



INTER CA – MAY 2018

COSTING

Topic: Operating Costing, Budgetary Control, Integral and Non – Integral, Process Costing, Materials, Marginal Costing.

Test Code – M31

Branch: MULTIPLE

Date: 21.01.2018

(50 Marks)

Note: All questions are compulsory.

Question 1 (8 marks)

(a) Working Notes :

1. Total Kilometers to be run during the year 2016-17

= 50km x 2 sides x 3trips x 25 days x 12 month x 6 buses = 5,40,000 Kilometers

= 5,40,000km. x 48 passengers x 75% = 1,94,40,000 Passenger –km.

Operating Cost Sheet for the year 2016-17

Particulars	Total Cost(Rs.)
A. Fixed Charges (1/2 mark for each cost)	
Garage rent (Rs. 6,000 x 12 months)	72,000
Salary of drivers (Rs.4,000 x 6 drivers x 12 months)	2,88,000
Wages of Conductors (Rs. 1,600 x 6 conductor x 12 months)	1,15,200
Wages of Clearance (Rs.1,000 x 6 clearance x 12 months)	72,000
Manager's salary (Rs. 10,000 x 12 months)	1,20,000
Road Tax ,Permit fee etc. (Rs.6,000 x 4 quarters)	24,000
Office expenses (Rs. 2,500 x 12months)	30,000
Depreciation (Rs.7,50,000 x 6 buses x 20 %)	9,00,000
Insurance (Rs. 7,50,000 x 6 buses x 4%)	1,80,000
Total (A)	18,01,200
B. Variable Charges: (1/2 mark for each cost)	
Repairs and Maintenance (Rs. 24,000 x 6 buses)	1,44,000
Diesel {(5,40,000km. ÷ 6 km.)x Rs.66}	59,40,000
Engine oils &lubricants {(Rs. 2000 ÷ 1000 km.) x 5,40,000km}	10,80,000
Total (B)	71,64,000
Total Cost (A+B)	89,65,200
Add 33 ¹ / ₃ %Profit on takings or 50% on cost (1/2 mark)	44,82,600
C. Total Takings (Total bus fare collection)	1,34,47,800
D. Total Passenger-km.(Working Note 2) (1 ½ mark)	1,94,40,000
E. Bus fare to be charged from each passenger per km. (C ÷ D)	0.6918

Question 2 (8 Marks)

Working Note

Process I (1 mark)	Process II(1 mark)
1.LOSS ANALYSIS	1.LOSS ANALYSIS
Process Loss= Input Quantity-Output Quantity	Process Loss= Input Quantity-Output Quantity

= 80,000-70,000=10,000			= 1,00,000-96,000=4,000		
Normal Loss 10% of 80,000=8,000		Abnormal Loss (bal.fig) 2,000	Normal Loss 5% of 1,00,000=5,000		Abnormal Loss (bal.fig) 1,000
2.COST ANALYSIS			2.COST ANALYSIS		
Particulars	Cost	Quantity	Particulars	Cost	Quantity
Gross	4,93,230	80,000	Gross	5,31,463	1,00,000
(-) Normal Loss	12,000	8,000	(-) Normal Loss	5,000	5,000
Net	4,81,230	72,000	Net	5,26,463	95,000
Effective Cost p.u.=Rs. $\frac{4,81,230}{72,000}$ = Rs. 6.68375 p.u			Effective Cost p.u.=Rs. $\frac{5,26,463}{95,000}$ = Rs. 5.5417 p.u		

1. Process I Account(1 mark)

Particulars	Quantity	Rs.	Particulars	Quantity	Rs.
To Basic Raw Material A	80,000	4,80,000	By Process II transfer		
To Processing Cost (63*30)		1,890	(Rs.6.68375 pu)	70,000	4,67,863
To Direct Labour			By Normal Loss A/c		
(63*80 ph)		5,040	(at Rs. 1.50 pu)	8,000	12,000
To General Overheads			By Abnormal Loss A/c		
(125% of Lab)		6,300	(Rs. 6.68375 pu)	2,000	13,367
TOTAL	80,000	4,93,230	TOTAL	80,000	4,93,230

2. Process II Account (1 mark)

Particulars	Quantity	Rs.	Particulars	Quantity	Rs.
To Process I Transfer	70,000	4,67,863	By FG Control (at Rs.		
To Direct Material (Mati B)	30,000	60,000	5,5417 pu)	96,000	5,32,003
To Processing Cost (45*20)	-	900	(See WN For rate		
To Direct Labour (45*40)	-	1,800	Computation)		
To General Overheads			By Normal Loss	5,000	5,000
(50% of Labour)	-	900			
To Abnormal Gain					
(Rs.5,5417 pu)	1,000	5,540			
TOTAL	1,01,000	5,37,003	TOTAL	1,01,000	5,37,003

3. NORMAL LOSS A/C (1 mark)

Particulars	Quantity	Rs.	Particulars	Quantity	Rs.
To Process I A/c	8,000	12,000	By Bank (Scrap Realisation	8,000	12,000
			at Rs.1.50pu)		
Sub- Total	8,000	12,000	Sub- Total	8,000	12,000
To Process II A/c	5,000	5,000	By Bank (Scrap Realisation	4,000	4,000
			at Rs.1.50pu)		
			By Abnormal Gain- Adj.		
			Transfer	1,000	1,000
Sub- Total	5,000	5,000	Sub- Total	5,000	5,000

NOTE:

- Normal Loss is separately Sub-totalled in respect of each Process.
- In Process II, Only Process loss of 4,000 units will be scrapped. The balance 1000 units constitutes Abnormal Gain, i.e unexpected good production, which is not scrapped. Hence, this amount is transferred to Abnormal Gain Account.

4. Abnormal Loss A/C (1 mark)

Particulars	Quantity	Rs.	Particulars	Quantity	Rs.
To Process I A/c	2,000	13,367	By Bank (Scrap Realisation at Rs.1.50pu)	2,000	3,000
			By Costing P&L A/c (bal. fig)	-	10,367
TOTAL	2,000	13,367	TOTAL	2,000	13,367

5. Abnormal Gain A/C (1 mark)

Particulars	Quantity	Rs.	Particulars	Quantity	Rs.
To Normal loss A/c (Tfr)	1,000	1,000	By Process II A/c	1,000	5,540
To Costing P&L A/c (bal. fig)	-	4,540			
TOTAL	1,000	5,540	TOTAL	1,000	5,540

6. Effect of inquiry for further processing and sales of Process I Waste (1 mark)

(a) Net Realisable Value of Processed Waste of Process I = Rs.3.20-Rs.0.90-Rs.0.90	Rs.1.90 Per kg
(b) Amount realizable by way of sale as scrap of Process I (given)	Rs.1.50 Per kg
(c) Net Additional Income by way of accepting the proposal for specially prepared Waste Material(a-b)	Rs.0.40 Per kg
(d) Overall Additional Profit to company from 1,700 kg of specially prepared waste Material at Rs.0.40/kg	Rs 680

Note : (a) Cost of Production of Waste, (b) whether such specially prepared waste is out of Normal or Abnormal Loss, etc are not relevant for decision Making.

Question 3 (8 Marks)

(a) **Production Budget (in units)** (2 marks)

	Product- K (units)	Product- H (units)
Expected sales	8,000	4,200
Add: Closing stock	1,000	2,100
Less: Opening stock	(800)	(1,600)
Units to be produced	8,200	4,700

(b) **Material Purchase Budget** (3 marks)

	Material-X (kg.)	Material-Y (kg.)	Material-Z (ltr.)
Materials required:			
- Product-K	98,400 (8,200 units × 12 kg.)	1,23,000 (8,200 units × 15 kg.)	65,600 (8,200 units × 8 ltr.)
- Product- H	70,500 (4,700 units × 15 kg.)	28,200 (4,700 units × 6 kg.)	65,800 (4,700 units × 14ltr.)
Total	1,68,900	1,51,200	1,31,400

Add: Closing stock	30,000	18,000	7,500
Less: Opening stock	(25,000)	(30,000)	(14,000)
Quantity to be purchased	1,73,900	1,39,200	1,24,900
Rate	₹15 per kg.	₹16 per kg.	₹5 per ltr.
Purchase cost	₹ 26,08,500	₹ 22,27,200	₹ 6,24,500

(c) **Direct Labour Budget** (3 marks)

	Unskilled (hours)	Skilled (hours)
For Product K	98,400 (8,200 units × 12 hours)	65,600 (8,200 units × 8 hours)
For Product H	47,000 (4,700 units × 10 hours)	23,500 (4,700 units × 5 hours)
Labour hours required	1,45,400	89,100
Rate	₹ 40 per hour	₹ 75 per hour
Wages to be paid	₹ 58,16,000	₹ 66,82,500

Question 4 (6 Marks)

a.

Particulars	2015 (₹)	2016 (₹)
Fixed Cost	72,00,000 (₹ 60 × 1,20,000)	79,20,000 (110% of ₹ 72,00,000)

Variable Cost	180	225 (125% of ` 180)
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Calculation of Break-even Point (in units):

Since, shelf life of the product is one year only, hence, opening stock is to be sold first.

	(`)
Total Contribution required to recover total fixed cost in 2016 and to reach break-even volume.	79,20,000
Less: Contribution from opening stock {20,000 units × (` 300 – `180)}	24,00,000
Balance Contribution to be recovered	55,20,000

Units to be produced to get balance contribution

$$= \frac{` 55,20,000}{` 300 - ` 225} = 73,600 \text{ packets. (3 marks)}$$

Break-even volume in units for 2016(2 marks)

	Packets
From 2016 production	73,600
Add: Opening stock from 2015	20,000
	93,600

Question 5 (5 Marks)

Re-order quantity (ROQ)

Annual consumption of raw material (A) = 72,000 units

Cost of placing an order (O) = Rs.2,250

Carrying cost per unit per annum(c x i) = Rs. 300x 12%=Rs. 36

$$\begin{aligned} \text{Economic Order Quantity (EOQ)/ROQ} &= \sqrt{\frac{2AO}{c \times i}} \\ &= \sqrt{\frac{2 \times 72,000 \text{ units} \times \text{Rs. } 2,250}{\text{Rs. } 36}} = 3,000 \text{ units} \end{aligned}$$

(ii) Re-order level (ROL) = Maximum consumption x Maximum lead time

$$= 400 \text{ units} \times 20 \text{ days} = 8,000 \text{ units}$$

(iii) Minimum Level = ROL – (Average consumption x Average lead time)

$$= 8,000 \text{ units} - (300 \text{ units} \times 14 \text{ days})$$

$$= 3,800 \text{ units}$$

(iv) Maximum Level = ROL + ROQ – (Minimum consumption x Minimum lead time)

$$= 8,000\text{units} + 3,000\text{units} - (200\text{ units} \times 8\text{ days})$$

$$= 9,400\text{ units}$$

(v) Danger level

$$= \text{Average Consumption} \times \text{Emergency Delivery Time}$$

$$= 300\text{ units} \times 5\text{ days} = 1,500\text{ units}$$

Or,

$$= \text{Minimum Consumption} \times \text{emergency Delivery Time}$$

$$= 200\text{ units} \times 5\text{ days} = 1,000\text{ units.}$$

Question 6 (8 Marks)

Creditors A/c (2 mark)

Dr.		Cr.	
Particulars	()	Particulars	()
To Bank A/c	5,80,000	By Balance b/d	25,000
To Balance c/d	40,000	By Stores ledger control A/c (Materials purchased)(Bal. figure)	5,95,000
	6,20,000		6,20,000

Stores Ledger Control A/c (2 mark)

Dr.		Cr.	
Particulars	()	Particulars	()
To Balance b/d	40,000	By WIP control A/c (Balancing figure)	5,70,000
To Creditors A/c (Materials purchased)	5,95,000	By Balance c/d	65,000
	6,35,000		6,35,000

Work-in-Process Control A/c (3 marks)

Dr.		Cr.	
Particulars	()	Particulars	()
To Balance b/d	50,000	By Finished goods control A/c (Balancing 0	10,05,000
To Stores ledger control	5,70,000	By Balance c/d:	
To Wages control A/c (80% of ` 4,00,000)	3,20,000	- Material	35,000
		- Labour (` 50* × 400 hours)	20,000
		- Factory Oh (` 20** × 400 hours)	8,000
			0
			63,000
To Factory Overhead control A/c	1,28,000		
	10,68,000		10,68,000

$$* \text{ Direct Labour Hour Rate} = ` 3,20,000 / 6,400\text{ hours} = ` 50$$

$$** \text{ Factory Overhead Rate} = ` 20,80,000 / 1,04,000 = ` 20$$

Wages Control A/c (1 mark)

Dr.		Cr.	
Particulars	()	Particulars	()
To Bank A/c	4,00,000	By WIP control A/c (80% of ` 4,00,000)	3,20,000
		By Factory OH Control A/c (20% of ` 4,00,000)	80,000
	4,00,00		4,00,000

Factory Overhead Control A/c (2 mark)

Dr.		Cr.	
Particulars	()	Particulars	()
To Wages control A/c	80,000	By WIP control A/c (` 20 × 6,400 hours)	1,28,000
To Bank A/c (Indirect expenses)	60,000	By Balance c/d	12,000
	1,40,000		1,40,000

Question 7 (3 Marks)

(2 marks each)

At 2,000 units	
Production Overhead I: Fixed Cost	
(2,000 unit x 5)	10,000
Selling price – Material and labour (A)	10
Production Overhead II (Variable Overhead) (B)	2
Contribution per unit (A) – (B)	8
Break-even point = <u>Fixed cost</u>	
Contribution per unit	
(10000/8)=1250 units	
At 1,500 unit	
Production Overhead I: Fixed Cost	
(1500 unit x 6)	9,000
Selling price – Material and labour (A)	10
Production Overhead II (Variable Overhead) (B)	2
Contribution per unit (A) – (B)	8
Break-even point = <u>Fixed cost</u>	
Contribution per unit	
(9000/8)=1125 units	

Question 7 (4 Marks)

(i) We know that: Break Even Sales (BES) x P/V Ratio = Fixed Cost

$$\text{Break Even Sales (BES)} \times 40\% = \text{` } 6,00,000$$

$$\text{Break Even Sales (BES)} = \text{` } 15,00,000 \text{ (1 mark)}$$

(ii) Total Sales = Break Even Sales + Margin of Safety

$$S = \text{` } 15,00,000 + 0.355S$$

$$S - 0.355S = \text{` } 15,00,000$$

$$S = \text{` } 23,25,581 \text{ (1 mark)}$$

(iii) Contribution to Sales Ratio = 40%

Therefore, Variable cost to Sales Ratio = 60%

Variable cost = 60% of sales

or 60% of 23,25,581

$$\text{Variable cost} = 13,95,349 \text{ (1/2 mark)}$$

(iv) Current Profit = Sales – (Variable Cost + Fixed Cost)

$$\text{or } 23,25,581 - (13,95,349 + 6,00,000) = 3,30,232 \text{ (1/2 mark)}$$

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v) If sales value is increased by 7 ½ %

$$\text{New Sales value} = \text{` } 23,25,581 \times 1.075 = 25,00,000$$

New Margin of Safety = New Sales value – BES

$$\text{or } 25,00,000 - 15,00,000 = 10,00,000 \text{ (1 mark)}$$
