Solutions

Q. 1. (b) (i) **Re-order Level** = Maximum usage × Maximum Re-order period

Material A = 9,000 × 6 = 54,000 units

Material B = 9,000 × 4 = 36,000 units

(ii) **Minimum Level** = Re-order Level – (Average usage × Average Re-order period)

Material A = 54,000 – (6,000 × 5) = 24,000 units

Material B = 36,000 – (6,000 × 3) = 18,000 units

(iii) **Maximum Level** = Re-order Level + Re-order Quantity – (Minimum usage × Minimum Re-order period)

Material A = 54,000 + 48,000 – (3,000 × 4) = 90,000 units

Material B = 36,000 + 72,000 – (3,000 × 2) = 1,02,000 units

(iv) **Average Stock Level** = Minimum Level + ½ of Re-order quantity

Material A = 24,000 + ½ of 48,000 = 48,000 units

Material B = 18,000 + ½ of 72,000 = 54,000 units

Or

(b) (i) In order to determine the method of pricing that was employed, the price per unit on 5th and 8th March is calculated as follows:

$$\text{5th March} = \frac{\text{Total Value}}{\text{Total Quantity}} = \frac{₹1,600}{500 \text{ Units}} = ₹3.20$$

$$\text{8th March} = \frac{\text{Total Value}}{\text{Total Quantity}} = \frac{₹2,800}{700 \text{ Units}} = ₹4$$

$$\text{12th March} = \frac{₹1,400}{350 \text{ Units}} = ₹4$$

The issue price on 12th March (₹4) equals the average price on 8th March (₹4). This means *Weighted Average Method* has been used.

(ii) **Stores Ledger Account (Weighted Average Method)**

Date March, 2015	Receipts			Issues			Balance		
	Qty.	Rate (₹)	Amt (₹)	Qty.	Rate (₹)	Amt (₹)	Qty.	Rate (₹)	Amt (₹)
5	500	3.20	1,600	–	–	–	500	3.20	1,600
8	200	6.00	1,200	–	–	–	700	4.00	2,800
12	–	–	–	350	4.00	1,400	350	4.00	1,400
17	250	4.00	1,000	–	–	–	600	4.00	2,400
20	200	12.00	2,400	–	–	–	800	6.00	4,800
25	–	–	–	500	6.00	3,000	300	6.00	1,800
26	500	8.00	4,000	–	–	–	800	7.25	5,800
30	–	–	–	400	7.25	2,900	400	7.25	2,900

Q. 2. (b) **Statement of Computation of Minimum Price (for 6,000 Units)**

Particulars	₹	₹	Per unit (₹)
Materials		15,60,000	
Direct Labour		6,72,000	
Direct Charges		4,000	
	Prime Cost	22,36,000	372.66
Add: Production Overheads:			
Fixed (₹8,800 + ₹8,000)	16,800		
Variable	4,32,000	4,48,800	74.80
	Factory Cost	26,84,800	447.46
Administrative Overheads (₹5,600 + 25%)		7,000	
	Cost of Production	26,91,800	448.63
Add: Selling Overheads:			
Fixed	3,200		
Variable	2,30,400	2,33,600	
	Total Cost	29,25,400	487.57
	Profit	3,25,045	54.17
	Sales	32,50,445	541.74

Working Notes:

1. Material cost = $\frac{₹26,000}{100}$ × 6,000 units = ₹15,60,000

2. Labour cost = $\frac{₹14,000}{100}$ = ₹140 less 20% = ₹112 per unit

   Total labour cost = ₹112 × 6,000 units = ₹6,72,000

3. *Production Overheads:*

   Variable = (16,000 × 45%) ÷ 100 = ₹72 per unit

   Total variable overheads = ₹72 × 6,000 units = ₹4,32,000

   Fixed = 16,000 × 55% = ₹8,800

4. *Selling Overheads:*

   Variable = (₹6,400 × 60%) ÷ 100 = ₹38.40

   Total variable overheads = ₹38.40 × 6,000 units = ₹2,30,400

   Fixed selling overheads = ₹6,400 – (₹38.40 × 100) × 125% = ₹3,200

5. Profit = $\frac{₹8,000}{₹80,000} = \frac{1}{10}$ or 10% of Sales;

   Sales = ₹29,25,400 × $\frac{100}{90}$ = ₹32,50,445 (Approx.)

Or

(b) **Computation of Machine Hour Rate**

Particulars	Per annum (₹)	Per hour (₹)
Standing Charges:		
Wages of operator $\left(\frac{₹\ 4,000 \times 12}{3}\right)$	16,000	
Lighting charges (₹2,500 × 12 × 8/48)	5,000	
Insurance (₹25,00,000 × 2%)	50,000	
Other charges (₹6,500 × 12)	78,000	
Total	1,49,000	
Standing charges per hour = $\left(\frac{₹\ 1,49,000}{2,600\ hrs}\right)$		57.31
Machine Expenses:		
Depreciation = $\left(\frac{₹\ 25,00,000 - ₹\ 1,00,000}{26,000\ hrs}\right)$		92.31
Repairs and maintenance = $\left(\frac{₹\ 3,50,000}{26,000\ hrs}\right)$		13.46
Chemical = $\left(\frac{₹\ 9,880}{2,600\ hrs}\right)$		3.80
Power		70.50
Machine Hour Rate		237.38

Working Notes:

1. Working hours = 3,000 hrs – 400 hrs = 2,600 hours per year.
2. For ten years = 2,600 hrs. × 10 = 26,000 hours.
3. *Setting up time of 156 hours is to be treated as production time. Therefore, power cost is computed as follows:*
   2,600 hrs – 156 hrs = 2,444 hours

   Power Cost = $\frac{2,444\ hrs \times 15\ units \times ₹5}{2,600\ hrs}$ = ₹70.50 per hour

   Power is not consumed during setting-up time.

Q. 3. (b) *Calculation of Overhead Rates:*

(i) Direct Labour Hour Rate = $\frac{\text{Departmental Overheads}}{\text{Direct Labour Hours}} = \frac{₹4,00,000}{20,000\ hrs}$ = ₹20

(ii) Direct Labour Cost Rate = $\frac{\text{Departmental Overheads}}{\text{Direct Wages}} \times 100 = \frac{₹4,00,000}{5,00,000} \times 100$ = 80%

(iii) Machine Hour Rate = $\frac{\text{Departmental Overheads}}{\text{Machine Hours}} = \frac{₹4,00,000}{16,000\ hrs}$ = ₹25

Comparative Statement of Cost

	Direct Labour Hour Rate (₹)	Direct Labour Cost Rate (₹)	Machine Hour Rate (₹)
Materials	61,000	61,000	61,000
Direct wages	44,000	44,000	44,000
Prime Cost	**1,05,000**	**1,05,000**	**1,05,000**
Factory Overheads:			
(i) 1,250 hours @ ₹20	25,000	–	–
(ii) 80% of ₹44,000	–	35,200	–
(ii) 800 Machine Hours @ ₹25	–	–	20,000
Factory Cost	**1,30,000**	**1,40,200**	**1,25,000**

Or

Contract Account

Dr. *for the year ending 31st March, 2015* ***Cr.***

Particulars	₹	Particulars	₹
To Materials	9,37,500	By Loss on Plant (Accident)	37,500
To Wages	13,12,500	By Loss of Materials (Accident)	30,000
To Expenses	62,500	By Plant returned (₹50,000 – 10% Depreciation)	45,000
To Plant	2,50,000	By Plant at site (₹1,62,500 – 10% Depreciation)	1,46,250
To Notional Profit c/d	2,58,750	By Materials at site	37,500
		By Work-in-Progress:	
		Work certified (₹20,00,000 × 100/80)	25,00,000
		Work Uncertified	25,000
	28,21,250		28,21,250
To Profit and Loss A/c (₹2,58,750 × 2/3 × 80%)	1,38,000	By Notional Profit b/d	2,58,750
To Balance c/d	1,20,750		
	2,58,750		2,58,750

Balance Sheet

as on 31st March, 2015

Liabilities		₹	Assets		₹
Share Capital		10,00,000	Land and Building		4,25,000
Net Profit	1,38,000		Plant in store		45,000
Less: Plant loss	(37,500)		Plant at site		1,46,250
Less: Material loss	(30,000)	70,500	Materials at site		37,500
Sundry Creditors		1,00,000	Bank		1,12,500
			Work-in-Progress:		
			Work Certified	25,00,000	
			Work Uncertified	25,000	
				25,25,000	
			Less: Profit in Reserve	1,20,750	
				24,04,250	
			Less: Cash received	20,00,000	4,04,250
		11,70,500			11,70,500

Q. 4. (a) **Average No. of workers** = $\frac{\text{No. of workers in the beginning + No. of workers at the end}}{2}$

$= \frac{3,500 + 4,000}{2} = \frac{7,500}{2} = 3,750$ workers

1. **Labour Turnover Rate (Separation Method)**

$= \frac{\text{No. of workers Separated}}{\text{Average no. of workers}} \times 100$

$= \frac{50 + 150}{3,750} \times 100 = 5.33\%.$

2. **Labour Turnover Rate (Replacement Method)**

$= \frac{\text{No. of workers replaced}}{\text{Average no. of workers}} \times 100$

$= \frac{560 - 50}{3,750} \times 100 = \frac{510}{3,750} \times 100 = 13.6\%.$

(b) **Operating Cost Sheet for October, 2014**

Particulars		₹
Standing charges:		
Wages of drivers, conductors	1,60,000	
Salaries of office staff	70,000	
Honorarium of accountant	25,000	
Road Tax and Insurance	50,000	
Interest and other charges	1,12,500	
Total Standing Charges (A)		4,17,500
Running & Maintenance Charges:		
Diesel, Oil, etc.	7,50,000	
Repairs and maintenance	32,500	
Depreciation	1,50,000	
Total Running & Maintenance Charges (B)		9,32,500
Total Cost (A + B)		13,50,000

Total Passenger km

= 5 buses × 125 km × 2 × 50 passengers × 80% × 30 days*

= 15,00,000 km

Cost per passenger km = ₹13,50,000 ÷ 15,00,000 passenger km	₹0.90
Add: Profit (25% of takings, *i.e.*, 0.90 × 25 ÷ 75)	₹0.30
Fare to be charged per passenger km	₹1.20

*Though there are 31 days in the month of October, the calculations have been done for 30 days of the month as per the given question.

Or

Dr. **Process P-1 Account** ***Cr.***

Particulars	Units	₹	Particulars	Units	₹
To Materials @ ₹5	80,000	4,00,000	By Normal Loss A/c @ ₹2 (10% of 80,000)	8,000	16,000
To Direct Labour		70,000	By Abnormal Loss A/c @ ₹7*	2,000	14,000
To Overheads		50,000	By Process P-2 A/c (@ ₹7 per unit)*	70,000	4,90,000
	80,000	5,20,000		80,000	5,20,000

*Cost per unit = $\frac{₹5,20,000 - ₹16,000}{80,000 - 8,000} = \frac{₹5,04,000}{72,000}$ = ₹7

Dr. **Process P-2 Account** ***Cr.***

Particulars	Units	₹	Particulars	Units	₹
To Process P-1 A/c	70,000	4,90,000	By Normal Loss A/c @ ₹8 (4% of ₹72,000)	2,880	23,040
To New Materials@ ₹ 10	2,000	20,000	By Finished Stock A/c	70,000	9,69,500
To Direct Labour		2,50,000	(@ ₹13.85 per unit*)		
To Overheads		2,20,500			
		9,80,500			
To Abnormal Gain A/c (@ ₹13.85 per unit)*	880	12,040			
	72,880	9,92,540		72,880	9,92,540

*Cost per unit = $\frac{₹9,80,500 - ₹23,040}{72,000 - 2,880 \text{ units}} = \frac{₹9,57,460}{69,120}$ = ₹13.85

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

Particulars	Units	₹	Particulars	Units	₹
To Process P-1 A/c	2,000	14,000	By Cash A/c	2,000	4,000
			By Costing Profit and Loss A/c		10,000
	2,000	14,000		2,000	14,000

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

Particulars	Units	₹	Particulars	Units	₹
To Normal Loss A/c	880	7,040	By Process P-2 A/c	880	12,040
To Costing Profit and Loss A/c		5,000			
	880	12,040		880	12,040

Dr. **Costing Profit and Loss Account** ***Cr.***

Particulars	₹	Particulars	₹
To Finished Stock A/c	9,69,500	By Sale (70,000 units × ₹ 20)	14,00,000
To Abnormal Loss A/c	10,000	By Abnormal Gain A/c	5,000
To Net Profit	4,25,500		
	14,05,000		14,05,000

Q. 5.

Or

Financial Profit and Loss Account

Dr. *for the year ended 31st March, 2015* ***Cr.***

Particulars	₹	Particulars	₹
To Direct Materials	7,50,000	By Sales	18,00,000
To Direct Wages	4,50,000	By Dividend received	20,000
To Works Overheads	2,40,000	By Interest on Bank Deposits	3,000
To Administrative Overheads	1,05,000	By Closing Stock:	
To Selling and Distribution Overheads	1,44,000	Work-in-Progress	36,000
To Bad Debts	12,000	Finished Goods	48,000
To Preliminary Expenses	8,000		
To Legal Expenses	2,000		
To Net Profit	1,96,000		
	19,07,000		19,07,000

Cost Sheet

for the year ending 31st March, 2015

Particulars		₹
Direct Materials		8,40,000
Direct Wages		4,50,000
	Prime Cost	12,90,000
Add: Factory Overheads (@ 20% of Prime cost)		2,58,000
		15,48,000
Less: Work-in-Progress (Closing)		36,000
	Works Cost	15,12,000
Add: Administrative Overheads (@ ₹9 for 12,400 units)		1,11,600
	Cost of Goods Produced	16,23,600
Less: Closing Stock		52,374
	Cost of Goods Sold	15,71,226
Add: Selling and Distribution Overheads (@ ₹12 for 12,000 units)		1,44,000
	Total Cost	17,15,226
	Profit	84,774
	Sales	18,00,000

Working Notes:

1. Total units produced = 12,000 + 400 = 12,400 units.

2. Value of Closing Stock = $\frac{₹16,23,600}{12,400 \text{ units}}$ × 400 units = ₹ 52,374 (approx.)

Reconciliation Statement

Particulars		₹
Profit as per Cost Accounts		84,774
Add: Over-charging of Material Cost in Cost Accounts (₹8,40,000 – ₹7,50,000)	90,000	
Over-charging of Works Overheads (₹2,58,000 – ₹2,40,000)	18,000	
Over-recovery of Administrative Overheads (₹1,11,600 – ₹1,05,000)	6,600	
Dividend Income	20,000	
Interest Income	3,000	1,37,600
		2,22,374
Less: Over-valuation of Closing Stock (₹52,374 – ₹48,000)	4,374	
Bad Debts	12,000	
Preliminary Expenses	8,000	
Legal Expenses	2,000	26,374
Profit as per Financial Accounts		1,96,000