Solutions

Q. 2. (a) **Average Number of Workers**

$$= \frac{\text{No. of Workers in the beginning + No. of Workers at the end}}{2}$$

$$= \frac{9{,}500 + 10{,}500}{2} = 10{,}000 \text{ workers}$$

(i) **Labour Turnover Rate (Separation Method)** $= \frac{\text{No. of Workers Separated}}{\text{Average No. of Workers}} \times 100$

$$= \frac{200 + 200}{10{,}000} \times 100 = \frac{400}{10{,}000} \times 100 = 4\%$$

(ii) **Labour Turnover Rate (Replacement Method)** $= \frac{\text{No. of Workers Replaced}}{\text{Average No. of Workers}} \times 100$

$$= \frac{200}{10{,}000} \times 100 = 2\%$$

Working Note: *No. of workers due to expansion scheme have been excluded i.e., 1,700 – 1,500 = 200.*

(iii) **Labour Turnover Rate (Flux Method)**

$$= \frac{\text{No. of Workers Left + No. of Workers Replaced}}{\text{Average No. of Workers}} \times 100$$

$$= \frac{400 + 200}{10{,}000} \times 100 = \frac{600}{10{,}000} \times 100 = 6\%$$

(b) **Stores Ledger Account**
(FIFO Method)

Date	Receipts			Issues			Balance		
	Qty. (Units)	Rate (₹)	Amt. (₹)	Qty. (Units)	Rate (₹)	Amt. (₹)	Qty. (Units)	Rate (₹)	Amt. (₹)
2015 March 1	–	–	–	–	–	–	5,000	10	50,000
March 5	–	–	–	3,000	10	30,000	2,000	10	20,000
March 7	6,000	10.20	61,200	–	–	–	2,000 6,000	10 10.20	20,000 61,200
March 15	–	–	–	2,000 500	10 10.20	20,000 5,100	5,500	10.20	56,100
March 15	–	–	–	100 (Shortage)	10.20	1,020	5,400	10.20	55,080
March 16	1,000 (Return)	9.15	9,150	–	–	–	5,400 1,000	10.20 9.15	55,080 9,150
March 17	–	–	–	4,000	10.20	40,800	1,400 1,000	10.20 9.15	14,280 9,150
March 25	2,200	10.30	22,660				1,400 1,000 2,200	10.20 9.15 10.30	14,280 9,150 22,660
March 27	–	–	–	1,400 1,000 1,400	10.20 9.15 10.30	14,280 9,150 14,420	800	10.30	8,240
Closing Stock							800		8,240

Or

Q2. (b)(i) Reorder Level = Maximum Consumption × Maximum Reorder Period

Component A = 900 × 6 = 5,400 units

Component B = 900 × 4 = 3,600 units

(ii) Minimum Level = Reorder Level - (Average Consumption × Average Reorder Period)

Component A = 5,400 – (600 × 5) = 2,400 units

Component B = 3,600 – (600 × 3) = 1,800 units

(iii) Maximum Level = Reorder Level + Reorder Quantity – (Minimum Consumption × Minimum Reorder Period)

Component A = 5,400 + 4,800 – (300 x 4) = 9,000 units

Component B = 3,600 + 7,200 – (300 x 2) = 10,200 units

(iv) Average Stock Level = Minimum Level + $\frac{1}{2}$ (Reorder Quantity)

Component A = 2,400 + $\frac{1}{2}$ × 4,800 = 4,800 units

Component B = 1,800 + $\frac{1}{2}$ × 7,200 = 5,400 units

Or, Average Stock Level = $\frac{\text{Minimum Level + Maximum Level}}{2}$

Component A = $\frac{2,400+9,000}{2}$ = 5,700 units

Component B = $\frac{1,800+10,200}{2}$ = 6,000 units

Working Notes:

1. Average Consumption = $\frac{\text{Minimum Consumption + Maximum Consumption}}{2}$

$= \frac{900 + 300}{2} = \frac{1,200}{2} = 600$

2. Average Reorder Period = $\frac{\text{Minimum Reorder Period + Maximum Reorder Period}}{2}$

Component A = $\frac{4 + 6}{2} = \frac{10}{2}$ = 5 weeks; Component B = $\frac{2 + 4}{2} = \frac{6}{2}$ = 3 weeks

Q. 3. (b) Number of Effective Machine Hours: 2,000

Computation of Machine Hour Rate

Particulars	Per Annum (₹)	Per Hour (₹)
Standing Charges:		
Rent and Rates for the shop $\left(\frac{2,000 \times 12}{4}\right)$	6,000	
General Lighting $\left(\frac{3,000 \times 12}{4}\right)$	9,000	
Insurance	9,600	
Supervisor's Salary $\left(\frac{6,000 \times 12}{5}\right)$	14,400	
Total Standing Charges	39,000	

Standing Charges per hour (₹39,000/2,000 hrs)		19.50
Variable Charges:		
Depreciation $\left(\frac{₹10,00,000 + ₹1,00,000 - ₹50,000}{2,000 \text{ hrs.} \times 15 \text{ yrs.}}\right)$		35.00
Repairs & Maintenance (₹10,000/2,000 hrs.)		5.00
Power $\left(\frac{₹200}{100} \times 10 \text{ units}\right)$		20.00
Machine Hour Rate		79.50

Or

Q 3. **Overhead Distribution Summary**

Item	Basis	Total (₹)	Production Deptt.			Service Deptt.	
			X (₹)	Y (₹)	Z (₹)	M (₹)	S (₹)
Indirect Material	Given	8,500	2,400	1,800	500	3,000	800
Indirect Labour	Given	11,150	2,500	3,000	700	3,000	1,950
Power and Light	KWH	36,000	12,000	13,200	4,800	4,500	1,500
Rent and Rates	Area	16,800	4,800	4,800	3,600	2,400	1,200
Insurance on Assets	Asset Value	6,000	1,500	1,800	1,200	900	600
Meal Charges	No. of Employees	18,000	5,400	7,200	1,800	2,400	1,200
Depreciation	Asset Value	24,000	6,000	7,200	4,800	3,600	2,400
Total		1,20,450	34,600	39,000	17,400	19,800	9,650
Department M	Direct Labour Hours		9,600	5,400	4,800	(19,800)	—
Department S	No. of Requisitions		3,886	3,173	2,591	—	(9,650)
Total (A)		1,20,450	48,086	47,573	24,791	—	—
Labour Hrs. (B)			8,000	4,500	4,000		
Labour Hour Rate (A ÷ B)			**6.01**	**10.57**	**6.20**		

Q. 4. (b) **Operating Cost Sheet**

for the month of December 2016

Particulars	₹	₹
Standing Charges:		
Wages of drivers, conductors	96,000	
Salaries of office staff	30,000	
Honoraruim of accountant	10,000	
Road tax and insurance	64,000	
Taxation insurance and other charges	80,000	2,80,000
Variable Charges:		
Diesel, Oil, etc.	1,60,000	
Repairs and Maintenance	32,000	
Depreciation	1,04,000	2,96,000
Total Operating Cost		5,76,000

Cost per passenger km = $\frac{₹5,76,000}{7,20,000}$ = ₹0.80

Working Note: Passenger kms. for the month of December, 2016

= No. of buses × Distance × Capacity of each bus × Actual capacity utilised × 2 (Round trip) × No. of days

= 4 × 100 kms. × 40 passengers × 75/100 × 2 trips × 30 = 7,20,000 km

Or

Q. 4.

Cost Sheet

for the year ending 31-12-2016

Particulars		₹
Materials		20,00,000
Wages		10,00,000
	Prime Cost	30,00,000
Add: Factory Overheads (100% of Wages)		10,00,000
	Gross Factory Cost	40,00,000
Less: Closing Stock of Work-in-Progress		1,40,000
	Factory Cost	38,60,000
Add: Administrative Overheads (10% of Factory Cost)		3,86,000
	Cost of Production (21,230 units)	42,46,000
Less: Closing Stock of Finished Goods $\left(\frac{₹42,46,000}{21,230} \times 1,230 \text{ units}\right)$		2,46,000
	Cost of Goods Sold	40,00,000
Add: Selling and Distribution Overheads (20,000 × ₹20)		4,00,000
	Total Cost	44,00,000
Add: Profit (Balancing Figure)		**6,00,000**
	Sales (given)	50,00,000

Profit and Loss Account

Dr. *for the year ending 31-12-2016* ***Cr.***

Particulars	₹	Particulars	₹	₹
To Materials	20,00,000	By Sales		50,00,000
To Wages	10,00,000	By Closing Stock:		
To Factory Overheads	9,00,000	Work-in-Progress	1,40,000	
To Administrative Overheads	5,20,000	Finished Goods	3,00,000	4,40,000
To Selling and Distribution Overheads	3,60,000			
To Goodwill written off	4,00,000			
To Interest paid on Capital	40,000			
To Net Profit	2,20,000			
	54,40,000			54,40,000

Reconciliation Statement

Particulars	₹	₹
Profit as per Cost Accounts		6,00,000
Add: Over-absorbed Factory Overheads (₹10,00,000 – ₹9,00,000)		1,00,000
Over-absorbed Selling and Distribution Overheads (₹4,00,000 – ₹3,60,000)		40,000
Over-valuation of Finished Stock in Financial Accounts (₹3,00,000 – ₹2,46,000)		54,000
Total		7,94,000
Less: Under-absorbed Administrative Overheads (₹5,20,000 – ₹3,86,000)	1,34,000	
Goodwill written off	4,00,000	
Interest paid on Capital	40,000	(5,74,000)
Profit as per Financial Accounts		2,20,000

Q 5.

Dr. **Process X Account** ***Cr.***

Particulars	Units	₹	Particulars	Units	₹
To Units Introduced @ ₹10 per unit	10,000	1,00,000	By Normal Loss (300 units @ ₹2.50 per unit)	300	750
To Sundry Materials		10,000	By Abnormal Loss @ ₹17.50 per unit	200	3,500
To Labour		50,000	By Transfer to Process Y	9,500	1,66,250
To Direct Expenses		10,500			
	10,000	1,70,500		10,000	1,70,500

Working Notes:

1. Normal Loss = 3% of 10,000 units = 300 units
2. Actual Loss = Input – Output = 10,000 – 9,500 = 500 units
   Since Actual Loss is more than the normal loss, it is a case of abnormal loss.
   ∴ Abnormal Loss (in units) = Actual Loss – Normal Loss = 500 – 300 = 200 units
3. Value of Abnormal Loss

$$= \frac{\text{Total Cost} - \text{Value of Normal Loss}}{\text{Units introduced} - \text{Units of Normal Loss}} \times \text{Units of Abnormal Loss}$$

$$= \frac{₹1,70,500 - ₹750}{10,000 - 300} \times 200 \text{ Units} = \frac{₹1,69,750}{9,700} \times 200 = ₹3,500$$

Dr. **Process Y Account** ***Cr.***

Particulars	Units	₹	Particulars	Units	₹
To Transfer from Process X	9,500	1,66,250	By Normal Loss (475 units @ ₹5 per unit)	475	2,375
To Sundry Materials		15,000	By Transfer to Process Z	9,100	2,73,005
To Labour		80,000			
To Direct Expenses		11,880			
To Abnormal Gain @₹30	75	2,250			
	9,575	2,75,380		9,575	2,75,380

Working Notes:

1. Normal Loss = 5% of 9,500 = 475 units
2. Actual Loss = Input – Output = 9,500 – 9,100 = 400 units
   Since Actual Loss is less than the Normal Loss, it is case of Abnormal Gain.
   ∴ Abnormal Gain (in units) = Normal Loss — Actual Loss = 475 – 400 = 75 units
3. Value of Abnormal Gain $= \frac{₹2,73,130 - ₹2,375}{9,500 - 475} \times 75$

$$= \frac{₹2,70,755}{9,025} \times 75 = ₹2,250$$

Dr. **Process Z Account** ***Cr.***

Particulars	Units	₹	Particulars	Units	₹
To Transfer from Process Y	9,100	2,73,005	By Normal Loss (728 units @ ₹10 per unit)	728	7,280
To Sundry Materials		5,000	By Abnormal Loss @ ₹42/50	272	11,560
To Labour		65,000	By Transfer to Stock	8,100	3,44,255
To Direct Expenses		20,090			
	9,100	3,63,095		9,100	3,63,095

Working Notes:

1. Normal loss = 8% of 9,100 = 728 units
2. Actual Loss = Input – Output = 9,100 – 8,100 = 1,000 units
3. Since Actual Loss is more than Normal Loss, it is case of Abnormal Loss.
   ∴ Abnormal Loss in (in units) = Actual Loss – Normal Loss = 1,000 – 728 = 272 units
4. Value of Abnormal Loss $= \frac{₹3,63,095 - ₹7,280}{9,100 \text{ units} - 728 \text{ units}} \times 272$

$= \frac{₹3,55,815}{8,372} \times 272 = ₹11,560$

Dr. **Abnormal Loss Account** ***Cr.***

Particulars	Units	₹	Particulars	Units	₹
To Process X	200	3,500	By Cash (Process X) (200 units × ₹2.50)	200	500
To Process Z	272	11,560	By Cash (Process Z) (272 units × ₹10)	272	2,720
			By Costing Profit and Loss A/c (Balancing Figure)		11,840
	472	15,060		472	15,060

Dr. **Abnormal Gain Account** ***Cr.***

Particulars	Units	₹	Particulars	Units	₹
To Normal Loss A/c (75 units × ₹5)	75	375	By Process Y	75	2,250
To Costing Profit and Loss A/c (Bal. fig.)		1,875			
	75	2,250		75	2,250

Or

Q 5. (b) ***Dr.*** **Contract Account** ***Cr.***

Particulars		₹	Particulars		₹
To Materials sent to site		85,500	By Materials returned to store		542
To Labour	74,200		By Materials in hand		1,890
Add: Wages Accrued	2,400	76,600	By Work-in-progress:		
To Direct Expenses	3,165		Work Certified	1,95,000	
Add: Direct Expenses Accrued	240	3,405	Work Uncertified	4,500	1,99,500
To Establishment charges		4,152	By Plant in hand		11,000
To Plant		15,000			
To Notional Profit c/d		28,275			
		2,12,932			2,12,932
To Profit and Loss A/c $\left(₹28,275 \times \frac{2}{3} \times \frac{₹1,80,000}{₹1,95,000}\right)$		17,400	By Notional Profit b/d		28,275
To Reserve		10,875			
		28,275			28,275

Balance Sheet (Extracts)

Liabilities	₹	Assets		₹
Wages Accrued	2,400	Plant		11,000
Direct Expenses Accrued	240	Materials in hand		1,890
Profit and Loss A/c (Profit)	17,400	Work Certified	1,95,000	
		Add: Work Uncertified	4,500	
			1,99,500	
		Less: Reserve	(10,875)	
		Less: Cash Received	(1,80,000)	8,625

Working Notes:

Work Certified = ₹1,95,000; Contract Price = ₹2,50,000

$$\text{Work Certified as percentage of Contract Price} = \frac{\text{Work Certified}}{\text{Contract Price}} \times 100$$

$$= \frac{1,95,000}{2,50,000} \times 100 = 78\%$$

When Work Certified is 50% or more but less than 90% of Contract Price, then the profit to be transferred to Profit and Loss Account is computed as follows:

$$\therefore \text{Transfer to Profit and Loss A/c} = \frac{2}{3} \times \text{Notional Profit} \times \frac{\text{Cash Received}}{\text{Work Certified}}$$

$$= \frac{2}{3} \times ₹28,275 \times \frac{₹1,80,000}{₹1,95,000} = ₹17,400$$