(GI-1, GI-2+4, GI-3, GI-5+6 & VDI-1, VI-1, SI-1)
DATE: 14.07.2020 **MAXIMUM MARKS: 100** **TIMING: 3¼ Hours**

PAPER : COSTING

Answer to questions are to be given only in English except in the case of candidates who have opted for Hindi Medium. If a candidate who has not opted for Hindi Medium. His/her answer in Hindi will not be valued.
Question No. 1 is compulsory.
Candidates are also required to answer any Four questions from the remaining Five Questions.
In case, any candidate answers extra question(s)/sub-question(s) over and above the required number, then only the requisite number of questions first answered in the answer book shall be valued and subsequent extra question(s) answered shall be ignored.
Wherever necessary, suitable assumptions may be made and disclosed by way of note.

Answer 1:

(a) (i) $\text{Break-even sales} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}}$ **{1 M}**

$\text{P/V Ratio} = \frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100$ or, $\frac{\text{Rs. } 37,50,000}{\text{Rs. } 7,80,60,000 - \text{Rs. } 5,93,10,000} \times 100$

Or, $\frac{\text{Rs. } 37,50,000}{\text{Rs. } 1,87,50,000} \times 100$ or, 20%

$\text{Break-even sales} = \frac{\text{Rs. } 98,50,000}{20\%} = \text{Rs. } 4,92,50,000$ **{1 M}**

(ii) Profit/ loss = Contribution – Fixed Cost **{1 M}**
= Rs. 8,20,00,000 × 20% - Rs. 98,50,000
= Rs. 1,64,00,000 – Rs. 98,50,000 = Rs. 65,50,000 **{1 M}**

(iii) To earn same amount of profit in 20X8-X9 as was in 20X7-X8, it has to earn the same amount of contribution as in 20X7-X8.
Sales – Variable cost = Contribution equal to 20X7-X8 contribution
Contribution in 20X7-X8 = Sales in 20X7-X8 × P/V Ratio in 20X7-X8
= Rs. 5,93,10,000 × 20% = Rs. 1,18,62,000
Let the number of units to be sold in 20X8-X9 = X
Sales in 20X8-X9 – Variable cost in 20X8-X9 = Desired Contribution
90 X – 80 X = Rs. 1,18,62,000
Or, 10 X = 1,18,62,000
Or, X = 11,86,200 units
Therefore, Sales amount required to earn a profit equals to 20X7-X8 profit
= Rs. 90 × 11,86,200 units = Rs. 10,67,58,000 **{1 M}**

Answer:

(b) (i) $\text{Optimum run size or Economic Batch Quantity (EBQ)} = \sqrt{\frac{2 \times D \times S}{C}}$ **{1 M}**

Where, D = Annual demand i.e. 1.15% of 8,00,00,000 = 9,20,000 units
S = Set-up cost per run = Rs. 3,500
C = Inventory holding cost per unit per annum
= Rs. 1.5 × 12 months = Rs. 18

$\text{EBQ} = \sqrt{\frac{2 \times 9,20,000 \text{ units} \times \text{Rs. } 3,500}{\text{Rs. } 18}} = 18,915 \text{ units}$ **{1 M}**

(ii) Calculation of Total Cost of set-up and inventory holding

	Batch size	No. of setups	Set-up Cost (Rs.)	Inventory holding cost (Rs.)	Total Cost (Rs.)	
A	40,000 units	23 $\left(\frac{9,20,000}{40,000}\right)$	80,500 (23 × Rs. 3,500)	3,60,000 $\left(\frac{40,000 \text{ x } Rs.18}{2}\right)$	4,40,500	**}{1 M}**
B	18,915 units It can be done in fraction	49 $\left(\frac{9,20,000}{18,915}\right)$	1,71,500 (49 × Rs. 3,500)	1,70,235 $\left(\frac{18,915 \text{ x } Rs.18}{2}\right)$	3,41,735	**}{1 M}**
				Extra Cost (A – B)	98,765	**}{1 M}**

Answer:

(c)

Cost Sheet
(for the quarter ending 30 September 2018)

	Amount (Rs.)	
(i) Raw materials consumed		**{1/4 Each x 20 point = 5 M}**
Opening stock of raw materials	2,45,600	
Add: Purchase of materials	12,22,650*	
Less: Closing stock of raw materials	(2,08,000)	
Raw materials consumed	12,60,250	
Add: Direct wages (1,47,000×175%)	2,57,250	
Direct Expenses	1,80,000	
(ii) Prime cost	16,97,500	
Add: Factory overheads (2,57,250/175%)	1,47,000	
Gross Factory cost	18,44,500	
Add: Opening work-in-process	1,70,800	
Less: Closing work-in-process	(1,90,000)	
(iii) Factory cost	18,25,300	
Add: Administration overheads (10% of factory overheads)	14,700	
Add: Opening stock of finished goods	3,10,000	
Less: Closing stock of finished goods	(2,75,000)	
(iv) Cost of goods sold	18,75,000	
Add: Selling & distribution overheads	60,000	
Cost of sales	19,35,000	
(v) Net Profit	2,75,000	
Sales	22,10,000	

*(18,75,000 + 2,75,000 – 3,10,000 – (1,47,000 × 10%) + 1,90,000 –1,70,800 – (2,57,250 × 100/175%) - 1,80,000 – 2,57,250 + 2,08,000 – 2,45,600) = 12,22,650

Working Notes:

Purchase of raw materials = Raw material consumed + Closing stock - opening stock of raw material

Raw material consumed = Prime cost - Direct wages - Direct expenses

Factory Overheads = 2,57,250*100/175

Prime cost = Factory cost + Closing WIP – Opening WIP – Factory overheads

Factory Cost = Cost of Production goods sold + Closing stock of Finished goods – Opening stock of finished goods – Administrative overheads

Net Profit = Sales - Cost of sales

Alternative solution

Cost Sheet
(for the quarter ending 30 September 2018)

		Amount (Rs.)
(i)	Raw materials consumed	
	Opening stock of raw materials	2,45,600
	Add: Purchase of materials	12,37,350*
	Less: Closing stock of raw materials	(2,08,000)
	Raw Material consumed	12,74,950
	Add: Direct wages (1,47,000×175%	2,57,250
	Direct Expenses	1,80,000
(ii)	Prime cost	17,12,,200
	Add: Factory overheads (2,57,250/175%)	1,47,000
	Gross Factory cost	18,59,200
	Add: Opening work-in-process	1,70,800
	Less: Closing work-in-process	(1,90,000)
(iii)	Factory cost/works cost/cost of production	18,40,000
	Add: Opening stock of finished goods	3,10,000
	Less: Closing stock of finished goods	(2,75,000)
(iv)	Cost of goods sold	18,75,000
	Add: Administration overheads (10% of factory overheads)	14,700
	Add: Selling & distribution overheads	60,000
	Cost of sales	19,49,700
(v)	Net Profit	2,60,300
	Sales	22,10,000

*(18,75,000 + 2,75,000 – 3,10,000 + 1,90,000 –1,70,800 – 1,47,500 - 1,80,000 – 2,57,250 + 2,08,000 – 2,45,600) = 12,37,350.

Working Notes:
Purchase of raw materials = Raw material consumed + Closing stock - opening stock of raw material
Raw material consumed = Prime cost - Direct wages - Direct expenses
Factory Overheads = 257250*100/175
Prime cost = Factory cost + Closing WIP – Opening WIP – Factory overheads
Factory Cost = Cost of Production goods sold + Closing stock of Finished goods – Opening stock of finished goods
Net Profit = Sales - Cost of sales

Answer:

(d) (i) Labour cost variance [(SH x Std. Rate) – (AH paid x AE)]

$$\left(\frac{\text{Rs. } 40\times\text{Rs. } 65}{\text{Rs. } 2{,}000}\times\text{Rs. } 1{,}800\right)\times\text{Rs. } 45-\text{Rs. } 50\times\text{Rs. } 40\times\text{Rs. } 50$$

= (Rs. 1,05,300 – Rs. 1,00,000) **{1 M}**
= Rs. 5,300(F)

Labour Rate Variance = AH paid (SR–AR)
= Rs. 2,000 (45-50) = Rs. 10,000 (A) **{1 M}**

Labour efficiency variance = SR (SH–AH worked)
= Rs. 45 (Rs. 2,340 – Rs. 1,900) = Rs. 19,800 (F) **{1 M}**

Idle time variance = SR x Idle time = Rs. 45 x 100 = Rs. 4,500 (A)

(ii) Reconciliation
Labour Cost Variance = Labour Rate Variance + Labour efficiency variance + Idle time variance **{1 M}**

OR

Rs. 10,000 (A) + Rs. 19,800 (F) + Rs. 4,500 (A) = Rs. 5,300(F) **{1 M}**

Answer 2:

(a) (i) Statement of Operating income and Operating income as a percentage of revenues for each product line

(When support costs are allocated to product lines on the basis of cost of goods sold of each product)

	Soft Drinks (Rs.)	Fresh Produce (Rs.)	Packaged Foods (Rs.)	Total (Rs.)	
Revenues: (A)	39,67,500	1,05,03,000	60,49,500	2,05,20,000	}{1/2 M}
Cost of Goods sold (COGS): (B)	30,00,000	75,00,000	45,00,000	1,50,00,000	}{1/2 M}
Support cost (30% of COGS): (C) (Refer working notes)	9,00,000	22,50,000	13,50,000	45,00,000	}{1/2 M}
Total cost: (D) = {(B) + (C)}	39,00,000	97,50,000	58,50,000	1,95,00,000	}{1/2 M}
Operating income: E= {(A)-(D)}	67,500	7,53,000	1,99,500	10,20,000	}{1/2 M}
Operating income as a percentage of revenues: (E/A) × 100)	1.70%	7.17%	3.30%	4.97%	}{1/2 M}

Working notes:

1. Total support cost:

	(Rs.)	
Bottles returns	60,000	
Ordering	7,80,000	
Delivery	12,60,000	
Shelf stocking	8,64,000	
Customer support	15,36,000	
Total support cost	45,00,000	}{1 M}

2. Percentage of support cost to cost of goods sold (COGS):

$$= \frac{\text{Total support cost}}{\text{Total cost of goods sold}} \text{ x } 100$$

$$= \frac{\text{Rs. } 45,00,000}{\text{Rs. } 1,50,00,000} \text{ x } 100 = 30\% \text{ }\}\{1^{1/2} \text{ M}\}$$

3. Cost for each activity cost driver:

Activity (1)	Total cost (Rs.) (2)	Cost allocation base (3)	Cost driver rate (4) = [(2) ÷ (3)]	
Ordering	7,80,000	1,560 purchase orders	Rs. 500 per purchase order	}{1/2 M}
Delivery	12,60,000	3,150 deliveries	Rs. 400 per delivery	}{1/2 M}
Shelf-stocking	8,64,000	8,640 hours	Rs. 100 per stocking hour	}{1/2 M}
Customer support	15,36,000	15,36,000 items sold	Rs. 1 per item sold	}{1/2 M}

(ii) Statement of Operating income and Operating income as a percentage of revenues for each product line

(When support costs are allocated to product lines using an activity -based costing system)

	Soft drinks (Rs.)	Fresh Produce (Rs.)	Packaged Food (Rs.)	Total (Rs.)	
Revenues: (A)	39,67,500	1,05,03,000	60,49,500	2,05,20,000	}{1/4 M}
Cost & Goods sold	30,00,000	75,00,000	45,00,000	1,50,00,000	}{1/4 M}
Bottle return costs	60,000	0	0	60,000	}{1/4 M}
Ordering cost* (360:840:360)	1,80,000	4,20,000	1,80,000	7,80,000	}{1/4 M}

Delivery cost* (300:2190:660)	1,20,000	8,76,000	2,64,000	12,60,000	**}{1/4 M}**
Shelf stocking cost* (540:5400:2700)	54,000	5,40,000	2,70,000	8,64,000	**}{1/4 M}**
Customer Support cost* (1,26,000:11,04,000:3,06,000)	1,26,000	11,04,000	3,06,000	15,36,000	**}{1/4 M}**
Total cost: (B)	35,40,000	1,04,40,000	55,20,000	1,95,00,000	**}{1/4 M}**
Operating income C: {(A)- (B)}	4,27,500	63,000	5,29,500	10,20,000	**}{1/4 M}**
Operating income as a % of revenues	10.78%	0.60%	8.75%	4.97%	**}{1/4 M}**

* Refer to working note 3

Answer:

(b) (a) Overhead Distribution Statement

	Production Departments		**Service Departments**	
	Machine Shops	**Packing**	**General Plant**	**Stores**
Allocated Overheads:	**(Rs.)**	**(Rs.)**	**(Rs.)**	**(Rs.)**
Indirect labour	8,000	6,000	4,000	11,000
Maintenance Material	3,400	1,600	2,100	2,800
Misc. supplies	1,500	2,900	900	600
Supervisor's salary	--	--	16,000	--
Cost & payroll salary	--	--	80,000	--
Total allocated overheads	12,900	10,500	1,03,000	14,400
Add: Apportioned Overheads (As per Schedule below)	1,84,350	70,125	22,775	73,150
	1,97,250	80,625	1,25,775	87,550
	{1 M}	**{1 M}**	**{1 M}**	**{1 M}**

Schedule of Apportionment of Overheads

Item of Cost	**Basis**	**Production Departments**		**Service Departments**		
		Machine Shops (Rs.)	**Packing (Rs.)**	**General Plant (Rs.)**	**Stores (Rs.)**	
Power	HP hours (7 : 1 : - : 2)	54,600	7,800	--	15,600	**}{1/2 M}**
Rent	Floor space (5 : 2 : 1 : 4)	30,000	12,000	6,000	24,000	**}{1/2 M}**
Fuel & Heat	Radiator sec. (3 : 6 : 2 : 4)	12,000	24,000	8,000	16,000	**}{1/2 M}**
Insurance	Investment (10 : 3 : 1 : 2)	7,500	2,250	750	1,500	**}{1/2 M}**
Taxes	Investment (10 : 3 : 1 : 2)	5,250	1,575	525	1,050	**}{1/2 M}**
Depreciation	Investment (10 : 3 : 1 : 2)	75,000	22,500	7,500	15,000	**}{1/2 M}**
		1,84,350	70,125	22,775	73,150	

(b) Re-distribution of Overheads of Service Departments to Production Departments:

Let, the total overheads of General Plant = 'a' and the total overheads of Stores = 'b'

a = 1,25,775 + 0.3b……(i)

b = 87,550 + 0.2a……(ii)

Putting the value of 'b' in equation no. (i)

a = 1,25,775 + 0.3 (87,550 + 0.2a)

Or a = 1,25,775 + 26,265 + 0.06a

Or 0.94a = 1,52,040 Or a = 1,61,745 (appx.) **}{1 M}**

Putting the value of a = 1,61,745 in equation no. (ii) to get the value of 'b'

b = 87,550 + 0.2 × 1,61,745 = 1,19,899 **}{1 M}**

Secondary Distribution Summary

Particulars	Total (Rs.)	Machine Shops (Rs.)	Packing (Rs.)
Allocated and Apportioned overheads as per Primary distribution	2,77,875	1,97,250.00	80,625.00
- General Plant	1,61,745	80,872.50 $(1,61,745 \times \frac{5}{10})$	48,523.50 $(1,61,745 \times \frac{3}{10})$
- Stores	1,19,899	59,949.50 (1,19,899 × 50%)	23,979.80 (1,19,899 × 20%)
		3,38,072.00	1,53,128.30
		{1/2 M}	**{1/2 M}**

Answer 3:

(a) (i) Calculation of Raw Material inputs during the month:

Quantities Entering Process	Litres	Quantities Leaving Process	Litres
Opening WIP	800	Transfer to Finished Goods	4,200
Raw material input (balancing figure)	5,360	Process Losses	1,800
		Closing WIP	160
	6,160		6,160

{2 M}

(ii) Calculation of Normal Loss and Abnormal Loss/Gain

	Litres
Total process losses for month	1,800
Normal Loss (10% input)	536
Abnormal Loss (balancing figure)	1,264

{1 M}

(i) Calculation of values of Raw Material, Labour and Overheads added to the process:

	Material	Labour	Overheads
Cost per equivalent unit	Rs. 23.00	Rs. 7.00	Rs. 9.00
Equivalent units (litre) (refer the working note)	4,824	4,952	5,016
Cost of equivalent units	Rs. 1,10,952	Rs. 34,664	Rs. 45,144
Add: Scrap value of normal loss (536 units × Rs. 15)	Rs. 8,040	--	--
Total value added	**Rs. 1,18,992**	**Rs. 34,664**	**Rs. 45,144**

{$2^{1/2}$ M}

Workings:

Statement of Equivalent Units (litre):

Input Details	Units	Output details	Units	Equivalent Production					
				Material		Labour		Overheads	
				Units	(%)	Units	(%)	Units	(%)
Opening WIP	800	Units completed:							
Units introduced	5,360	- Opening WIP	800	--	--	240	30	320	40
		- Fresh inputs	3,400	3,400	100	3,400	100	3,400	100
		Normal loss	536	--	--	--	--	--	--
		Abnormal loss	1,264	1,264	100	1,264	100	1,264	100
		Closing WIP	160	160	100	48	30	32	20
	6,160		6,160	4,824		4,952		5,016	

{$2^{1/2}$ M}

(iv) Process Account for Month

	Litres	Amount (Rs.)		Litres	Amount (Rs.)
To Opening WIP	800	26,640	By Finished goods	4,200	1,63,800
To Raw Materials	5,360	1,18,992	By Normal loss	536	8,040
To Wages	--	34,664	By Abnormal loss	1,264	49,296
To Overheads	--	45,144	By Closing WIP	160	4,304
	6,160	2,25,440		6,160	2,25,440

{2 M}

Answer:

(b) (i) **Annual Cost Statement of three vehicles**

	(Rs.)
Diesel {(1,34,784 km. ÷ 4 km) × Rs. 65) (Refer to Working Note 1)	21,90,240
Oil & sundries {(1,34,784 km. ÷ 100 km.) × Rs. 250}	3,36,960
Maintenance {(1,34,784 km. × Rs. 0.25) + Rs. 6,000} (Refer to Working Note 2)	39,696
Drivers' salary {(Rs.24,000 × 12 months) × 3 trucks}	8,64,000
Licence and taxes (Rs. 25,000 × 3 trucks)	75,000
Insurance	45,000
Depreciation {(Rs. 29,00,000 ÷ 10 years) × 3 trucks}	8,70,000
General overhead	1,15,600
Total annual cost	45,36,496

}{3 M}

(ii) **Cost per km. run**

$$\text{Cost per kilometer run} = \frac{\text{Total annual cost of vehicles}}{\text{Total kilometre travelled annually}} \quad \text{(Refer to working Note 1)}$$

$$= \frac{\text{Rs. } 45,36,496}{1,34,784 \text{ Kms}} = \text{Rs. } 33.66 \quad \textbf{}\{2 \text{ M}\}$$

(iii) **Freight rate per tonne km (to yield a profit of 10% on freight**

$$\text{Cost per tonne km} = \frac{\text{Total annual cost of three vehicles}}{\text{Total effective tonnes kms. per annum}} \quad \text{(Refer to working Note 1)}$$

$$= \frac{\text{Rs. } 45,36,496}{6,06,528 \text{ Kms}} = \text{Rs. } 7.48$$

$$\text{Freight rate per tonne km.} \left(\frac{\text{Rs. } 7.48}{0.9} \right) \times 1 = \text{Rs. } 8.31 \quad \textbf{}\{2 \text{ M}\}$$

Working Notes:

1. Total kilometer travelled and Commercial tonnes kilometer (load carried) by three trucks in one year

Truck	One way distance in kms	No. of trips	Total distance covered in km per day (with load)	Total distance covered in km per day (up & down)	Load carried per trip / day in tonnes	Total effective tonnes km
	a	b	c = a × b	d = c × 2	e	f = 27/3 ×c
1	16	4	64	128	6	576
2	40	2	80	160	9	720
3	30	3	90	180	12	810
Total			234	468	27	2,106

Total kilometre travelled by three trucks in one year
(468 km. × 24 days ×12 months) =1,34,784 **}{1 M}**
Total effective tones kilometre of load carried by three trucks during one year

(2,106 tonnes km. × 24 days × 12 months) = 6,06,528 tonne-km

2. Fixed and variable component of maintenance cost:

$$\text{Variable maintenance cost per km.} = \frac{\text{Difference in maintenance cost}}{\text{Difference in distance travelled}}$$

$$= \frac{\text{Rs. } 46{,}050 - \text{Rs. } 45{,}175}{1{,}60{,}200\text{kms} - 1{,}56{,}700\text{kms}} = \text{Rs. } 0.25$$ **}{1 M}**

Fixed maintenance cost =Total maintenance cost–Variable maintenance cost
= Rs. 46,050 – 1,60,200 kms × Rs. 0.25= Rs. 6,000 **}{1 M}**

Answer 4:

(a) 1. (a) **Sales value at split- off point method**

Products	**Sales (in Ton)**	**Selling Price per Ton (Rs.)**	**Sales Revenue (Rs.)**	**Joint Cost Apportioned (Rs.)**	
Caustic Soda	1,200	50	60,000	50,000	**}{1/2 M}**
Chlorine	800	75	60,000	50,000	**}{1/2 M}**
			1,20,000	1,00,000	

Apportionment of joint cost $\frac{\text{Total joint cost}}{\text{Total sale value}}$ = x Sale revenue of each product

Joint cost apportioned to Caustic Soda

$= \frac{\text{Rs. } 1{,}00{,}000}{\text{Rs. } 1{,}20{,}000}$ x Rs. 60,000 = Rs. 50,000 **}{1/2 M}**

Joint cost apportioned to Chlorine $= \frac{\text{Rs. } 1{,}00{,}000}{\text{Rs. } 1{,}20{,}000}$ x Rs. 60,000 = Rs. 50,000 **}{1/2 M}**

(b) **Physical measure method**

Products	**Sales (in Ton)**	**Joint Cost Apportioned (Rs.)**	
Caustic Soda	1,200	60,000	**}{1/2 M}**
Chlorine	800	40,000	**}{1/2 M}**
		1,00,000	

Appointed joint cost = $\frac{\text{Total joint cost}}{\text{Total physical value}}$ x Physical units of each product

Joint cost apportioned to Caustic Soda

$= \frac{\text{Rs. } 1{,}00{,}000}{\text{Rs. } 1{,}20{,}000}$ x 1,200 ton = Rs. 60,000 **}{1 M}**

Joint cost apportioned to chlorine

$= \frac{\text{Rs. } 1{,}00{,}000}{2{,}000 \text{ ton}}$ x 800 ton = Rs. 40,000 **}{1 M}**

(c) **Estimated net realizable value method:**

	Caustic Soda Amount (Rs.)	**Chlorine Amount (Rs.)**
Sales Value	60,000 (Rs. 50 × 1,200 tons)	1,00,000 (Rs. 200 × 500 tons)
Less: Post split-off cost (Further processing cost)	-	(20,000)
Net Realisable Value	60,000	80,000
Apportionment of Joint Cost of Rs. 1,00,000 in ratio of 3:4	**{1/2 M}{** 42,857	**{1/2 M}{** 57,143

2. Incremental revenue from further processing of Chlorine into PVC

(500 tons × Rs. 200 – 800 tons × Rs. 75)	Rs. 40,000	**}{1 M}**
Less : Incremental cost of further processing of Chlorine into PVC	Rs. 20,000	**}{1 M}**
Incremental operating income from further processing	Rs. 20,000	**}{1 M}**

The operating income of Inorganic Chemicals will be reduced by Rs. 20,000 in August if it sells 800 tons of Chlorine to Lifetime Swimming Pool Products, instead of further processing of Chlorine into PVC for sale. **}{1 M}**

Answer :

(b) **Contract Account**

Particulars	**(Rs.)**	**Particulars**	**(Rs.)**	
To Material issued	9,48,000	By Machine (Working note 1)**	7,45,270	
″ Direct Wages (4,57,200 – 1,08,000)	3,49,200			
″ Administrative charges	7,20,000			
″ Supervisor's salary (Rs. 50,000 × 9 × 2/3)	3,00,000			
″ Machine**	7,85,270	″ Works cost (balancing figure)	23,57,200	
	31,02,470		31,02,470	
″ Works cost	23,57,200	″ Value of work certified (50%×42,00,000)	21,00,000	**}{1 M}**
″ Costing P&L A/c (Notional profit) **{4 M}**	3,32,100	″ Cost of work uncertified (Working Note 2)	5,89,300	**}{1 M}**
	26,89,300		26,89,300	

** Alternatively Depreciation on machine can be shown debit side of Contract Account.

Working notes:

1. Written down value of Machine:

$$\text{Depreciation} = \frac{\text{Rs. } 7,85,270 - \text{Rs. } 75,000}{9 \text{ years}} \times \frac{185 \text{days}}{365 \text{days}} = \text{Rs. } 40,000$$ **}{2 M}**

Hence the value of machine after the period of 185 days = Rs. 7,85,270 – Rs. 40,000 = Rs. 7,45,270

2. The cost of 2/3rd of the contract is Rs. 23,57,200

$\therefore$ Cost of 100% " " " " $\frac{\text{Rs. } 23,57,200}{2} \times 3 = \text{Rs. } 35,35,800$ **}{2 M}**

$\therefore$ Cost of 50% of the contract which has been certified by the architect is Rs. 17,67,900. Also, the cost of 1/6th (2/3 – 1/2) of the contract, which has been completed but not certified by the architect is Rs. 5,89,300.

Answer 5:

(a) (i) (a) Production Budget (in units) for the year ended 31st March 2018

	Product A	**Product B**
Budgeted sales (units)	36,000	16,700
Add: Increase in closing stock	860	400
No. of good units to be produced	36,860	17,100
Post production rejection rate	3%	5%
No. of units to be produced	38,000	18,000
	$\left(\frac{36,860}{0.97}\right)$	$\left(\frac{17,100}{0.95}\right)$

{3 M}

(b) Purchase budget (in kgs and value) for Material C

	Product A	**Product B**
No. of units to be produced	38000	18000
Usage of Material C per unit of production	4 kg.	5 kg.
Material needed for production	1,52,000 kg.	90,000 kg.
Materials to be purchased	1,60,000 kg.	93,750 kg.
	$\left(\frac{1,52,000}{0.95}\right)$	$\left(\frac{90,000}{0.96}\right)$
Total quantity to be purchased		2,53,750 kg.
Rate per kg. of Material C		Rs. 45
Total purchase price		Rs. 1,14,18,750

{3 M}

(ii) Calculation of Economic Order Quantity for Material C

$$EOQ = \sqrt{\frac{2 \times 2,53,750 \times Rs.\ 250}{45 \times 9\%}} = \sqrt{\frac{12,68,75,000}{4.05}} = 5.597 \text{ kg. (Approx)}$$

{2 M}

Answer:

(b) Statement of Reconciliation

Sl.No.	**Particulars**	**Amount (Rs.)**	**Amount (Rs.)**
	Net loss as per Cost Accounts		(35,400)
	Additions		
1.	FactoryO/H over recovered	1,35,000	**}{1/2 M}**
2.	Dividend Received	20,000	**}{1/2 M}**
3.	Bank Interest received	13,600	**}{1/2 M}**
4.	Difference in Value of Opening Stock (1,65,000 – 1,45,000)	20,000	**}{1/2 M}** **}{1/2 M}**
5.	Difference in Value of Closing Stock (1,32,000 – 1,25,500)	6,500	
6.	Notional Rent of own Premises	60,000	**}{1/2 M}** 2,55,100
	Deductions		
1.	Administration O/H under recovered	25,500	**}{1/2 M}**
2.	Depreciation under charged	26,000	**}{1/2 M}**
3.	Loss due to obsolescence	16,800	**}{1/2 M}**
4.	Income tax Provided	43,600	**}{1/2 M}**
5.	Goodwill written-off	25,000	**}{1/2 M}**
6.	Provision for doubtful debts	15,000	**}{1/2 M}** (1,51,900)
	Net Profit as per Financial A/c.		67,800

Answer:

(c) Calculation of Cost of Production and Profit for the month ended April 2018:

Particulars	**Amount (Rs.)**	**Amount (Rs.)**	
Materials consumed:			
- Opening stock	6,06,000		
- Add: Purchases	28,57,000		
	34,63,000		
- Less: Closing stock	(7,50,000)	27,13,000	
Direct wages		37,50,000	
Prime cost		64,63,000	**}{1 M}**
Factory expenses		21,25,000	
		85,88,000	
Add: Opening W-I-P		12,56,000	
Less: Closing W-I-P		(14,22,000)	**}{1 M}**
Factory cost		84,22,000	
Less: Sale of scrap		(26,000)	
Cost of Production		83,96,000	**}{1 M}**
Add: Opening stock of finished goods		6,06,000	
Less: Closing stock of finished goods		(3,59,000)	
Cost of Goods Sold		86,43,000	**}{1 M}**
Office and administration expenses		10,34,000	
Selling and distribution expenses		7,50,000	
Cost of Sales		1,04,27,000	**}{1 M}**
Profit (balancing figure)		29,73,000	**}{1 M}**
Sales		1,34,00,000	

Answer 6:

(a) Controllable costs and Uncontrollable costs: Cost that can be controlled, typically by a cost, profit or investment centre manager is called controllable cost. Controllable costs incurred in a particular responsibility centre can be influenced by the action of the executive heading that responsibility centre.
Costs which cannot be influenced by the action of a specified member of an undertaking are known as uncontrollable costs. **}{5 M}**

Answer:

(b) Cost plus contract: Under cost plus contract, the contract price is ascertained by adding a percentage of profit to the total cost of the work. Such types of contracts are entered into when it is not possible to estimate the contract cost with reasonable accuracy due to unstable condition of material, labour services etc.
Following are the advantages of cost plus contract:

(i) The contractor is assured of a fixed percentage of profit. There is no risk of incurring any loss on the contract.

(ii) It is useful specially when the work to be don is not definitely fixed at the time of making the estimate.

(iii) Contractee can ensure himself about the 'cost of contract' as he is empowered to examine the books and documents of the contractor to ascertain the veracity of the cost of contract. **}{5 M}**

Answer:

(c) In integrated accounting system cost and financial accounts are kept in the same set of books. Such a system will have to afford full information required for Costing as well as for Financial Accounts. In other words, information and data should be recorded in such a way so as to enable the firm to ascertain the cost (together with the necessary analysis) of each product, job, process, operation or any other identifiable activity. It also ensures the ascertainment of marginal cost, variances, abnormal losses and gains. In fact all information that management requires from **}{5 M}**

a system of Costing for doing its work properly is made available. The integrated accounts give full information in such a manner so that the profit and loss account and the balance sheet can be prepared according to the requirements of law and the management maintains full control over the liabilities and assets of its business.

Since, only one set of books are kept for both cost accounting and financial accounting purpose so there is no necessity of reconciliation of cost and financial accounts.

Answer:

(d) The impact of IT in cost accounting may include the followings:

(i) After the introduction of ERPs, different functional activities get integrated and as a consequence a single entry into the accounting system provides custom made reports for every purpose and saves an organisation from preparing different sets of documents. Reconciliation process of results of both cost and financial accounting systems become simpler and less sophisticated.

(ii) A move towards paperless environment can be seen where documents like Bill of Material, Material Requisition Note, Goods Received Note, labour utilisation report etc. are no longer required to be prepared in multiple copies, the related department can get e-copy from the system.

(iii) Information Technology with the help of internet (including intranet and extranet) helps in resource procurement and mobilisation. For example, production department can get materials from the stores without issuing material requisition note physically. Similarly, purchase orders can be initiated to the suppliers with the help of extranet. This enables an entity to shift towards Just-in-Time (JIT) approach of inventory management and production.

(iv) Cost information for a cost centre or cost object is ascertained with accuracy in timely manner. Each cost centre and cost object is codified and all related costs are assigned to the cost object or cost centre. This process automates the cost accumulation and ascertainment process. The cost information can be customised as per the requirement. For example, when an entity manufacture or provide services, it can know information job-wise, batch-wise, process-wise, cost centre wise etc.

(v) Uniformity in preparation of report, budgets and standards can be achieved with the help of IT. ERP software plays an important role in bringing uniformity irrespective of location, currency, language and regulations.

(vi) Cost and revenue variance reports are generated in real time basis which enables the management to take control measures immediately.

(vii) IT enables an entity to monitor and analyse each process of manufacturing or service activity closely to eliminate non value added activities.

The above are examples of few areas where Cost Accounting is done with the help of IT. **{5 M}**

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