



J.K. SHAH[®]
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SUGGESTED SOLUTION

INTERMEDIATE MAY 2019 EXAM

SUBJECT- COSTING & FM

Test Code - CIM 8093

BRANCH - () (Date :)

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Answer 1:

Process A . Period : February 20X1

Average Method Output : 10,000 units

Statement of Equivalent Production

Input	Output			Equivalent Production					
Particulars	Units	Particulars	Units	Material		Labour		Overhead	
				Units	%	Units	%	Units	%
Opening stock	4,000	Units completed:	14,000	14,000	100	14,000	100	14,000	100
Closing stock			6,000	6,000	100	2,000	33.1/3	2,000	33.1/3
New Units introduced	16,000								
	20,000		20,000	20,000		16,000		16,000	

Statement of Cost for each Element

Elements of Cost	Cost of opening WIP Rs.	Cost in Process Rs.	Total Cost Rs.	Equivalent Production Rs.	Cost per unit Re.
Material	1,200	5,120	6,320	20,000	0.316
Labour	200	3,000	3,200	16,000	0.200
Overhead	200	3,000	3,200	16,000	0.200

Statement of Apportionment of Cost

Items	Element	Equivalent Production	Cost per unit Rs.	Cost Rs.	Total Cost Rs.
Units completed	Material	14,000	0.316	4,424	
	Labour	14,000	0.200	2,800	
	Overhead	14,000	0.200	2,800	10,024
Closing Stock	Material	6,000	0.316	1,896	
	Labour	2,000	0.200	400	
	Overhead	2,000	0.200	400	2,696

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Process A Account

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Particulars	Units	Amount	Particulars	Units	Amount
To Opening Stock	4,000	Rs.1,600	By units completed and transferred	14,000	Rs.10,024
To New units introduced	16,000		By Closing stock.	6,000	2,696
Material		5,120			
Labour		3,000			
Overhead		3,000			
	20,000	12,720		20,000	12,720

Answer 2:**(i) Financial leverage**

Combined Leverage = Operating Leverage (OL) x Financial Leverage (FL)

$$2.5 = 2 \times \text{FL} \text{ Or, FL} = 1.25$$

$$\text{Financial Leverage} = 1.25$$

(ii) P/V Ratio and Earning per share (EPS)

$$\text{Operating leverage} = \frac{\text{Contribution (C)}}{\text{Contribution} - \text{Fixed Cost (FC)}} \times 100$$

$$2 = \frac{C}{C - 3,40,000} \text{ Or, } C = 2(C - 3,40,000)$$

$$\text{Or, } C = 2C - 6,80,000 \text{ Or, Contribution} = \text{Rs.}6,80,000$$

$$\text{Now, P/V ratio} = \frac{\text{Contribution (C)}}{\text{Sales(S)}} \times 100 = \frac{6,80,000}{50,00,000} \times 100 = 13.6\%$$

Therefore, R/V Ratio = 13.6%

$$\text{EBT} = \text{Sales} - \text{Variable Cost} - \text{Fixed Cost} - \text{Interest}$$

$$= \text{Rs.}50,00,000 - \text{Rs.}50,00,000 (1-0.136) - \text{Rs.}3,40,000 - (8\% \times \text{Rs.}30,25,000)$$

$$= \text{Rs.}50,00,000 - \text{Rs.}43,20,000 - \text{Rs.}3,40,000 - \text{Rs.}2,42,000$$

$$= \text{Rs.}98,000$$

$$\text{PAT} = \text{EBT} (1-T)$$

$$= \text{Rs.}98,000 (1-0.3) = \text{Rs.}68,600$$

$$\text{EPS} = \frac{\text{Profit after tax}}{\text{No. of equity shares}}$$

$$\text{EPS} = \frac{\text{Rs.}68,600}{3,40,000 \text{ shares}} = \text{Rs.}0.202$$

(iii) Assets turnover

$$\text{Assets turnover} = \frac{\text{Sales}}{\text{Total Assets}^*} = \frac{\text{Rs.}50,00,000}{\text{Rs.}34,00,000 + \text{Rs.}30,25,000} = 0.78$$

0.78 < 1.5 means lower than industry turnover.

*Total Asset = Equity share capital + 8% Debentures

(iv) EBT zero means 100% reduction in EBT. Since combined leverage is 2.5, sales have to be dropped by $100/2.5 = 40\%$. Hence new sales will be

$$\text{Rs. } 50,00,000 \times (100-40) \% = \text{Rs. } 30,00,000.$$

Therefore, at Rs. 30,00,000 level of sales, the Earnings before Tax (EBT) of the company will be zero.

Alternatively

Required sales when EBT is zero

$$= \frac{\text{Fixed Cost} + \text{Interest} + \text{desired Profit}}{\text{P/V Ratio}}$$

$$= \frac{\text{Rs. } 3,40,000 + \text{Rs. } 2,42,000 + \text{Zero}}{13.60\%}$$

$$= \frac{\text{Rs. } 5,82,000}{13.60\%}$$

$$= \text{Rs. } 42,79,412$$

[**Note:** The question can also be solved by first calculating EBIT with the help of Financial Leverage. Accordingly answer to the requirement (ii) and (iv) will also vary]

Answer 3:

Effective direct labour hours :

Permanent workmen= 9,60,000 hours

Apprentice workmen 50% of 80,000 hours 40,000 hours

10,00,000 hours

Sales per direct labour hour : Rs. 200 lakhs / 10,00,000 = Rs. 20

Loss of production hours :

For replacement = 20,000 hours

For apprentices = 40,000 hours

Total = 60,000 hours

Loss of potential sales for loss of production hrs :

$$= 60,000 \times \text{Rs. } 20 = \text{Rs. } 12,00,000$$

If there had been no labour turnover, sales would have been

$$= \text{Rs. } 2,00,00,000 + \text{Rs. } 12,00,000$$

$$= \text{Rs. } 2,12,00,000$$

Direct labour for 20,000 hrs. lost due to replacement

$$= (\text{Rs. } 40 \text{ lakhs}/10,40,000) \times 20,000 \text{ hrs.} = \text{Rs. } 76,923$$

Materials and variable overhead for Rs. 12 lakhs sales = $(110 \text{ lakhs}/200 \text{ lakhs}) \times 12 \text{ lakhs} = \text{Rs. } 6,60,000$.

Potential Profit with no labour turnover

Sales	<u>Rs. 2,12,00,000</u>
Less : Direct labour (40,00,000 + 76,923)	40,76,923
Direct material & Overheads (Rs, 1,10,00,000 + 6,60,000)	<u>1,16,60,000</u>
Total variable cost	<u>1,57,36,923</u>
Contribution	54,63,077
Less: Fixed cost	<u>10,00,000</u>
	44,63,077
Actual profit	<u>40,00,000</u>
Loss of profit due to labour turnover	<u>4,63,077</u>

Alternatively, this result can be found out by considering the differentials only

Loss of Sale	Rs. 12,00,000
Less : Variable cost	
Direct labour	76,923
Material & Overhead	<u>6,60,000</u> <u>7,36,923</u>
Loss of profit due to labour turnover	<u>4,63,077</u>

Note. If the hours had not been lost due to labour turnover, there would have been sales increase due to utilisation of these hours. This sales increase might have resulted in increase of material and overhead cost. At the same time there might have been increase in labour cost also for use of labour during these hours lost.

Answer 4:

Statement showing the apportionment of joint costs at the point of separation

Total cost up to point of separation	Rs. 1,36,000		
Less : Cost of By-products by working backward	M ₁	M ₂	
Sales realisation	Rs. 32,000	Rs. 48,000	
Less : Net profit			
(20% and 30% of Sales)	6,400	14,400	
Selling expenses (20% of sale)	6,400	9,600	
Cost after separation	<u>9,600</u>	<u>14,400</u>	
	<u>22,400</u>	38,400	
	9,600	9,600	<u>19,200</u>
Cost to be apportioned after split-off point			<u>1,16,800</u>

Comparative Profit and Loss Account

Details	A	M ₁	M ₂	Total
1. Sales Rs.	3,28,000	Rs. 32,000	Rs. 48,000	Rs. 4,08,000
2. Cost of Sales				
Pre-Separation cost	1,16,800	9,600	9,600	1,36,000
Post-Separation cost	—	9,600	14,400	24,000
Cost of production	1,16,800	19,200	24,000	1,60,000
Selling expenses	65,600	6,400	9,600	81,600
Cost of Sales	1,82,400	25,600	33,600	2,41,600
3. Profit (1-2)	1,45,600	6,400	14,400	1,66,400
4. Profit as a % of sales	44.4%	20%	30%	40.8%

Answer 5:

Before preparing Process III A/e process cost sheet should be prepared.

Process A Period

(FIFO Method)

Statement of Equivalent Production

Opening Stock 1,000 units

Introduced 42,600 pftits

Input		Output		Equivalent Production					
Item	Units	Item	Units	Material A		Material B		Labour & Overheads	
				Units	%	Units	%	Units	%
Op. stock	1,000	Normal loss	2,000	-	-	-	-	-	-
Process II transfer	42,600	Completed :							
		O/stock	1,000	-	-	300	30	500	50
		Introduced & completed	36,800	36,800	100	36,800	100	36,800	100
		Abnormal loss	200	200	100	200	100	160	80
		Closing stock	3,600	3,600	100	2,880	80	2,160	60
	43,600		43,600	40,600		40,180		39,620	

Statement of cost for each Element

Elements of cost	Cost Rs.	Equivalent Production Units	Cost per unit Rs.
Material A :			
Transfer from previous process	Rs.3,30,800		
Less value of normal scrap	6,000*		
Material B :	3,24,800	40,600	8
Added in the process	1,60,720	40,100	4

Direct Wages		79,240	39,620	2
Overhead		39,620	39,620	1
Total		6,04,380		

*Important Note : It is a convention that the scrap value of normal loss should be deducted from the cost of materials and more specifically where appropriate from the cost of materials input from the previous process.

Statement of Apportionment of Cost

Items	Elements	Equivalent production Units	Cost per unit Rs,	Cost Rs.	Total Rs.
O/Stock (For completion)	Material A	-	-	-	-
	Material B	300	4	1,200	-
	Wages	500	2	1,000	
	Overhead	500	1	500	2,700
Introduced and completed during the period	Material A	36,800	8	2,94,400	
	Material B	36,800	4	1,47,200	
	Wages	36,800	2	73,600	
	Overhead	36,800	1	36,800	5,52,000
Closing stock	Material A	3,600	8	28,800	
	Material B	2,880	4	11,520	
	Wages	2,160	2	4,320	
	Overhead	2,160	1	2,160	46,800
Abnormal loss	Material A	200	8	1,600	
	Material B	200	4	800	
	Wages	160	2	320	
	Overhead	160	1	160	2,880
	Total Cost				6,04,380

Process III Account

Details	Units	Amount	Details	Units	Amount
To Balance b/d	1,000	Rs.14,400	By Normal Loss	2,000	Rs.6,000
To Process II A/c	42,600	3,30,800	By Process IV A/c	37,800	5,69,100
Materials		1,60,720	By Abnormal loss	200	2,880
Wages		79,240	By C/Stock	3,600	46,800
Overhead		39,620			
	43,600	6,24,780		43,600	6,24,780

Note

- (i) Units processed during the period
= units transferred to process + Opening stock
- (ii) Production = Opening stock + Units introduced - Closing units
= 1,000 + 42,600 - 3,600 = 40,000
- (iii) Normal loss s= 5% of 40,000
- (iv) Cost of transfer to process (IV)

(a) Value of opening stock	14,400
(b) Cost incurred for completing the units representing O/stock during the period	2,700
(c) Cost for units introduced and completed during the period	<u>5,52,000</u>
	<u>5,69,100</u>

Answer 6:

(i) Actual production per week	(Pieces)	2,81,000
Standard production (250 pieces x 984)		<u>2,46,000</u>
Excess production over standard		<u>35,000</u>
Excess production as a percentage over standard production		
= (35,000 ÷ 2,46,000) x 100		= 14.228%
Each workman's share	$\frac{2}{3} \times 14.228 =$	9.485%
Bonus on notional hourly rate	Rs. 6 x 9.485% =	Re. 0.569
Amount of bonus	984 hrs. x Re. 0.569 =	Rs. 560

(ii) **Computation of wages:**

Ram Jadav

Basic wages: 48 hrs. x Rs. 2.50	Rs.120.00
Bonus: 48 hrs. x Re. 0.569	<u>27.31</u>
Total	<u>147.31</u>

Francis William

Basic Wages: 52 x Rs. 3	156.00
Bonus: 52 x Re. 0.569	<u>29.59</u>
Total	<u>185.59</u>