Solutions

Q. 1. (b) (i) **Re-order Level** = Maximum Consumption × Maximum Re-order Period
= (600 × 2 months (WN1)) = 1,200 units.

(ii) **Minimum Stock Level** = Re-order Level – (Normal consumption × Normal Re-order Period)
= 1,200 – (300 × 1.5 months (WN 1)) = 750 units.

(iii) **Maximum Stock Level** = Re-order Level + Re-order Quantity – (Minimum Consumption × Minimum Re-order Period)
= 1,200 + 300 (WN 2) – (100 × 1 month) = 1,400 units.

(iv) **Average Stock Level** = ½(Minimum level + Maximum level)
= ½(750 + 1,400) = 1,075 units.

Working Notes:

1. It is assumed that re-order period is 1 to 2 months.

∴ Normal re-order period = $\frac{1+2}{2}$ = 1.5 month.

2. *Re-order quantity is calculated as follows:*

Economic Order Quantity or Re-order Quantity = $\sqrt{\frac{2AO}{I}} = \sqrt{\frac{2 \times 3,600 \times ₹400}{50\% \times ₹64}}$ = 300 units.

Or

(b) **Stores Ledger Account of Material "A" (Weighted Average Method)**

Date	Receipts			Issues			Balance		
	Qty. (Units)	Rate (₹)	Amt. (₹)	Qty. (Units)	Rate (₹)	Amt. (₹)	Qty. (Units)	Rate (₹)	Amt. (₹)
March 1	–	–	–	–	–	–	2,000	5	10,000
3	–	–	–	1,500	5	7,500	500	5	2,500
4	4,500	6	27,000	–	–	–	5,000	5.90	29,500
7	–	–	–	1,600	5.90	9,440	3,400	5.90	20,060
8	100	5	500	–	–	–	3,500	5.87	20,560
	(Return)								
15	2,400	6.50	15,600				5,900	6.13	36,160
18	–	–	–	200	6	1,200	5,700	6.13	34,960
				(Return)					
24	1,000	7	7,000	–	–	–	6,700	6.26	41,960
26	–	–	–	2,100	6.26	13,146	4,600	6.26	28,814
27	1,200	7.50	9,000	–	–	–	5,800	6.52	37,814
31	–	–	–	2,800	6.52	18,256	3,000	6.52	19,558

Quantity of the material consumed in March
= 1,500 + 1,600 – 100 + 2,100 + 2,800 = 7,900 units
Total value of materials consumed in March
= ₹7,500 + ₹9,440 – ₹500 + ₹13,146 + ₹18,256 = ₹47,842

Q. 2. (a) Actual overheads = ₹40,00,000
Absorbed overheads = 1,50,000 hrs. @ ₹25 = ₹37,50,000
Under-absorbed overheads= Actual overheads – Absorbed overheads
= ₹40,00,000 – ₹37,50,000 = ₹2,50,000

Under-absorption:

Due to Defective Planning = ₹2,50,000 × 60% = ₹1,50,000 which is to be transferred to Costing Profit and Loss Account.

Due to increase in cost = ₹2,50,000 × 40% = ₹1,00,000

This ₹1,00,000 will be charged to cost of sales and finished stock in the ratio of 30,000 and 10,000. This means ₹1,00,000 × 30,000/40,000 = ₹75,000 will be charged to cost of sales and the rest ₹25,000 to finished stock.

Or

Computation of Machine Hour Rate

	Large Machine (₹)	Small Machine (₹)
Standing Charges (for 3 months):		
Rent and Rates	400	200
Lighting	97.50	65
Manager's Salary	100	100
Total	597.50	365
Standing Charges per hour	1.66	1.01
Variable Charges:		
Depreciation	1.33	0.43
Repairs and Maintenance	0.33	0.13
Power	1.00	0.10
Machine Hour Rate	**4.32**	**1.67**

Working Notes:

1. Working hours in 3 months = 1,440 × 3/12 = 360 hours
2. Rent and Rates for 3 months = ₹6,400 × 3/12 = ₹1,600
   Rent and Rates: For Large Machine = ₹1,600 × 1/4 = ₹400
   For Small Machine = ₹1,600 × 1/4 × 1/2 = ₹200
3. Lighting for 3 months = ₹1,820 × 3/12 = ₹455
   No. of workers: For large machine = 3 × 2 = 6; for small machine = 2 × 4 = 8
   Lighting expenses of ₹455 are apportioned to large and small machines in the ratio of 6 : 8.
   Lighting Expenses: For 1 Large Machine = ₹455 × 6/14 × 1/2 = ₹97.50
   For 1 Small Machine = ₹455 × 8/14 × 1/4 = ₹65
4. Manager's salary for all machines = ₹4,800 × 1/2 = ₹2,400
   Manager's salary per Machine (for 3 months) = ₹2,400/6 × 3/12 = ₹100
5. *Depreciation per hour* = Cost of Machine – Scrap Value/Working life of Machine (in hours)

   Large Machine = $\frac{₹20,000 - ₹4,000}{12,000 \text{ hrs.}}$ = ₹1.33

   Small Machine = $\frac{₹4,000 - ₹100}{9,000 \text{ hrs.}}$ = ₹0.43
6. *Repairs and maintenance per hour:* Large Machine = ₹4,000/12,000 hrs. = ₹0.33
   Small Machine = ₹1,200/9,000 hrs. = ₹0.13
7. *Power per hour:* For Large Machine = 20 units @ 5 paise = ₹1
   For Small Machine = 2 units @ 5 paise = ₹0.10

Q. 3. (i) **Cost Sheet**

for the year ending 31st March, 2017

Particulars	Total 10,000 units (₹)	Per unit (₹)
Direct Material	90,000	9
Direct Wages	60,000	6
Prime Cost	1,50,000	15
Add: Factory Overheads:		
Power and Consumable Stores	12,000	1.20
Indirect Wages	15,000	1.50
Factory Lighting	5,500	0.55
Rectification Cost	3,000	0.30
Plant Repair and Depreciation	11,500	1.15
	1,97,000	19.70
Less: Scrap Sale	(2,000)	(0.20)
Works Cost	1,95,000	19.50
Add: Office and Adm. Overheads: Salaries and Management Expenses	33,500	3.35
Cost of Production	2,28,500	22.85
Add: Selling Overheads: Selling Expenses	5,500	0.55
Cost of Sales	2,34,000	23.40
Profit	82,000	8.20
Sales	3,16,000	31.60

(ii) **Statement of Estimated Cost and Profit**

for the year 2017–18

Particulars	Total (₹) (For 15,000 units)	Per unit ₹
Direct Material [(15,000 × 9) + 10%]	1,48,500	9.90
Direct Wages [(15,000 × 6) + 10%]	99,000	6.60
Prime Cost	2,47,500	16.50
Factory Overhead (75% of wages)	74,250	4.95
Works Cost	3,21,750	21.45
Office and Administration Overhead (17.18% of works cost)	55,277	3.69
Cost of Production	3,77,027	25.14
Selling Overhead (2.82% of works cost)	9,073	0.60
Total Cost	3,86,100	25.74
Profit	78,900	5.26
Sales	4,65,000	31.00

Working Notes:

1. Factory Overhead Rate = $\frac{\text{Factory Overhead}^*}{\text{Direct Wages}} \times 100 = \frac{₹45,000}{₹60,000} \times 100 = 75\%$

*Factory Overhead = ₹(12,000 + 15,000 + 5,500 + 3,000 + 11,500 – 2,000) = ₹45,000

2. Office Overhead Rate = $\frac{\text{Office Overhead}}{\text{Works Cost}} \times 100 = \frac{₹33,500}{₹1,95,000} \times 100 = 17.18\%$

3. Selling Overhead Rate = $\frac{\text{Selling Overhead}}{\text{Works Cost}} \times 10 = \frac{₹5,500}{₹1,95,000} \times 100 = 2.82\%$

Or

(b)

Contract Account

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

Particulars	₹ ('000)	**Particulars**	₹ ('000)
To Materials	5,000	By Materials at Site	1,800
To Wages	3,800	By Materials returned	100
To Wages accrued	10	By Work-in-Progress:	
To Direct expenses	500	Certified	10,000
To Plant hired	700		
To Plant depreciation (₹8 lakh – ₹5 lakh)	300		
To Site office cost	270		
To Notional Profit c/d	1,320		
	11,900		11,900
To Profit and Loss A/c	1,200	By Notional Profit b/d	1,320
To Reserve	120		
	1,320		1,320

Working Note:

The contract is near completion as it is more than 92% complete.

The amount of profit to be taken to Profit and Loss Account is computed as follows:

= Budgeted Profit × Cash Ratio × Work Certified/Contract Price

$$= ₹1,800 \times \frac{₹7,200}{₹10,000} \times \frac{₹10,000}{₹10,800} = ₹1,200$$

Q. 4. **Operating Cost Sheet**

Particulars	₹	₹
Standing Charges:		
Salary of driver	20,000	
Salary of conductor	20,000	
Salary of accountant	10,000	
Insurance (₹48,000/12 months)	4,000	
Road Tax (₹12,000/12 months)	1,000	
Permit Fee	4,600	59,600
Running and Maintenance Expenses:		
Diesel $\left(\frac{8,040 \text{ km}}{4 \text{ km}} \times ₹40\right)$	80,400	
Lubricating Oil (8,040 km × ₹10)	80,400	
Repairs and Maintenance	14,400	
Depreciation $\left(₹60,00,000 \times \frac{20}{100} \times \frac{1}{12}\right)$	1,00,000	2,75,200
Total Cost		3,34,800
Profit (100% of Cost)		3,34,800
Total Takings		6,69,600

$\therefore$ **Rate per passenger km** = $\frac{\text{Total Takings}}{\text{Total Passenger km}} = \frac{₹6,69,600}{3,72,000 \text{ km (WN 2)}} = ₹1.80$

(i) *Fare for:* Delhi to Chandigarh = 150 km × ₹1.80 = ₹270

(ii) *Fare for:* Delhi to Agra = 120 km × ₹1.80 = ₹216

(iii) *Fare for:* Delhi to Jaipur = 270 km × ₹1.80 = ₹486

Working Notes:

1. Calculation of km travelled = Distance × Return journey × No. of days

		₹
Delhi to Chandigarh = 150 × 2 × 8	=	2,400
Delhi to Agra = 120 × 2 × 10	=	2,400
Delhi to Jaipur = 270 × 2 × 6	=	3,240
		8,040

2. Calculation of passenger km = km travelled × No. of passengers × Capacity occupied

Delhi to Chandigarh = 2,400 × 50 × 90%	=	1,08,000
Delhi to Agra = 2,400 × 50 × 85%	=	1,02,000
Delhi to Jaipur = 3,240 × 50 × 100%	=	1,62,000
		3,72,000

3. It is given that profit is 30% of takings and tax is 20% of takings

$\therefore$ Total = 50% of takings which is equal to 100% of cost.

Or

(a)

Statement of Equivalent Production

Input	Particulars	Output (in units)	Materials		Labour		Overheads	
			%	Units	%	Units	%	Units
4,000	Opening Work-in-Progress	4,000	20	800	40	1,600	40	1,600
	Units Completed	10,000	100	10,000	100	10,000	100	10,000
16,000	Closing Work-in-Progress	6,000	80	4,800	60	3,600	60	3,600
20,000	**Total**	20,000		15,600		15,200		15,200

(b)

Dr. **Process I Account** ***Cr.***

Particulars	kg	₹	Particulars	kg	₹
To Units Introduced @ ₹10 per kg	20,000	2,00,000	By Normal Loss A/c @ ₹2 (8% of 20,000)	1,600	3,200
To Direct Materials		60,000	By Abnormal Loss A/c (@ ₹18.25)	400	7,300
To Direct Labour		40,000	By Process II A/c (@ ₹18.25)	18,000	3,28,500
To Production Overheads		39,000			
	20,000	3,39,000		20,000	3,39,000

Working Notes:

1. Abnormal Loss (in kg) = 20,000 – 18,000 – 1,600 = 400 kg

2. Cost per kg = $\frac{₹3,39,000 - ₹3,200}{20,000 \text{ kg} - 1,600 \text{ kg}} = \frac{₹3,35,800}{18,400 \text{ kg}} = ₹18.25$

Dr. **Process II Account** ***Cr.***

Particulars	kg	₹	Particulars	kg	₹
To Process I A/c	18,000	3,28,500	By Normal Loss A/c @ ₹3 (5% of 18,000)	900	2,700
To Direct Material A/c		40,000	By Finished Stock A/c (@ ₹25.50)	17,400	4,43,700
To Direct Labour A/c		30,000			
To Production Overheads		40,250			
To Abnormal Gain A/c (@ ₹25.50)	300	7,650			
	18,300	4,46,400		18,300	4,46,400

Cost price per kg (WN 4)	₹25.500
Add: Profit 20% of selling price (or 25% of cost price)	₹6.375
Selling price of the end product	₹31.875

Working Notes:

3. Abnormal Gain (in kg) = 18,000 – 17,400 – 900 = 300 kg

4. Cost per kg = $\frac{₹4,38,750 - 2,700}{18,000 - 900 \text{ kg}} = \frac{₹4,36,050}{17,100 \text{ kg}}$ = ₹25.50

Q. 5. **Cost Sheet**

for the year ending 31st March, 2017

Particulars		₹
Purchases		40,000
Add: Opening stock of raw material		5,000
Less: Closing stock of raw material		(4,300)
Materials consumed		40,700
Direct wages		20,000
	Prime Cost	60,700
Factory Overhead:		
Add: Indirect wages	3,000	
Factory Expenses (absorbed)	21,000	24,000
		84,700
Add: Opening Work-in-Progress		6,500
Less: Closing Work-in-Progress		(3,700)
	Works Cost	87,500
Add: Administration Overhead (absorbed)		2,300
	Cost of Production	89,800
Add: Opening stock of finished goods		4,500
Less: Closing stock of finished goods		(6,200)
	Cost of Goods Sold	88,100
Add: Selling expenses (absorbed)		4,500
	Total Cost	92,600
Add: Profit		17,400
	Sales	1,10,000

Profit and Loss Account

Dr. *for the year ending 31st March, 2017* ***Cr.***

Particulars	₹	**Particulars**	₹
To Opening stock ₹(6,000 + 7,000 + 5,000)	18,000	By Sales	1,10,000
To Purchases	40,000	By Interest received	1,600
To Direct wages	20,000	By Closing Stock ₹(4,000 + 3,000 + 5,900)	12,900
To Indirect wages	3,000		
To Factory expenses	17,000		
To Administration expenses	3,000		
To Selling expenses	4,000		
To Financial expenses	1,000		
To Profit (as per financial accounts)	18,500		
	1,24,500		1,24,500

Reconciliation Statement

Particulars		₹
Profit as per Cost Accounts		17,400
Add: Factory expenses over-absorbed (₹21,000 – ₹17,000)	4,000	
Selling expenses over-absorbed (₹4,500 – ₹4,000)	500	
Interest received not shown in Financial Accounts	1,600	6,100
		23,500
Less: Administration expenses under-absorbed (₹3,000 – ₹2,300)	700	
Financial expenses not shown in Cost Accounts	1,000	
Opening stock under-valued in Cost Accounts:		
Raw Material (₹6,000 – ₹5,000)	1,000	
Work-in-Progress (₹7,000 – ₹6,500)	500	
Finished Goods (₹5,000 – ₹4,500)	500	
Closing stock over-valued in Cost Accounts:		
Raw Material (₹4,300 – ₹4,000)	300	
Work-in-Progress (₹3,700 – ₹3,000)	700	
Finished Goods (₹6,200 – ₹5,900)	300	(5,000)
Profit as per Financial Account		18,500