J.K. SHAH®
TEST SERIES
Evaluate Learn Succeed

SUGGESTED SOLUTION

IPCC NOVEMBER 2016 EXAM

COSTING

Test Code - I N J1 1 4 5

BRANCH - (MUMBAI) (Date :28.08.2016)

Head Office :Shraddha, 3rd Floor, Near Chinai College, Andheri (E), Mumbai – 69.
Tel : (022) 26836666

Answer-1 :

(i) Costing Profit and Loss Account for the year ended 31st March 2016:

Particulars	Amount (Rs.)	Particulars	Amount (Rs.)
Material consumed	14,16,000	Sales (30,000 units)	30,00,000
Direct wages	7,42,000		
Prime Cost	21,58,000		
Works overheads (20% of Prime cost)	4,31,600		
	25,89,600		
Less: Work in progress	(54,000)		
Factory cost	25,35,600		
Administration overheads (Rs.5 × 32,000 units)	1,60,000		
Cost of production of goodsproduced	26,95,600		
Less: Finished stock	(1,68,475)		
Cost of production of goods sold	25,27,125		
Selling and distributionoverheads (Rs.6 × 30,000 unit)	1,80,000		
Cost of sales	27,07,125		
Profit (balancing figure)	2,92,875		
	30,00,000		**30,00,000**

(4 Marks)

(ii) Statement reconciling the profit as per costing profit and loss account with the profitas per financial accounts

Particulars	Amount (Rs.)	Amount (Rs.)
Profit as per cost records		2,92,875
Add: Overheads over-absorbed:		
- Works overheads (Rs. 4,31,600 – Rs. 4,26,000)	5,600	
- Administration OH (Rs. 1,60,000 – Rs. 1,50,000)	10,000	
- Selling and Distribution (Rs. 1,80,000 – Rs. 1,65,000)	15,000	30,600
Less: Closing stock overvalued (Rs. 1,68,475 – Rs. 1,67,500)		(975)
Profit as per financial accounts		3,22,500

*It is assumed that the number of units Produced
= Number of units sold + Finished stock = 30,000 + 2,000 = 32,000 units.

(4 Marks)

Answer-2 :

(i) Amount of under-absorption of production overheads during the year 2013-14

		(Rs.)
Total production overheads actually incurred during the year 2013-14		6,00,000
Less: 'Written off' obsolete stores	Rs. 45,000	
Wages paid for strike period	Rs. 30,000	75,000
Net production overheads actually incurred: (A)		5,25,000
Production overheads absorbed by 48,000 machines hours @ Rs.10 per hour: (B)		4,80,000
Amount of under-absorption of production overheads: [(A)–(B)]		45,000

(2 Marks)

(ii) **Accounting treatment of under absorption of production overheads: I**t is given in thestatement of the question that 20,000 units were completely finished and 8,000 unitswere 50% complete, one third of the under-absorbed overheads were due to lack ofproduction planning and the rest were attributable to normal increase in costs.

		(Rs.)
1.	(33-1/3% of Rs.45,000) i.e. Rs.15,000 of under – absorbed overheads were due to lack of production planning. This being abnormal, should be debited to the Profit and Loss A/c	15,000
2	Balance (66-2/3% of Rs.45,000) i.e. Rs.30,000 of under – absorbed overheads should be distributed over work-in-progress, finished goods and cost of sales by using supplementary rate	30,000
	Total under-absorbed overheads	45,000

(2 Marks)

Apportionment of unabsorbed overheads of Rs.30,000 over, work-in-progress, finished goods and cost of sales.

	Equivalent Completed units	**(Rs.)**
Work-in-progress (4,000 units × Rs.1.25) (Refer to Working Note)	4,000	5,000
Finished goods (2,000 units × Rs.1.25)	2,000	2,500
Cost of sales (18,000 units × Rs.1.25)	18,000	22,500
	24,000	**30,000**

(2 Marks)

Accounting treatment:

Work-in-progress control A/c	Dr.	Rs.5,000	
Finished goods control A/c	Dr.	Rs.2,500	
Cost of Sales A/c	Dr.	Rs.22,500	
Profit & Loss A/c	Dr.	Rs.15,000	
To Overhead control A/c.			Rs. 45,000

Working Note:

Supplementary overhead absorption rate $= \frac{\text{Rs.30,000}}{\text{24,000 units}} =$ = Rs.1.25 per unit

(2 Marks)

Answer-3 :

Workings:

Monthly Production of X = 30,000 kgs.

Raw Material Required = $\frac{30,000}{3}$ x 5 = 50,000 kgs.

Material A = $\frac{50,000}{5}$ x 3 = 30,000 kg.

Material B = $\frac{50,000}{5}$ x 2 = 20,000 kg.

(2 Marks)

(i) Calculation of Economic Order Quantity (EOQ):

Material A $= \sqrt{\frac{2 \times \text{Annual Consumption} \times \text{Order cost}}{\text{Carrying cost per unit p.a.}}}$

$= \sqrt{\frac{2 \times (30,000 \text{ kg.} \times 12 \text{ months}) \times \text{Rs.}120}{(15\% \text{ of Rs.}15)}}$

$= \sqrt{\frac{8,64,00,000}{2.25}}$ = 6,196.77 kg. or 6,197 kg.

Material B $= \sqrt{\frac{2 \times (20,000 \text{ kg.} \times 12 \text{ months}) \times \text{Rs.}120}{(5\% \text{ of Rs.}22.44^*)}}$

$$= \sqrt{\frac{5,76,00,000}{1.122}} = 7,164.97 \text{ or } 7,165 \text{ kg.}$$

*Purchase price + 2% CST = Rs. 22 + 2% of Rs. 22 = Rs. 22.44

(3 Marks)

(ii) Calculation of Maximum Stock level: Since, the Material A is perishable in natureand it required to be used within 5 days, hence, the Maximum Stock Level shall belower of two:

(a) Stock equal to 5 days consumption

$$= \frac{30,000 \text{ kg.}}{25 \text{ days}} \text{ x 5 days} = 6,000 \text{ kg.}$$

(a) Maximum Stock Level for Material A:

Re-order Quantity + Re-order level – (Min consumption* × Min. lead time)

Where, Re-order Quantity = 8,000 kg.

Re-order level = Max. Consumption* × Max. Lead time

= 30,000/25 × 2 days = 2,400 kg.

Maximum stock Level = 8,000 kg. + 2,400 kg. - (30,000/25 × 1 day)

= 10,400 – 1,200 = 9,200 kg.

Stock required for 5 days consumption is lower than the maximum stock levelcalculated through the formula. Therefore, Maximum Stock Level will be 6,000 kg.

(*Since, production is processed evenly throughout the month hence materialconsumption will also be even.)

(2 Marks)

(iii) Calculation of Savings/ loss in Material A if purchase quantity equals to EOQ.

	Purchase Quantity = 8,000 kg.	**Purchase Quantity = EOQ i.e. 6,197 kg.**
Annual consumption	3,60,000 kg. (30,000 × 12 months)	3,60,000 kg. (30,000 × 12 months)
No. of orders [Note- (i)]	60 (3,60,000 ÷ 6,000)	60 (3,60,000 ÷ 6,000)
Ordering Cost (a)	Rs.7,200 (Rs.120 × 60)	Rs.7,200 (Rs.120 × 60)
Carrying Cost (b)[Note- (ii)]	Rs.8,100 (15% of Rs.13.50 ×4,000)	Rs.6,972 (15% of Rs.15 × 3,098.5)
Purchase Cost (c) (for good portion)	Rs.48,60,000 (Rs.13.50 × 3,60,000)	Rs.54,00,000 (Rs.15 × 3,60,000)
Loss due to obsolescence (d) [Note- (iii)]	Rs.16,20,000 [Rs.13.5 × (60 × 2,000)]	Rs.1,77,300 [Rs.15 × (60 × 197)]
Total Cost [(a) + (b) + (c) + (d)]	Rs. 64,95,300	Rs. 55,91,472

If purchase quantity equals to EOQ, there will be a saving of Rs.9,03,828 i.e. Rs. 64,95,300 - Rs. 55,91,472.

(3 Marks)

Notes:

(i) As after 5 days of purchase the Material A gets obsolete, the quantity inexcess of 5 days consumption i.e. 6,000 kg. are wasted. Hence, after 6,000 kg. afresh order needs to be given.

(ii) Carrying cost is incurred on average stock of Materials purchased.

(iii) the excess quantity of material gets obsolete and loss has to be incurred.

Answer-4 :

Working notes:

1.	Total available hours per week (60 workers × 40 hours)	2,400
2.	Total standard hours required to produce 19,200 units (19,200 units ÷ 6 units per hour)	3,200
3.	Total labour hours required after the introduction of bonus scheme to produce 19,200 units	2,400

(19,200 units ÷ 8 units per man hour)

4. Time saved in hours 800
(3,200 hours – 2,400 hours)

5. Wage rate per hour (Rs.) 10
(Rs.400 ÷ 40 hours)

(3 Marks)

6. Bonus:

(i) Halsey Scheme $= \frac{1}{2}$ x Time saved × Wage rate per hour

$= \frac{1}{2}$ × 800 hours × Rs. 10 = Rs. 4,000

(ii) Rowan Scheme $= \frac{\text{Time saved}}{\text{Time allowed}}$ × Time taken × Wage rate per hour

$= \frac{800 \text{ hours}}{3{,}200 \text{ hours}}$ × 2,400 hours × Rs. 10 = Rs. 6,000

(2 Marks)

Statement showing the effect on the company's weekly present profit by the introduction of Halsey & Rowan schemes

	Present (Rs.)	Halsey (Rs.)	Rowan (Rs.)
Sales revenue: (A) (19,200 units × Rs.11)	2,11,200	2,11,200	2,11,200
Direct material cost (19,200 units × Rs.8)	1,53,600	1,53,600	1,53,600
Direct wages (Refer to working notes 2 & 3)	32,000 (3,200 hrs. × Rs.10)	24,000 (2,400 hrs. × Rs.10)	24,000 (2,400 hrs. × Rs.10)
Overtime premium	4,000 (800 hrs.×Rs. 5)	-	-
Bonus (Refer to working notes 6 (i) & (ii))	-	4,000	6,000
Variable overheads	1,600 (3,200 hr.×Rs.0.50)	1,200 (2,400 hr.×Rs.0.50)	1,200 (2,400 hr.×Rs.0.50)
Fixed overheads	9,000	9,000	9,000
Total cost : (B)	2,00,200	1,91,800	1,93,800
Profit: {(A)- (B)}	11,000	19,400	17,400

(3 Marks)

Answer-5 :

Statement showing the cost per tonne-kilometre of carrying mineral from each mine

	Mine A (Rs.)	Mine B (Rs.)
Fixed cost per trip: (Refer to working note 1) (Driver's wages, depreciation, insurance and taxes)		
A: 1 hour 20 minutes @ Rs. 9 per hour	12.00	
B: 1 hour 30 minutes @ Rs. 9 per hour		13.50
Running and maintenance cost: (Fuel, oil, tyres, repairs and maintenance)		
A: 20 km. Rs. 1.20 per km.	24.00	
B: 30 km. Rs. 1.20 per km.		36.00
Total cost per trip	36.00	49.50
Cost per tonne – km	0.72	0.66
(Refer to working note 2)	$\left(\frac{\text{Rs.36}}{\text{50 tonne - km}}\right)$	$\left(\frac{\text{Rs.49.50}}{\text{75 tonne - km}}\right)$

(4 Marks)

Working notes

	Mine- A	Mine- B
(1) Total operated time taken per trip		
Running time to & fro	40 minutes $\left(20 \text{ km x } \frac{60 \text{ minutes}}{30 \text{ k.m.}}\right)$	60 minutes $\left(30 \text{ km. x } \frac{60 \text{ minutes}}{30 \text{ k.m.}}\right)$
Un-loading time	10 minutes	10 minutes
Loading time	30 minutes	20 minutes
Total operated time	80 minutes or 1 hour 20 minutes	90 minutes or 1 hour 30 minutes
(2). Effective tones – km.	50 (5 tonnes × 10 km.)	75 (5 tonnes × 15 km.)

(4 Marks)

Answer-6 :

Memorandum Reconciliation Accounts

Particulars	**Amount(Rs.)**	**Particulars**	**Amount(Rs.)**
To Net Loss as per Cost Accounts	48,700	By Administration overheads over recovered in Cost Accounts	65,000
To Factory overheads under absorbed in Cost Accounts	30,500	By Depreciation overcharged in Cost Accounts (Rs. 2,70,000 – Rs. 2,25,000)	45,000
To Provision for Income tax	52,400	By Transfer fees in Financial Accounts	10,200
To Obsolescence loss	20,700	By Notional Rent of own premises	54,000
To Overvaluation of closing stock in Cost Accounts**	9,500	By Overvaluation of Opening stock in Cost Accounts*	23,000
To Net Profit (as per FinancialAccounts)	35,400		
	1,97,200		**1,97,200**

* Overvaluation of Opening Stock as per Cost Accounts
= Value in Cost Accounts – Value in Financial Accounts
= Rs. 1,38,000 – Rs. 1,15,000 = Rs. 23,000.
** Overvaluation of Closing Stock as per Cost Accounts
= Value in Cost Accounts – Value in Financial Accounts
= Rs. 1,22,000 – Rs. 1,12,500 = Rs. 9,500.

(8 Marks)