THE INSTITUTE OF COST AND MANAGEMENT ACCOUNTANTS OF BANGLADESH
CMA JUNE, 2016 EXAMINATION
PROFESSIONAL LEVEL-I
SUBJECT: 102. COST ACCOUNTING

Model Solution

Solution of Q. No. 1.

The Kim Company						
Finishing Department						
Cost of Production Report-Average Costing						
For						
Quantity Schedule						
Units in process at begaining (25% Conversion)				12,500		
Units Started				87,500		100,000
Units completed & Transfer out				62,500		
Units still in Process (95% Labor & OH, 100% Materials)				25,000		
Units lost in Process-Normal (10% of all goods after inspection done)				8,750		
Units lost in Process-Abnormal				3,750		100,000
Cost Charged to the department				**Total Cost**		**Unit Cost**
Cost from Preceeding departmet						
Work in process - begaining inventory		12,500	units	103,625		8.29
Transferred in during this periods		87,500	units	809,375		9.25
Total		100,000		913,000		9.13
Cost added by department:						
Work in process at begaining inventory						
Materials				-		
Conversion				52,500		
Cost added during Period:						
Materials				819,000		9.36
Conversion				1,564,500		18.12
Total cost added				2,436,000		27.48
Adjustment for Lost unit						0.88
Total cost to be accounted for				**3,349,000**		**37.48**
Cost accounted for as follows:		Unit	Rate	Amount		Amount
Tansfer to the next department		62,500	37.48	2,342,695		2,342,695
Factory overhead control-Abnormal loss		3,750				
Adjusted Cost from Preceeding department		3,750	10.01	37,521		
Conversion (3750@80%)	80%	3,750	18.12	54,353		91,873
Work in process -ending inventory		25,000				
Adjusted Cost from Preceeding department		25,000	10.01	250,137		
Materials		25,000	9.36	234,000		
Conversion (@95%)	95%	25,000	18.12	430,294		914,431
Total cost accounted for						**3,349,000**
Additional Computations						
Equivalent Production:		%		Materials		Coversion
Units completed & Transfer out		100%		62,500		62,500
Units still in Process (95% Labor & OH, 100% Materials)				25,000		23,750
Units lost in Process-Abnormal (80% Conversion)		80%		-		3,000
				87,500		89,250
Unit Cost:						
Materials		819,000	/	87,500	=	9.36
Conversion		1,617,000	/	89,250	=	18.12
Adjustment for lost unit						
Method No. 1	0.88	=	(Tk 9,13000/(62500+25000+3750) 0r 91250)-			
	or	10.01	-	9.13		
Note 1: The cost of Normal lost units does not appear as a separate item of cost but it spread over the remaining good units.						
Note 2 :In case of **abnormal loss**, a different situation is created by abnormal or avoidable loss that are not expected to arise under normal, efficient operating conditions. This cost is charged to Factory Overhead or to a current-period expense account which is reported as a seperate item in the cost of goods sold statement						

Solution to the Q. No. 02.

(a) Determination of overhead cost absorption rate using machine hour for each product:

Total overhead:	Tk.
Factory overhead to Machine oriented activity	37,424
Setup costs	4,345
Cost of ordering materials	1,920
Handling materials	7,580
Administration for spare parts	8,600
Total overhead	Tk. 59,869

Total machine hours:

For A =	500 x ¼ =	125	Machine hours
For B =	5000 x ¼ =	1,250	Machine hours
For C =	600 x 1 =	600	Machine hours
For D =	7000 x 1 ½ =	10,500	Machine hours
Total Machine hours		12,475	Machine hours

So Overhead absorption rate per machine hour = Tk. 59,869/12,475 = Tk. 4.80.

(b) (i)

Cost per setup = $\frac{4355}{1+5+2+9} = \frac{\text{Tk.}4355}{17} = \text{Tk.}256$

Cost per order = $\frac{1920}{1+4+1+4} = \frac{\text{Tk.}1920}{10} = \text{Tk.}192$

Cost per handling of materials = $\frac{\text{Tk.}7580}{2+11+3+11} = \frac{7580}{27} = \text{Tk.}281$

Cost per spare parts = $\frac{\text{Tk.}8,600}{2+5+1+4} = \frac{\text{Tk.}8600}{12} = \text{Tk.}717$

Cost per machine hour = $\frac{\text{Tk.}37424}{125+1250+600+10,500} = \frac{37,424}{12475} = \text{Tk.}3$

Calculation of overhead cost per unit of each product using ABC

Product	A	B	C	D
Activities:	(Tk.)	(Tk.)	(Tk.)	(Tk.)
Set-ups	256[1]	1280[1]	512	2304
Ordering	192[2]	768	192	768
Handling	562[3]	3091	843	3091
Spare parts	1,434	3,585	717	2,868
Machine hours	375	3,750	1800	31,500
Total	2,819	12,474	4064	40,531
No of units	500	5000	600	7000
Overhead cost per unit	5.64	2.50	6.77	5.79

(b) (ii)

Cost of unit product cost of each product

	A	B	C	D
Materials cost	Tk. 50.00	Tk. 50.00	Tk. 160.00	Tk. 170.00
Direct labor cost	30.00	30.00	120.00	90.00
Overhead cost	5.64	2.50	6.77	5.79
Total cost of a unit	Tk. 85.64	Tk. 82.50	Tk. 286.77	Tk. 265.79

Solution to the Q. No. 03.

(a) (i)

Mr. Abu Baker's total wages for the week are computed ad follows:

Regular Pay (45 hours x Tk. 48) =	Tk. 2,160
Overtime premium [(45-36) hr x (Tk. 72 – 48)] =	216
	Tk. 2,376

OR

Normal Hours payment = (36 hrs x Tk. 48) =	1728
Over time payment 9 hrs x Tk. 72 =	648
	2376

Journal entries to record Mr. Baker's total wages for the week assuming that

(i) The overtime premium was due to random job scheduling:

Work in process inventory – Job # 453 ……..	Tk. 2,160	
Factory overhead control overtime premium	216	
Payroll payable		Tk. 2,376

(ii)

Work in process inventory – Job # 453 ……..	Tk. 2,376	
Payroll payable		Tk. 2,376

(iii)

Work in process inventory – Job # 453 ……..	Tk. 2,160	
Loss from overtime premium	216	
Payroll payable		Tk. 2,376

(b) Journal Entry to record the weekly labor cost to production

Work in process inventory	Tk. 2,500		
Factory overhead control vacation pay (Tk. 5,000 ÷ 50 Weeks)	100		
Payroll payable		Tk. 2,500	
Vacation pay payable		100	

(c) Total labor cost per month :

(1)	Wages	Tk. 8,000
(2)	Dearness allowance	800
(3)	Bonus @ 10% on wages (8000 x 10%) =	800
(4)	Employer's contribution to CPF @ 8% of wages = (8000 x 8%)=	640
(5)	Employer's contribution to social security tax @ 1% of wages =	80
(6)	Proportion of canteen subsidy (Tk. 40,000 / 400)	100
	Total labor cost per month for a worker	Tk. 10,420

Calculation of Number of Working hour per month:

Working days in a year	300
Working hour in a day	8
Total working hour in a year	2,400
Less : 15 days earned leave (15 x 8) hours	(120)
	2,280
Less : Idle time = 20% on 2280 =	(456)
	1824
Effective hours in a month = $\frac{1824}{12} =$	152
So labor cost per hours = $\frac{\text{Monthly cost}}{\text{Monthly hours}} = \frac{10,420}{152} =$	Tk. 68.55

Solution of Q. No. 4.

1. a. Molding department:

Overhead allocated = Tk. 4,602 + Tk. 957 + Tk. 12,489 = Tk. 18,048

Over allocated overhead = Actual overhead costs – Overhead allocated

= Tk. 17,248 – Tk. 18,048 = Tk. 800 over allocated

1. b. Painting department:
Overhead allocated = Tk. 2,306 + Tk. 1,897 + Tk. 24,982 = Tk. 29,185
Under allocated overhead = Actual overhead costs – Overhead allocated
= Tk. 31,485 – Tk. 29,185 = Tk. 2,300 under allocated

2a. All under/over allocated overhead is written off to cost of goods sold. Both Work in Process and Finished goods inventory remain unchanged.

	Account Balance (Before Proration)	Proration of Tk. 1,500 Underallocated Overhead	Account Balance (After Proration)
WIP	27,720.00		27,720.00
Finished Goods	15,523.20		15,523.20
Cost of Goods Sold	115,156.80	(800)+2,300	116,656.80
	158,400.00		**159,900.00**

2b. Under allocated overhead prorated based on ending balances

	Account Balance (Before Proration)	Percent of Total	Proration of Tk. 1,500 Underallocated Overhead	Account Balance (After Proration)
WIP	27,720.00	0.175	262.50	27,982.50
Finished Goods	15,523.20	0.098	147.00	15,670.20
Cost of Goods Sold	115,156.80	0.727	1,090.50	116,247.30
	158,400.00	**1.000**	**1,500.00**	**159,900.00**

2c. Under/overallocated overhead prorated based on overhead in ending balances. (Note: overhead must be allocated separately from each department. This can be done using the number of machine hours/direct labor hours as a surrogate for overhead in ending balances.)

For Molding department:

	Allocated Overhead in Account Balance	Allocated Overhead in Account Balance as a Percent of Total	Proration of Tk. 800 Overallocated Overhead
WIP	4,602.00	0.255	203.99
Finished Goods	957.00	0.053	42.42
Cost of Goods Sold	12,489.00	0.692	553.59
	18,048.00	**1.000**	**800.00**

For finishing department:

	Allocated Overhead in Account Balance	Allocated Overhead in Account Balance as a Percent of Total	Proration of Tk. 2,300 Underallocated Overhead
WIP	2,306.00	0.079	181.73
Finished Goods	1,897.00	0.065	149.50
Cost of Goods Sold	24,982.00	0.856	1,968.77
	29,185.00	**1.000**	**2,300.00**

	Account Balance (Before Proration)	Underallocated/ Overallocated Overhead	Proration of Tk. 2,300 Underallocated Overhead
WIP	27,720.00	(204)+182	27,697.74
Finished Goods	15,523.20	(42)+150	15,630.28
Cost of Goods Sold	115,156.80	(554)+1969	116,571.98
	158,400.00	**1,500**	**159,900.00**

3. The first method is simple and Cost of Goods Sold accounts for almost 73% of the three account amounts. The amount of overallocated and underallocated overhead is also immaterial. Allocation to the other two accounts is minimal. Therefore, write-off to cost of goods sold is the most cost effective alternative.

Solution of Q. No. 5.

(i) wages paid (before share of group Bonus)

	Direct Personnel	**Indirect Personnel**
Total hours	488	121
Normal hours	444 (12 x 37)	111 (3 x 37)
Overtime hours	44 (488-444)	10 (121-111)
Basic Wages	Tk. 3,660 (488 x Tk. 7.5)	Tk. 726 (121 x Tk. 6)
Overtime Premium	Tk. 110 (44 x Tk. 2.5)	Tk. 20(10 x Tk. 2)
Total wages (Tk.)	**[3,660+ 110]; 3,770**	**[726+20]; 746**

	Direct Cost Tk.	**Indirect Cost** Tk.
Direct Workers:		
Basic	Tk. 3,330 (444 x Tk. 7.50)	Tk. 330 (44 x 7.50)
Overtime Premium		110
Indirect workers		746
Group Bonus		520
	3,330	1,706

(iii) Wages Control Account

Cost Ledger Control A/c	5,036	Work-in-Process	3,330
		Production Overhead	1,706
	5,036		5,036

(iv) Efficiency Ratio = Expected hours for actual output/ Actual Hours

= 470/ (432 + 32) x100
= 101.30%

(b) The statement is false. In a normal costing system, the Manufacturing Overhead Control account will not, in general, equal the amounts in the Manufacturing Overhead Allocated account. The Manufacturing Overhead Control account aggregates the actual overhead costs incurred while Manufacturing Overhead Allocated allocates overhead costs to jobs on the basis of a *budgeted rate* times the actual quantity of the cost-allocation base. Underallocation or overallocation of indirect (overhead) costs can arise because of (a) the Numerator reason—the actual overhead costs differ from the budgeted overhead costs, and (b) the Denominator reason—the actual quantity used of the allocation base differs from the budgeted quantity