SUGGESTED SOLUTION

IPCC MAY 2017EXAM

COSTING

Test Code - I M J 7 1 3 5

BRANCH - (MULTIPLE) (Date : 01.01.2017)

Answer-1 (a) :

1. Profit & Loss Account for the year ended 31st March as per Financial Records

Particulars	Rs.	Particulars	Rs.
To Direct Materials	5,00,000	By Sales (50,000 units)	10,00,000
To Direct Wages	2,50,000	By Interest and Dividends	15,000
To Actual Factory Expenses (Actuals)	1,50,000		
To Administrative Expenses (Actuals)	45,000		
To Selling and Distribution Expenses (Actuals)	30,000		
To Net Profit (balancing figure)	40,000		
Total	**10,15,000**	**Total**	**10,15,000**

(2 Marks)

2. Cost Sheet for the year ended 31st March

Particulars		Rs.
	Direct Materials	5,00,000
Add:	Direct Wages	2,50,000
	Prime Cost	**7,50,000**
Add:	Factory OH: Variable: = Rs. 60,000	
	Fixed :Rs. 90,000 x $\dfrac{50,000}{60,000}$ = Rs. 75,000	1,35,000
	Works Cost	**8,85,000**
Add:	Administrative Expenses : Fixed : Rs. 45,000 x $\dfrac{50,000}{60,000}$	37,500
	Cost of Production	**9,22,500**
Add:	Selling 8i Distribution OH: Variable : = Rs. 18,000	
	Fixed : Rs. 12,000 x $\dfrac{50,000}{60,000}$ = Rs. 10,000	28,000
	Cost of Sales	**9,50,500**
Add:	Profit (balancing figure)	49,500
Sales Revenue		**10,00,000**

(2 Marks)

Note: Fixed OH are absorbed to the extend of actual output produced / sold.

3. Memorandum Reconciliation Account

Particulars	Rs.	Particulars	Rs.
To Incomes not considered in Cost A/cs		By Profit as per Financial Records (WN 1)	40,000
- Interest and Dividends Received	15,000	By OH under absorbed in Cost Records	
		- POH (Rs. 1,50,000 - Rs. 1,35,000)	15,000
		- AOH (Rs. 45,000 - Rs. 37,500)	7,500

To Profit as per Cost Records (bal. fig)	49,500	- SOH (Rs. 30,000 - Rs. 28,000)	2,000
Total	**64,500**	Total	**64,500**

(2 Marks)

Answer-1 (b) :

1. **Effect of increase in efficiency on Overtime work**

(a)	Present Standard Hours required to produce 19,200 units (19,200 units ÷ 6 units per hour)	3,200 hours
(b) .	Normal Available Hours per week (60 employees x 40 hours)	2,400 hours
(c)	Present Overtime work (paid at normal + 50% rate) [a - b]	800 hours
(d)	Standard Hours required after introduction of Bonus Scheme (19,200 units ÷ 8 units per hour)	2,400 hours
(e)	Overtime work required after introduction of Bonus Scheme [d - b]	Nil
(f)	Hence, Time saved after introduction of Bonus Scheme	800 hours

(2 Marks)

2. **Computation of Labour Cost under Halsey & Rowan Schemes**

System	Basic	Bonus	Total
Halsey	Hours worked x Rate p.h. = 2,400 x 10 = Rs.24,000	50% x Time Saved x Rate p.h. = 50% x 800 x 10 = Rs.4,000	Rs.28,000
Rowan	Hours worked x Rate p.h. = 2,400 x 10 = Rs.24,000	$\dfrac{\text{Actual Hours}}{\text{Std Hours}}$ x Time Saved x Rate p.h. = $\dfrac{2,400}{3,200}$ x 800 x 10 = Rs.6,000	Rs.30,000

Note: Wage Rate per hour = Rs. 400 for 40 hours per week = Rs. 10 per hour.
Present Total Wages = (2,400 hours x Rs. 10 ph) + (Overtime 800 hours x Rs. 15 ph) = Rs. 36,000

(2 Marks)

3. **Computation of Profit under present and proposed Halsey & Rowan Schemes**

Particulars		Present	Halsey	Rowan
(a)	Sales Revenue (19,200 units x Rs. 11)	2,11,200	2,11,200	2,11,200
(b)	Direct Material Cost (19,200 units x Rs. 8)	1,53,600	1,53,600	1,53,600
(c)	Direct Wages Cost (WN 2)	36,000	28,000	30,000
(d)	Variable OH (Actual Hrs x Rs. 0.50 ph)	3,200 x 0.5 = 1,600	2,400 x 0.5 1,200	2,400 x 0.5 1,200
(e)	Fixed Overheads	9,000	9,000	9,000
(f)	**Total Cost: (b + c + d + e)**	**2,00,200**	**1,91,800**	**1,93,800**
(g)	**Profit (a – f)**	**11,000**	**19,400**	**17,400**

(2 Marks)

Answer-2 (a) :

1. $\text{EOQ} = \sqrt{\dfrac{2AB}{C}}$

   Where,
   A = Annual Requirement of Raw Materials : Since Normal usage is 100 tubes per week,
      Annual Consumption of Raw Materials = 52 weeks x 100 tubes = 5,200 tubes.
   B = Buying Cost per Order = Rs.100 per order.
   C = Carrying Cost per unit per annum = 20% of Rs.500 = Rs.100 p.u. p.a.
   On substitution, **EOQ = 102 tubes.**

(1 Mark)

Note : FG Demand is 2000 tubes per month, while RM consumption is average 100 tubes per week or 5,200 tubes p.a.

2. **Re-Order Level :** = Maximum Usage x Maximum Lead Time = 200 x 8   1,600 tubes

(0.5 Mark)

3. **Minimum Level :** = ROL – (Average Usage x Average Lead Time)
= 1,600 – (100 x 7)   900 tubes

(0.5 Mark)

4. **Maximum Level** = ROL + ROQ – (Min.Usage x Min. Lead Time) =
= 1,600 + 102 – (50 x 6)   1,402 tubes

(0.5 Mark)

5. **Average Level** $= \dfrac{\text{Max. Level} + \text{Min. Level}}{2} = \dfrac{1,402 + 900}{2}$

(0.5 Mark)

6. **Cost Comparison of EOQ with Quarterly Purchase Policy (i.e. 5% Discount)**

	Particulars	EOQ	Quarterly Purchase with 5% Disc.
(a)	Quantity Ordered every time (Q)	102 tubes	$\dfrac{5,200}{4}$ = 1,300, but taken as **1,500 tubes**
(b)	Number of Orders p.a. = $\dfrac{A}{Q}$	$\dfrac{5,200}{102} = 50.98$ orders	(Quarterly) = 4 orders
(c)	Buying Costs p.a. at Rs.100	50.98 x Rs.100 = Rs.5,098	4 x Rs.100 = Rs.400
(d)	Average Inventory = 12 of (a)	12 x 102 = 51 tubes	12 x 1,300 = 650 tubes
(e)	Carrying Costs p.a.	51 x Rs.100 = Rs.5,100	650 x3[20% x (500 less 5%)] = Rs.61,750
(f)	Associated Costs p.a. = (c+e)	Rs.10,198	Rs.62,150
(g)	Purchase Price p.a.	5,200 tubes x Rs.500 = Rs.26,00,000	5,200 x (Rs.500 less 5%) = Rs.24,70,000
(h)	Total Costs p.a. (f + g)	Rs.26,10,198	Rs.25,32,150

(4 Marks)

Conclusion : Additional Cost incurred by ordering at EOQ lots every time = Rs.26,10,198 less Rs.25,32,150 = Rs.78,048 p.a. Hence, quarterly purchase at 5% discount is worthwhile.

Note : Since the question specifies a quarterly purchase of 1,500 tubes for availing 5% discount, such quantity of 1,500 tubes is considered instead of the required quantity of 1,300 tubes per quarter.

(1 Mark)

Answer-2 (b) :

Difference in Absorption   = Absorbed OH Less Actual OH

         = Rs.1,50,000 — Rs.1,70,000 = Rs.20,000 (Under absorption)

This difference may be dealt with under any of the alternative methods —

Method 1 : Transfer all differences to Costing Profit and Loss Account

Journal Entry	Effect on Profits
Costing P & L A/c. Dr. 20,000 To Factory OH Control Rs.20,000	Profits for the current period are reduced by Rs.20,000.

Method 2 : Treat difference as normal using Supplementary OH Recovery Rate

Journal Entry	Effect on Profits
Cost of Sales A/c. Dr. Rs.14,000 FG Control A/.c. Dr. Rs.4,000 WIP Control A/c. Dr. Rs.2,000 To Factory OH Control A/c. Rs.20,000	Profits for the current period are reduced by Rs.14,000. Balance underabsorption (i.e. Rs.4,000 + Rs.2,000) is included in value of FG and WIP Inventory, and the effect thereof is carried over to subsequent accounting period.

Note: Under Method 2, the under absorbed overheads are apportioned to Units Sold, Finished Goods Stock and WIP Stock, on the basis of value in the ratio Rs.3,36,000 : 96,000 : 48,000, i.e. 7:2:1 (Alternatively, if quantity information is available, OH can be apportioned in the ratio of quantities also.)

(2 Marks)

Alternative Method 3: Carry forward of all under absorbed Overheads to subsequent year

Treatment	Effect on Profits
The entire amount of Under-absorbed Overhead may be carried forward to the next year if it is presumed that such under-absorption has arisen due to cyclical or seasonal fluctuations.	In such case, Profit of the current year will then be based on pre-determined overheads and remain unaffected.

(2 Marks)

Answer-3 :

Special Points:

*   **Deemed OH:** Direct Materials and Direct Wages of Service Departments X and Y, are in effect, Indirect Costs. This is because there is no output in a Service Department and hence, no direct costs in a Service Department. Hence, these costs are Deemed Overheads, and are added to the Overheads of the respective Service Departments.
*   **Power Cost Apportionment:** Power Cost may be apportioned in the ratio of HP rating only, if Working Hours or Labour Hours are given in the question. But, here Power Cost is apportioned in the combined ratio of HP rating x Machine Hours, as required in the question, and derived as under.

HP x Working Hours 150 x 1240 = 1,86,000   180 x 1600 = 2,88,000   120 x 1200 = 1,44,000   **(2 Marks)**

1.   Statement on OH

Particulars and Basis	M	N	O	P	Q	Total
Lease Rental (on Floor Space) (12:10:16:4:8)	8,400	7,000	11,200	2,800	5,600	35,000
Power & Fuel (on HP of M/c., x Wkg Hours) (186:288:144)	1,26,408	1,95,728	97,864	—	—	4,20,000
Supervisor's Wages (on Wkg Hrs) (124:160:120)	1,964	2,535	63	—	—	6,400
Lighting & Ele. (on Light Points) (42:52:32:18:16)	1,470	1,820	1,120	630	560	5,600
Depn on M/c (on Value of M/c) (12:10:14:4:6)	4,200	3,500	4,900	1,400	2,100	16,100
Depn on Bldg (on Floor Space) (12:10:14:4:6)	4,320	3,600	5,760	1,440	2,880	18,000
Payroll Exps (on No. of Employees) (48:52:45:15:25)	5,448	5,903	5,108	1,70	2,838	21,000
Canteen Exps (on No. of Employees) (48:52:45:15:25)	7,265	7,870	6,812	2,270	3,783	28,000
ESI & PF Contribution (on No. of Employees) (48:52:45:15:25)	15,049	16,303	14,108	4,703	7,837	58,000
Direct Wages of Service Department (Note)	—	—	—	36,000	53,000	89,000
Total OH before re—apportionment	1,74,524	2,44,259	1,46,935	50,946	78,598	6,97,100
Re—apportionment of Serv.Dept.Exps (WN 2 below)						
P (30:35:25:—:10)	19,107	22,292	15,923	(63,691)	6,369	Nil
Q (40:25:20:15:—)	33,987	21,242	16,994	12,745	(84,968)	Nil
Total OH (after re—apportionment)	2,27,618	2,87,793	1,79,852			
Working Hours	1,240	1,600	1,200			
ON Rate (in Rs.per Machine Hour)	183.56	179.87	149.88			

(5 Marks)

Note : Initially, the above statement is prepared upto Total OH (before re—apportionment) stage. Thereafter, simultaneous Equations are formulated and solved as indicated in WN 2 below. Thereafter, the above OH Statement is continued from re—apportionment onwards.

2. **Simultaneous Equations** are framed and solved as under —

P = 50,946 + 15% Q.   So, $P = 50{,}946 + \dfrac{3}{20} Q$ ....   Equation 1

Q = 78,598 + 10% P.   So, $Y = 78{,}598 + \dfrac{1}{10} P$ ....   Equation 2

(1.5 Marks)

Substituting the value of P in Equation 2, we have,

$Q \quad = \quad 78{,}598 + \dfrac{1}{10} (50{,}946 + \dfrac{3}{20} Q).$

$Q \quad = \quad 78{,}598 + 5{,}094 + \dfrac{3}{200} Q$

$Q - \dfrac{3}{200} Q = 83{,}693$, i.e. $\dfrac{197}{200} Q = 83{,}693$.   So, S = $83{,}693 \times \dfrac{200}{197} = 84{,}968$

Substituting the value of Q n Equation 1, we have P = $50{,}946 + \left(\dfrac{3}{20} \times 84{,}968 \right) = 63{,}691$

Note : The values of X and Y obtained after solving the above Simultaneous Equations should be higher than the OH Costs of these Service Departments obtained earlier. These bigger values are then used for OH re—apportionment.

(1.5 Marks)

Answer-4 :

1. **Raw Material Cost Account**

Particulars	Rs.	Particulars	Rs.
To Balance b/d	48,836	By Work in Progress Control — issues	17,000
To Cost Ledger Control — purchases	22,422	By Cost Ledger Control — Pur. Returns	1,000
		By Abnormal Loss — Raw Material Loss	1,300
		By balance /d (bal.fig.)	51,958
Total	**71,258**	**Total**	**71,258**

(2 Marks)

2. **Wages Control Account**

Particulars	Rs.	Particulars	Rs.
To Cost Ledger Control — Wages Paid (abl.fig)	18,370	By WIP Control — Direct Wages allocated — given	18,370
Total	**18,370**	**Total**	**18,370**

(1 Mark)

3.   Factory Overheads Control Account

Particulars	Rs.	Particulars	Rs.
To Cost Ledger Control — POH incurred (bal.fig)	11,786	By WIP Control — absorption — given	11,786
Total	**11,786**	**Total**	**11,786**

(1 Mark)

4.   Work in Progress Control Account

Particulars	Rs.	Particulars	Rs.
To balance b/d	14,745	By Finished Goods Control — production	36,834
To Raw Material Control — Issues	17,000	By Abnormal Loss (rejection)	1,800
To Wages Control — Direct Wages	18,370	By Balance c/d (bal.fig)	23,267
To Factory Overheads Control — POH absorbed	11,786		
Total	**61,901**	**Total**	**61,901**

(2 Marks)

5.   Finished Goods Control Account

Particulars	Rs.	Particulars	Rs.
To balance b/d	21,980	By Cost Ledger Control — Cost of Goods sold	42,000
To Work in Progress Control — Production	36,834	By Balance c/d (bal.fig)	19,814
To Cost Ledger Control — Sale Return (at cost)	3,000		
Total	**61,814**	**Total**	**61,814**

Note : Since Sales Value is not given, Costing P & L cannot be prepared. Hence, COGS is transferred to GLA. Alternatively, it can be carried forward and shown in the Trial Balance also.

(2 Marks)

6.   Cost Ledger Control Account

Particulars	Rs.	Particulars	Rs.
To Finished Goods Control — Cost of Goods sold	42,000	By Balance b/d	85,561
To Raw Material Control — Purchase Returns	1,000	By Raw Material Control — Purchases	22,422
To balance c/d (bal.fig)	98,139	By Finished Goods Control — Sales Returns	3,000
		By Factory Overhead Control — POH incurred	11,786
		By Wages Control — Wages paid	18,370
Total	**1,41,139**	**Total**	**1,41,139**

(2 Marks)

7.   Abnormal Loss Account

Particulars	Rs.	Particulars	Rs.
To Raw Material Control — Loss	1,300	By Balance c/d	3,100
To Work in Progress Control — Rejection	1,800		
Total	**3,100**	**Total**	**3,100**

(2 Marks)

8.   **Trial Balance at the end of the period**

Particulars	Dr.	Cr.
Raw Material Control Account	51,958	
Work in Progress Control Account	23,267	
Finished Goods Control Account	19,814	
Abnormal Loss Account	3,100	
Cost Ledger Control Account		98,139
Total	**98,139**	**98,139**

(2 Marks)