Solutions

Q. 2. (i) Monthly Demand = 250 units

Ordering Cost = ₹120 per unit

Carrying Cost = ₹16 per unit per annum

EOQ = $\sqrt{2AO}$

Annual Demand (A) = 250 × 12 × 2 kg = 6,000 units

EOQ = $\sqrt{\frac{2 \times 6,000 \times 120}{16}}$ = 300 units

No. of orders per year = $\frac{6,000}{300}$ = 20 orders

Total Relevant Cost = Ordering Cost + Carrying Cost

Ordering Cost = 20 × ₹120 = ₹2,400

Carrying Cost = $300 \times \frac{1}{2} \times$ ₹16 = ₹2,400

Relevant Cost = ₹2,400 + ₹2,400 = ₹4,800

(ii) New Relevant Cost with New EOQ:

EOQ = $\sqrt{\frac{2 \times 6,000 \times 60}{18}}$ = 200 units

No. of orders	=	6,000/200	=	30 Orders
Ordering Cost	=	30 × ₹60	=	₹1,800
Carrying Cost	=	$200 \times \frac{1}{2} \times$ ₹18	=	₹1,800
Relevant Cost			=	3,600

Calculation of Prediction error if solution of part (i) has been implemented for one year:

Ordering Cost $\left(\frac{6,000}{300} \times ₹60\right)$	₹1,200
Carrying Cost $\left(300 \times \frac{1}{2} \times 18\right)$	₹2,700
Relevant Cost	₹3,900

Cost of error due to prediction = ₹3,900 – ₹3,600 = ₹300

Q. 3.

Actual Overheads incurred	₹55,00,000
Absorbed Overheads (₹250 × 20,000 man-days)	₹50,00,000
Unabsorbed Overheads	₹5,00,000

40% of unabsorbed overheads which is due to defective planning should be charged to Costing Profit and Loss Account. The remaining 60% should be adjusted to Cost of Sales and Closing Stock in the ratio of units sold, units held in stock and closing WIP.

	₹
Charge to Costing Profit and Loss Account (40% of ₹5,00,000)	2,00,000
Rest of the unabsorbed Overheads (60% of ₹5,00,000)	3,00,000
Adjustment to Cost of Sales $\left(₹3,00,000 \times \frac{25,000 \text{ units}}{30,000 \text{ units}}\right)$	2,50,000

Adjustment to Closing Stock $\left(₹3,00,000 \times \frac{2,500 \text{ units}}{30,000 \text{ units}}\right)$ 25,000

Adjustment to Closing WIP $\left(₹3,00,000 \times \frac{2,500 \text{ units}}{30,000 \text{ units}}\right)$ 25,000

Working Notes:

1. Total number of Effective Units = Units Sold + Closing Stock Units + Closing WIP Units
   = 25,000 + 2,500 + (50% × 5,000) = 30,000 units

2. Supplementary Rate = $\frac{₹\ 3,00,000}{30,000}$ = ₹ 10 per unit.

Q. 4.

Contract Account

for the year ending 31st December, 2019

Particulars	₹	Particulars		₹
To Stores & Materials A/c	3,70,000	By Sale of Materials A/c (Cost ₹60,000)		58,000
To Wages A/c	3,50,000	By Loss on Sale of Materials A/c		2,000
To Plant and Tools A/c	1,20,000	By Work-in-Progress:		
To Sundry Expenses A/c	27,000	Work Certified	10,00,000	
To Establishment Charges A/c	60,000	Work Uncertified	1,10,000	11,10,000
To Notional Profit c/d	3,01,000	By Plant on Hand A/c		40,000
		By Stores and Materials on Hand A/c		18,000
	12,28,000			12,28,000
To Profit and Loss A/c	70,000	By Notional Profit b/d		3,01,000
To Reserve A/c	2,31,000			
	3,01,000			3,01,000

Working Notes:

1. Work Certified = ₹8,00,000 × $\frac{100}{80}$ = ₹10,00,000.

2. *Calculation of Estimated Profit:*

   Actual Cost incurred up to 31st December, 2019

   = ₹3,70,000 + ₹3,50,000 + ₹1,20,000 + ₹27,000 + ₹60,000 – ₹58,000 – ₹40,000 – ₹18,000 – ₹2,000 = ₹8,09,000.

Add: Estimated further expenses:		₹
Wages	3,50,000	
Materials (₹18,000 + ₹3,50,000)	3,68,000	
Sundry Expenses	25,000	
Plant and Tools (₹40,000 + ₹1,25,000 – ₹15,000)	1,50,000	
Establishment Expenses $\left(\frac{₹60,000}{12} \times 10\right)$	50,000	9,43,000
		17,52,000
Add: Provision for Contingencies $\left(4\% \text{ on Total Cost} = \frac{₹17,52,000 \times 4}{96}\right)$		73,000
Estimated Total Cost		18,25,000
Contract Price		20,00,000
Less: Estimated Total Cost		18,25,000
Estimated Total Profit		1,75,000

3. Profit Transferred to P&L A/c = Estimated Total Profit × $\frac{\text{Work Certified}}{\text{Contract Price}} \times \frac{\text{Cash Received}}{\text{Work Certified}}$

$$= ₹1,75,000 \times \frac{₹10,00,000}{₹20,00,000} \times \frac{80}{100} = ₹70,000$$

Balance Sheet (Extracts)
as on 31st October, 2020

Liabilities		₹	Assets		₹
Profit and Loss A/c:			Materials at site		18,000
Profit on Contract	70,000		Plant at site		40,000
Less: Loss on Sale of Materials	(2,000)	68,000	Work-in-Progress:		
			Work Certified	10,00,000	
			Add: Work Uncertified	1,10,000	
				11,10,000	
			Less: Reserve	(2,31,000)	
				8,79,000	
			Less: Cash Received	(8,00,000)	79,000

Q. 5.

Process A Account

Particulars	Unit	₹	Particulars	Unit	₹
To Units Introduced A/c	8,000	8,96,000	By Normal Loss A/c (5% of 8,000 @ ₹50 per unit)	400	20,000
To Material Cost A/c		1,46,500	By Abnormal Loss A/c	100	17,163
To Labour Cost A/c		1,18,800	By Process B A/c @ ₹171.6316 per unit	7,500	12,87,237
To Electric Power A/c		44,300			
To Manufacturing Expenses A/c		1,18,800			
	8,000	13,24,400		8,000	13,24,400

Process B Account

Particulars	Unit	₹	Particulars	Unit	₹
To Process A A/c	7,500	12,87,237	By Normal Loss A/c (4% of 7,500 @ ₹62 per unit)	300	18,600
To Material Cost A/c		1,04,580	By Finished Stock A/c	7,240	15,87,608
To Labour Cost A/c		79,200			
To Electric Power A/c		47,220			
To Manufacturing Expenses A/c		79,200			
To Abnormal Gain/Effectiveness A/c	40	8,771			
	7,540	16,06,208		7,540	16,06,208

Abnormal Loss Account

Particulars	Unit	₹	Particulars	Unit	₹
To Process A A/c	100	17,163	By Sales of Scrap A/c (100 Units @ ₹50 per unit)	100	5,000
			By Costing Profit and Loss A/c (Bal. Fig.)		12,163
	100	17,163		100	17,163

Abnormal Effectiveness Account

Particulars	Unit	₹	Particulars	Unit	₹
To Normal Loss A/c	40	2,480	By Process B A/c	40	8,771
To Costing Profit and Loss A/c		6,291			
	40	8,771		40	8,771

Normal Loss Account

Particulars	Unit	₹	Particulars	Unit	₹
To Process A A/c	400	20,000	By Cash A/c (A)	400	20,000
To Process B A/c	300	18,600	By Cash A/c (B)	260	16,120
			By Abnormal Gain A/c	40	2,480
	700	38,600		700	38,600

Working Notes:

1. *Value of Abnormal Loss in Process A:*

$$= \frac{₹13,24,400 - ₹20,000}{8,000 \text{ units} - 400 \text{ units}} \times 100 \text{ units}$$

= ₹17,163

2. *Value of Abnormal Gain/Effectiveness in Process B:*

$$= \frac{₹15,97,437 - ₹18,600}{7,500 \text{ units} - 300 \text{ units}} \times 40 \text{ units}$$

= ₹8,771

Q. 6. **Statement of Cost and Profit**
for the year ending 31st March, 2020

Particulars		₹
Raw Materials Consumed:		
Opening Stock of Raw Material	50,000	
Add: Purchases of Raw Material	3,50,000	
Raw Materials available for use	4,00,000	
Less: Closing Stock of Raw Material	(75,000)	3,25,000
Add: Direct Wages		1,50,000
	Prime Cost	4,75,000
Add: Factory Overheads (20% x Prime Cost)		95,000
Add: Office & Administrative Overheads (50% of Factory Overheads)		47,500
	Factory Cost/Cost of Production	6,17,500
Add: Opening Stock of Finished Goods		1,50,000
		7,67,500
Less: Closing Stock of Finished Goods		(50,000)
	Cost of Sales	7,17,500
Add: Profit (25% x Total Cost)		1,79,375
	Sales	8,96,875

Reconciliation Statement

Particulars	₹	₹
Profit as per Financial Accounts		1,35,525
Add: Under-recovery of Factory Overheads in Cost Accounts (₹1,35,750 – ₹95,000)	40,750	
Donation Not charged	10,000	50,750
		1,86,275
Less: Over-recovery of Office Overheads in Cost Accounts (₹47,500 – ₹40,600)		(6,900)
Profit as per Cost Accounts		1,79,375

Working Notes:

1. Prime Cost = Opening Stock + Purchase of Raw Materials – Closing Stock of Raw Material + Direct Wages

   = ₹50,000 + ₹3,50,000 – ₹75,000 + ₹1,50,000

   = ₹4,75,000.

2. Factory Overhead = 20% of Prime Cost

   $= \frac{20}{100} \times 4,75,000 = ₹95,000.$

3. Office and Administrative Overhead = 50% of Factory Overhead

   $= \frac{50}{100} \times 9,500 = ₹47,500.$

4. Profit = 25% of Total Cost

   $= ₹7,17,500 \times \frac{25}{100} = ₹1,79,375.$

5. Administration overheads are assumed to be related to production. This solution is as per Cost Accounting Standards.