

CMA JANUARY 2022 EXAMINATION
Intermediate Level-I
Cost Accounting
MODEL SOLUTIONS

Solution of the Q. No. 1

- 1) (c)
- 2) (c)
- 3) (c)
- 4) (b)
- 5) (d)
- 6) (d)
- 7) (b)
- 8) (a)
- 9) (a)
- 10) (c)

Solution of the Q. No. 2

- (a) False.
Correct answer: Expense is a part of cost.
- (b) True.
- (c) False.
Correct answer: Manufacturing cost is equal to sum of direct materials and conversion cost.
Or, Manufacturing cost is equal to sum of prime cost and manufacturing overhead.
- (d) True.
- (e) True.

Solution of the Q. No. 3

Column A	Column B
(a) Job costing	(ix) Customized goods
(b) Process costing	(iv) Similar products and mass production
(c) Service costing	(vii) Transportation firms
(d) Joint products	(vi) More output from one input
(e) Standard costing	(i) Variance analysis

Solution of the Q. No. 4

- a)**
 - i. During periods of curtailed activity, it is just as necessary to keep costs down as it is when operating at full capacity. Assuming that the incentive wage plan resulted in greater labor efficiency and lower costs per unit at full capacity, then the labor cost per unit should be lower in a slack period if the incentive wage scale is continued. A shorter workweek or some other system of sharing the work would be indicated.
 - ii. Ordinarily, it is not a propitious time to initiate an incentive wage plan when a plant is operating far below capacity because the worker is already fearful of something less than full employment. If a reasonable day's work is being received for the going rate of pay, postponement of the incentive plan is indicated. However, there is a natural tendency for workers to reduce output during such periods, thereby increasing costs, with a tendency to bring about further reduction in the volume that can be sold. With full explanation and understanding of the situation, the incentive wage could be introduced with a plant operating at 60% capacity.

- b)**

The spending and idle capacity variances are usually computed each period by analyzing any over or under-applied overhead. The spending variance is so titled because it is computed by comparing actual overhead with budgeted or allowed overhead. The idle capacity variance, computed by comparing applied overhead with budgeted overhead, is so called because it indicates the effect on overhead of operating at a capacity different from that used in computing the predetermined overhead rate.

c)

1.

$$EOQ = \sqrt{\frac{2DP}{c}} = \sqrt{\frac{2 \times 120,000 \times 250}{2.4}} = 5,000 \text{ pairs of shoes}$$

2. Weekly demand = Monthly demand ÷ 4 = 10,000 ÷ 4 = 2,500 pairs of shoes per week

Purchasing lead time = 1 week

Reorder point = 2,500 pairs of shoes per week × 1 week = 2,500 pairs of shoes

3.

Safety Stock Level in Units (1)	Demand Levels Resulting in Stockouts (2)	Stockout in Units (3)= (2)– 2,500–(1)	Probability of Stockouts (4)	Relevant Stockout Costs (5)=(3)×Tk.2	Number of Orders per Year (6)	Expected Stockout Costs (7)= (4)×(5)×(6)	Relevant Carrying Costs (8)= (1)×Tk. 2.40	Relevant Total Costs (9)=(7)+(8)
0	2750 3000	250 500	0.2 0.04	Tk. 500 1000	24 24	Tk. 2,400 960		
250	3000	250	0.04	500	24	<u>3,360</u> 480	<u>Tk. 0</u> 600	<u>Tk. 3,360</u> <u>1,080</u>
500						0	1200	1,200

Above table presents the safety stock computations for Warehouse OR2 when the reorder point excluding safety stock is 2,500 pairs of shoes. The exhibit shows that annual relevant total stockout and carrying costs are the lowest (\$1,080) when a safety stock of 250 pairs of shoes is maintained. Therefore, Warehouse OR2 should hold a safety stock of 250 pairs.

As a result, Reorder point with safety stock = 2,500 pairs + 250 pairs = 2,750 pairs. Reorder quantity is unaffected by the holding of safety stock and remains the same as calculated in requirement 1.

Reorder quantity = 5,000 pairs

Warehouse OR2 should order 5,000 pairs of shoes each time its inventory of shoes falls to 2,750 pairs.

Solution of the Q. No. 5

(a) Open-ended.

(b) Open-ended.

(c)

Falcon Incorporation

Quality Cost Report

For the years ended 31 December 2021 and 2020

		2021			2020	
	Tk.	Tk.	% of Sales	Tk.	Tk.	% of Sales
Prevention Costs:						
Quality engineering	570,000			420,000		
Statistical process control	180,000			-		
System development	750,000	1,500,000	2.00%	480,000	900,000	1.20%
Appraisal Costs:						
Inspection of materials	900,000			750,000		
Packaging inspection	240,000			210,000		
Field servicing	900,000	2,040,000	2.72%	1,200,000	2,160,000	2.88%
Internal Failure Costs:						
Rework	1,500,000			1,050,000		
Scrap	1,125,000			630,000		
Repairs	1,200,000			810,000		
Design changes	975,000	4,800,000	6.4%	720,000	3,210,000	4.28%
External Failure Costs:						
Returns	60,000			30,000		
Warranty	1,050,000			3,600,000		
Product recalls	750,000	1,860,000	2.48%	2,100,000	5,730,000	7.64%
Total Quality Costs		<u>10,200,000</u>	<u>13.60%</u>		<u>12,000,000</u>	<u>16.00%</u>

Solution of the Q. No. 6

(a) An advertising campaign for Pepsi is likely to be very specific to that individual client. Job costing enables all the specific aspects of each job to be identified. In contrast, the processing of checking account withdrawals is similar for many customers. Here, process costing can be used to compute the cost of each checking account withdrawal.

b)

1. Number of units manufactured	20,000
Standard labor time per unit (18 minutes ÷ 60 minutes per hour)	<u>x 0.3</u>
Total standard hours of labor time allowed	6,000
Standard direct labor rate per hour	<u>x Tk. 12</u>
Total standard direct labor cost	Tk. <u>72,000</u>
Actual direct labor cost	Tk. 73,600
Standard direct labor cost	<u>72,000</u>
Total variance—unfavorable	<u>Tk. 1,600</u>

2.

Labor Rate Variance = AH (AR – SR)
 5,750 hours (Tk. 12.80 per hour* – Tk. 12.00 per hour) = Tk. 4,600 U
 *Tk. 73,600 ÷ 5,750 hours = Tk. 12.80 per hour

Labor Efficiency Variance = SR (AH – SH)
 Tk. 12 per hour (5,750 hours – 6,000 hours) = Tk. 3,000 F

3.

Variable Overhead Spending Variance = AH (AR – SR)
 5,750 hours (Tk. 3.80 per hour* – Tk. 4.00 per hour) = Tk. 1,150 F
 *Tk. 21,850 ÷ 5,750 hours = Tk. 3.80 per hour

Variable Overhead Efficiency Variance = SR (AH – SH)
 Tk. 4 per hour (5,750 hours – 6,000 hours) = Tk. 1,000 F

c)

1. Computation of the total cost per EU:

Cost per EU for materials	Tk. 25.40
Cost per EU for conversion.....	<u>18.20</u>
Total cost per EU	Tk. 43.60

2. Computation of equivalent units in ending inventory:

	Materials	Conversion
Units in ending inventory	300	300
Percentage completed	70%	60%
Equivalent units of production	210	180

3. Computation of equivalent units required to complete the beginning inventory:

	Materials	Conversion
Units in beginning inventory	400	400
Percentage completed	20%	60%
Equivalent units of production	80	240

4. Units Transferred to the next department:	3,100
Units from the beginning inventory	<u>400</u>
Units started and completed during the period	<u>2,700</u>

5.

Cost Reconciliation:

	Total Cost	Equivalent Units	
		Materials	Conversions
Cost accounted for as follows:			
Transferred to the next department:			
From the beginning inventory:			
Cost in the beginning inventory	Tk. 11,040		
Cost to complete these units:			
Materials at Tk. 25.4 per EU	2032	80	
Conversion at Tk. 18.2 per EU	<u>4,368</u>		240
Total cost from beginning inventory	<u>17,440</u>		
Units started and completed during the period at Tk. 43.60 per unit	<u>117,720</u>	2,700	2,700
Total cost transferred to the next department	135,160		
Work in process, ending:			
Materials at Tk. 25.4 per EU	5,334	210	
Conversion at Tk. 18.2 per EU	<u>3,276</u>		180
Total work in process, ending	<u>8,610</u>		
Total cost accounted for	<u>Tk. 143,770</u>		

Solution of the Q. No. 7

a) No, ABC systems apply equally well to service companies such as banks, railroads, hospitals, and accounting firms, as well merchandising companies such as retailers and distributors.

b)
1.

	Production Method	Sales Method
Revenues		
Main product	Tk. 682,240 ^a	Tk. 682,240
Byproduct	-	<u>65,000^d</u>
Total revenues	<u>682,240</u>	<u>747,240</u>
Cost of goods sold		
Total manufacturing costs	500,000	500,000
Deduct value of byproduct production	<u>85,000^b</u>	0
Net manufacturing costs	415,000	500,000
Deduct main product inventory	<u>74,700^c</u>	<u>90,000^e</u>
Cost of goods sold	<u>340,300</u>	<u>410,000</u>
Gross margin	<u>Tk. 341,940</u>	<u>Tk. 337,240</u>

a $42,640 \times \text{Tk.}16.00$

b $8,500 \times \text{Tk.}10.00$

c $(9,360/52,000) \times \text{Tk.}415,000 = \text{Tk.}74,700$

d $6,500 \times \text{Tk.}10.00$

e $(9,360/52,000) \times \text{Tk.}500,000 = \text{Tk.}90,000$

2.

	Production Method	Sales Method
Main Product	Tk. 74,700	Tk. 90,000
Byproduct	20,000 ^a	0

a Ending inventory shown at unrealized selling price.

$\text{BI} + \text{Production} - \text{Sales} = \text{EI}$

$0 + 8,500 - 6,500 = 2,000$ pounds

Ending inventory = 2,000 pounds × Tk.10 per pound = Tk.20,000

c)

1. Snappy's operating income in 2021 is as follows:

	Total for 250,000 Tiles (1)	Per Unit (2) = (1) ÷ 250,000
Revenues (Tk. 4 × 250,000)	<u>Tk. 1,000,000</u>	<u>Tk. 4.00</u>
Purchase cost of tiles (Tk. 3 × 250,000)	750,000	3.00
Ordering costs (Tk. 50 × 500)	25,000	0.10
Receiving and storage (Tk. 30 × 4,000)	120,000	0.48
Shipping (Tk. 40 × 1,500)	<u>60,000</u>	<u>0.24</u>
Total costs	<u>955,000</u>	<u>3.82</u>
Operating income	<u>Tk. 45,000</u>	<u>Tk. 0.18</u>

2. Price to retailers in 2022 is 95% of 2021 price = $0.95 \times \text{Tk. } 4 = \text{Tk. } 3.80$; cost per tile in 2022 is 96% of 2021 cost = $0.96 \times \text{Tk. } 3 = \text{Tk. } 2.88$.

Snappy's operating income in 2022 is as follows:

	Total for 250,000 Tiles (1)	Per Unit (2) = (1) ÷ 250,000
Revenues (Tk. 3.80 × 250,000)	<u>Tk. 950,000</u>	<u>Tk. 3.80</u>
Purchase cost of tiles (Tk. 2.88 × 250,000)	720,000	2.88
Ordering costs (Tk. 50 × 500)	25,000	0.10
Receiving and storage (Tk. 30 × 4,000)	120,000	0.48
Shipping (Tk. 40 × 1,500)	<u>60,000</u>	<u>0.24</u>
Total costs	<u>925,000</u>	<u>3.70</u>
Operating income	<u>Tk. 25,000</u>	<u>Tk. 0.10</u>

3. Snappy's operating income in 2022, if it makes changes in ordering and material handling, will be as follows:

	Total for 250,000 Tiles (1)	Per Unit (2) = (1) ÷ 250,000
Revenues (Tk. 3.80 × 250,000)	<u>Tk. 950,000</u>	<u>Tk. 3.80</u>
Purchase cost of tiles (Tk. 2.88 × 250,000)	720,000	2.88
Ordering costs (Tk. 25 × 200)	5,000	0.02
Receiving and storage (Tk. 28 × 3,125)	87,500	0.35
Shipping (Tk. 40 × 1,500)	<u>60,000</u>	<u>0.24</u>
Total costs	<u>872,500</u>	<u>3.49</u>
Operating income	<u>Tk. 77,500</u>	<u>Tk. 0.31</u>

Through better cost management, Snappy will be able to achieve its target operating income of Tk. 0.30 per tile despite the fact that its revenue per tile has decreased by Tk. 0.20 (Tk. 4.00 – Tk. 3.80), while its purchase cost per tile has decreased by only Tk. 0.12 (Tk. 3.00 – Tk. 2.88).

..... **The End**