

**THE INSTITUTE OF COST AND MANAGEMENT ACCOUNTANTS OF BANGLADESH**  
**CMA DECEMBER, 2018 EXAMINATION**  
**PROFESSIONAL LEVEL-I**  
**SUBJECT: 102.COST ACCOUNTING**

**Solution**

**Solution to the question No. 1**

**(d)**

We know,  $EOQ = \sqrt{(2 \times \text{Annual required units} \times \text{Cost per Order}) / (\text{Cost per unit of Materials} \times \text{Carrying cost \%})}$   
 $= \sqrt{(2 \times 10,000 \times 200) / (47 \times 1.489)}$   
 $= \sqrt{571429}$   
 $= 755.93 \text{ jersey or } 756 \text{ jersey.}$

No of orders per year =  $10,000 / 756$   
 $= 14 \text{ orders}$

Reorder point =  $7 \times 27.39$   
 $= 192 \text{ jerseys.}$

**Solution to the question No. 2**

(b) High-low method,

Variable cost /Unit will be

$(1900 - 1100) \text{ Nos of patient} = \text{Cost in Tk } (15200 - 12800)$   
i.e Variable cost = Tk. 3 per patient  
Fixed cost = Tk. 9,500  
Cost formula,  $Y = \text{Tk. } 9,500 + \text{Tk. } 3 \times \text{Patient.}$

**OLS method:**

Variable cost = Tk. 2.6538 per patient  
Fixed cost = Tk. 9,938.46  
Cost formula,  $Y = \text{Tk. } 9,938.46 + \text{Tk. } 2.6538 \text{ per Patient.}$

**(c)**

Manufacturing Cost Statement

	<b><u>Amount in Tk</u></b>
Opening Materials in hand	20,000
Add Materials Purchase	<u>1,00,000</u>
Materials available in use	1,20,000
Less: Closing M in hand	<u>30,000</u>
Direct material used	Tk. 90,000
Direct labor	3,50,000
Factory Overhead:	
Dep. –Plant & Eq,	80,000
Indirect Labour	5,000
Heat Light & Power	12,000
Sup. Salary	40,000
Property tax Plant	13,000
Supplies Plant	<u>4,000</u>
Total factory overhead	<u>154,000</u>
Total manufacturing costs	594,000

**Solution to the question No. 3**

**Production Quantity Information**

	Step 1: Analyze Flow of Physical Units		Step 2: Calculate equivalent units		
	Physical units	%	DM	DL	F OH
Input					
Work-in-process, June 1	<b>10,000</b>				
Direct materials		<b>100</b>		<b>10,000</b>	
Direct labor		<b>30</b>			<b>3,000</b>
Factory overhead		<b>40</b>			<b>4,000</b>
<b>Number started</b>	<b>40,000</b>				
<b>Total to account for</b>	<b>50,000</b>				
Output					
Units completed	44,000	100	44,000	44,000	44,000
WIP, 31 <sup>st</sup> June	6,000				
Direct materials		100	6,000		
Direct labor		50		3,000	
Factory overhead		60			3,600
<b>Total accounted for</b>					
<b>Total equivalent units</b>	<b>50,000</b>		50,000	47,000	47,600
<b>Less: Equivalent units in June 1 WIP</b>			(10,000)	(3,000)	(4,000)
<b>Total equivalent units for work performed in June only</b>			<b>40,000</b>	<b>44,000</b>	<b>43,600</b>

**Unit cost determination:**

Step-3: Determining total costs	DM (Tk)	DL (Tk)	F OH (Tk)	Total (Tk)
WIP, 1 <sup>st</sup> June				12,680
Costs added during June	44,000	22,400	43,600	110,040
<b>Total costs to account for</b>	<b>44,000</b>	<b>22,400</b>	<b>43,600</b>	<b>122,720</b>
Step-4 Complete cost per equivalent unit				
Number of equivalent units	40,000	44,000	<b>43,600</b>	
<b>Equivalent unit costs</b>	<b>1.10</b>	<b>0.51</b>	<b>1.00</b>	<b>2.61</b>

**Cost Assignment**

Step-5: Assigning cost	Completed and transferred out (Tk)	Ending WIP	Total (Tk)
Goods completed and transferred out			
Beginning WIP	<b>12,680</b>		<b>12,680</b>
Costs added during the year			
Direct Labor		3570	3570
Factory Overhead		6000	6000
Total for beginning inventory	<b>22250</b>		22250
Started and completed	<b>88740</b>		88740
Total cost completed and transferred out	<b>110990</b>		110,990
Ending WIP			
Direct material		<b>6600</b>	6600
Direct labor		<b>1530</b>	1530
Factory OH		3600	3600
<b>Total costs accounted for</b>	<b>110,990</b>	<b>11,730</b>	<b>122,720</b>

**Solution to the question No. 4**

(c)

(i)

	Soft drinks	Fresh produce	Packaged food	Total
Revenues	Tk. 317,400	Tk. 840,240	Tk. 483,960	1641600
Cost of goods sold	Tk. 240,000	Tk. 600,000	Tk. 360,000	1200000
Store support cost	Tk. 72000	Tk. 180000	Tk. 108000	360000
<b>Operating income</b>	<b>5,400</b>	<b>60,240</b>	<b>15,960</b>	<b>81,600</b>
%	1.70	7.17	3.30	4.97

(ii)

Activity (1)	Total support costs (3)	Cost allocation base (4)	OH allocation rate
1. Ordering	Tk.62,400	624 purchase orders	Tk. 100 per purchase order
2. Delivery	Tk. 100,800	1,260 deliveries	Tk. 80 per delivery
3. Shelf stocking	Tk. 69,120	3,456 hours of shelfstocking Time	Tk. 20 per stocking-hour
4. Customer support	Tk. 122,880	614,400 items sold	Tk. 0.20 per item sold

	Soft drinks	Fresh produce	Packaged food	Total
Revenues	Tk. 317,400	Tk. 840,240	Tk. 483,960	1641600
Cost of goods sold	Tk. 240,000	Tk. 600,000	Tk. 360,000	1200000
Bottle return costs	4800	0	0	4800
Ordering costs	14400	33600	14400	62400
Delivery costs	9600	70080	21120	100800
Shelf stocking costs	4320	43200	21600	69120
Customer support costs	10080	88320	24480	122880
Total costs	283200	835200	441600	1560000
<b>Operating income</b>	<b>34,200</b>	<b>5,040</b>	<b>15,960</b>	<b>81,600</b>
%	10.78	0.60	8.75	4.97

(iii) Managers believe the ABC system is more credible than the simple costing system. The ABC system distinguishes the different types of activities at FS more precisely. It also tracks more accurately how individual product lines use resources.

**Solution to the question No. 5**

(c)

(i) Direct method:

	Support dept.		Operating dept.		
	Plant maintenance (TK.)	Information systems. (TK.)	Machining (TK.)	Assembly (TK.)	Total (TK.)
Budgeted overhead costs before any inter-department cost allocations	6,300,000	1,452,150	4,000,000	2,000,000	13,752,150
Allocation of plant maintenance	(6,300,000)		2362500	3937500	
Allocation of information systems		(1452150)	1290800	161350	
Total	0	0	7653300	6098850	13752150

(ii) Step down method

	Support dept.		Operating dept.		
	Plant maintenance (TK.)	Information systems. (TK.)	Machining (TK.)	Assembly (TK.)	Total (TK.)
Budgeted overhead costs before any inter-department cost allocations	6,300,000	1,452,150	4,000,000	2,000,000	13,752,150
Allocation of plant maintenance	(6,300,000)	1,260,000	1,890,000	3,150,000	
		2712150			
Allocation of information systems		(2712150)	2410800	301350	
Total	0	0	8300800	5451350	13752150

iii) Reciprocal method

	Support dept.		Operating dept.		
	Plant maintenance (TK.)	Information systems. (TK.)	Machining (TK.)	Assembly (TK.)	Total (TK.)
Budgeted overhead costs before any inter-department cost allocations	6,300,000	1,452,150	4,000,000	2,000,000	13,752,150
Total	0	0	8187025	5565125	13752150

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