost of Rs.220 per kg

During the year, the company imported 90,000 kgs of Q and the break up of landed cost was as follows:

CIF Value	Rs. 1,88,43,000
Import Duty	Rs. 18,63,600
Clearing & Forwarding Charges	Rs. 10,45,000
Landed Cost	Rs. 2,16,51,600

How will you present the above information in the manner prescribed in Paras 5A, 5B and 6 of the Annexures to the Cost Audit Report?

Answer

Total Production	270 tonnes	=	2,70,000 kgs
Theoretical consumption of Raw Materials in the ratio of 1:0.9 = 2,70,000/0.9		=	3,00,000 kgs
Composed of : Raw Materials P = 2/5 th		=	1,20,000 kgs
Raw Materials Q = 3/5 th		=	1,80,000 kgs
Actual consumption : P		=	1,21,500 kgs
Q		=	1,78,400 kgs
Norms of consumptions : P = 1,20,000/2,70,000		=	0.4444
Q = 1,80,000/2,70,000		=	0.6667
Actual consumption rate P = 1,21,500/2,70,000		=	0.45
Q = 1,78,400/2,70,000		=	0.6607

Imported materials:

Actual quantity of imported material Q consumed	=	89,200 kgs
Total value of Q consumed = 1,78,400 kgs x Rs.220 per kg	=	Rs.3,92,48,000
Less: Value of imported material consumed = 89,200 kgs Rs.2,16,51,600/90,000	=	Rs.2,13,60,030
Value of indigenous material Q consumed (89,200 kgs)	=	Rs.1,78,87,970
Cost per kg of indigenous material Q	=	Rs.200.53 or 200.54
Cost per kg of imported material Q = 2,16,51,600/90,000	=	Rs.239.46

The above data will be presented in the Annexure to Cost Audit Report as follows:

Para 5(A)

MAJOR INPUT MATERIALS CONSUMED

Particulars	Current Year			Two Previous Years		
	Qty. (kg)	Rate (Rs.)	Amount (Rs. in lakh)	Qty. (kg)	Rate (Rs.)	Amount (Rs. in lakh)
1. Indigenous						
(a) P	1,21,500	360.00	437.40	-	-	-
(b) Q	89,200	200.54	178.88	-	-	-
2. Self manufactured:	-	-	-	-	-	-
3. Imported:						
(a) Q	89,200	239.46	213.60	-	-	-
4. Total	2,99,900		629.88	-	-	-

Para 5(B)

STANDARD/ACTUAL CONSUMPTION OF INPUT MATERIALS PER UNIT:

Particulars	Unit	Standard	Actual	
			Current Year	Two Previous Year
1. P	Kg	0.4444	0.4500	-
2. Q	Kg	0.6667	0.6607	-

Para 6

BREAK UP OF COST OF INPUT MATERIALS IMPORTED DURING THE YEAR:

Particulars	Current Year (Rs. in lakhs)	Two Previous Year (Rs. in lakhs)
1. CIF price	188.43	-
2. Custom Duty	18.64	-
3. Clearing and Forwarding	10.45	-
4. Total Landed Cost	216.52	-

Question 19

From the following figures extracted from the financial and cost accounting records, you are required to compute:

- Value added;
- Ratio of Operating Profit to Net Sales and
- Ratio of Operating Profit to Value added.

	Rs. in lakhs
Net Sales excluding Excise Duty	21,000
Increase in Stock of finished goods	250
Expenses:	
Raw Materials consumed	2,600
Packing materials consumed	1,200
Stores and Spares consumed	560
Power and Fuel	4,600
Repairs and Maintenances	200
Insurance	120
Direct Salaries and Wages	480
Depreciation	885
Interest paid	1,398
Factory Overheads:	
Salaries and Wages	240
Others	250
Selling and Distribution Overheads:	
Salaries and Wages	120
Additional Sales Tax	457
Others	1,700
Administration Overheads:	
Salaries and Wages	120
Others	80

Answer

Computation of Value added		Rs. in lakhs
Net Sales + Increase in stock of Finished Goods		21,250
Less:		
<u>Cost of bought out goods and services:</u>	Rs. in lakhs	
Raw Materials	2,800	
Packing Materials	1,200	
Stores and Spares	550	
Power and Fuel	4,600	
Repairs and Maintenance	200	
Insurance	120	
Other Factory Overhead	250	
Other Selling and Distribution Overhead	1,700	
Other Administration Overhead	80	
Value Added		11,310
Operating Profit Profit before Tax		8,240
Interest		1,388
		7,638

(i) Ratio of operating profit to net sales = $\frac{7638}{21000} \times 100 = 36.37\%$

(ii) Ratio of operating profit to value added = $\frac{7638}{9940} \times 100 = 76.84\%$

Note:

As per C.A.R.R. operating profit =

"Profit" means operating profit after providing for depreciation and all other expenses except interest on borrowings including debentures but before providing for taxes on income.

"Value Addition" means the difference between the net output value (Net Sales adjusted for Work-in-Progress and Finished Goods stock) and cost of bought out materials and services for the product under reference.

Question 20

Based on the following information, in respect of a concern manufacturing cement, you are required to offer your comments, as a Cost Auditor on

- the performance of the concern,
- your suggestions for improvement:

Given: Rated Capacity 80 MT/Hr.

	2003	2002
(1) Breakdown(Hrs)	2164	1009
(2) Planned maintenance (Hrs)	246	420
(3) Power restrictions(Hrs)	1230	1472
(4) Shortfall (there are no orders) (Hrs)	787	673
(5) Want of wagons(Hrs)	492	631
(6) Total stoppage(Hrs)	4919	4205
(7) Total running (Hrs)	3865	4555
(8) Total available Hours	8784	8760
Production during the year (MT)	2,47,360	3,27,960
Hourly Rate of Production (MT)	64	72
Capacity Utilization (%)	61.84	81.99
Annual Installed Capacity	4,00,000 MT	

Answer

- Performance of the concern :
Rated Capacity = 80 MT/Hr.
Rated Capacity achieved in 2002 = $(72/80) \times 100 = 90\%$
Rated capacity achieved in 2003 = $(64/80) \times 100 = 80\%$
Thus the capacity achievement as a% of the
Rated capacity has come down from 90% to 80% in 2003.
- Further the capacity utilization has gone down to 61.84% in 2003 as against the figure of 81.99% in 2002 i.e., a reduction by 20.15%
- From the data available, the following observations are noted:
 - Breakdown hours have gone up from 1009 Hrs. to 2164 Hrs.
 - Planned maintenance Hrs. has reduced from 420 Hrs. to 246 Hrs.
 - Shortfall Hrs. due to No. of orders has increased from 673 Hrs. to 787 Hrs.
 - The total stoppage Hrs. has increased from 4205 Hrs. to 4919 Hrs.
 - The total running Hrs. has come down to 4555 Hrs. to 3865 Hrs.
 - The production has come down from 3,27,960 MT to 2,47,360 MT.

From the above findings, it is ascertained that the under utilization of capacity to the extent of 20% can be attributed mainly to the
- increased total stoppage Hrs. of 4919 in 2003 as against the figure of 4205 Hrs. in 2002.
- the net increase of 714 Hrs. (i.e. 4919 - 4205 Hrs.) is again due the increase of break down Hours by 1155 Hrs. (i.e. 2164 - 1009 Hrs.) in the year 2003 over the year 2002.
Further from the given data, it is noted that: -

	2003	2002
Breakdown (Hrs.)	2164	1009
Total stoppage (Hrs.)	4919	4205

Percentage of breakdown Hrs.

as % of total stoppage Hrs = $\frac{(2164/4919) \times 100}{= 44\%}$ $\frac{(1009/4205) \times 100}{= 24\%}$

Thus the performance has deteriorated steeply in the year 2003 as compared to the performance in the year 2002.

Suggestions:

The management is advised to:

- Augment its planned maintenance with a view to reducing breakdown hours.
- Install Power Generation sets with a view to compensate the hours lost due to Power restriction.

Question 21

From the following figures extracted from the Cost Accounting Records of a company, calculate the Value Addition and its Ratio as a percentage of sales, and also show how the value added is distributed to the different claimant thereto: